Landscaping and Tree Conservation Manual

GREENSBORO

LANDSCAPING
AND
TREE CONSERVATION
MANUAL

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Table of Contents

Introduction 1

The Value of Trees 1

Contact Information 3

Frequently Asked Questions 4

The Advisory Commission on Trees 7

Article 10: Landscaping 9

- Scope and Purpose 9
- Applicability 9
- Exemptions 10
- Other Landscaping Standards 10
- Multi-family and Nonresidential Requirements 10
  - Applicability 10
  - Street Planting Yards 10
  - Buffer Planting Yards 11
  - Table 10-1: Type of Planting Yards Required 11
  - Table 10-2: Land Use Classes 13
  - Table 10-3: Planting Yard Dimensions and Landscaping 14
  - Planting Yards on Slopes 15
  - Street and Buffer Planting Yard Flexibility 16
  - Parking Lot Landscaping 17
    - Table 10-4: Location of Parking Lot Planting Areas 17
    - Tree Conservation and Parking Lot Plantings 18
- Urban Landscaping Requirements 19
  - Applicability 19
  - Pedestrian Landscaping 19
  - Vehicular Use Area Screening 19
  - Surface Parking Lot Landscaping 20
    - Table 10-5: Location of Parking Lot Planting Areas 20
- Material, Design, Installation and Maintenance 21
  - Plant Materials 21
    - General 21
    - Canopy Tree Size 21
    - Understory Tree Size 21
    - Shrub Size and Type 21
  - Drought-Tolerant Planting Techniques 22
  - Grouping 22
  - Berm Size 22
  - Wall Planters 22
  - Tree Wells 22

Table of Contents (cont.)

Material, Design, Installation and Maintenance (Cont.)
- Encroachments in Required Planting Yards 22
- Setback less than Planting Yard Width 23
- Planting in Shaded Areas 23
- Obstructions 23
- Planting in Easements 23
- Maintenance of Planting Yards 24
- Credit for Preservation of Existing Trees 25

Alternate Methods of Compliance 25
Review and Approval Procedures for Landscaping 26
- Modifications 26
- Description 26
- Type 1 Modifications 26
- Type 2 Modifications 26
- Decision-making Criteria for Type 1 and Type 2 Modifications 26
- Type 1 Modifications to Landscaping Requirements 27
- Type 2 Modifications to Landscaping Requirements 27
- Review and Decision Making Bodies 28
- Appeals of Modification Final Action 28
- Duration of Approval 28

Landscape Plan 29
- Certification of Plant Material 29
- Certificate of Occupancy 29
- Temporary Certificate of Occupancy 29

Enforcement 29
- Enforcement Procedure 29
- Notice of Violation 29
- Appeal 30
- Notice of Decision 30
- Failure to Comply with Notice 30
- Additional Enforcement Procedures 30

Landscape Plan Review Process 31
Conceptual Landscape Plan Checklist 32
Landscape Plan Checklist 33

Article 12, Section 1: Tree Conservation 34

Purpose 34
Applicability 34
Exemptions 34
Conservation of Existing Trees 35

Table of Contents (cont.)

Article 12, Section 1: Tree Conservation (cont.)
Tree Conservation Area Determination 38
Table 12-1: Tree Conservation Area Requirements 38
Trees to be Saved 38
Smaller Trees 39
Other Provisions 39
TCA Selection 39
Activities Allowed in the TCA 39
Tree Removal Inside the Critical Root Zone Area (TCA) 40
Certification 40
Tree Conservation Flexibility Standards 40
Undisturbed Stream Buffers 40
Land Dedications 40
Reforestation Credits 40
Alternate Methods of Compliance 41
Reduction of Required Parking 41
Review and Approval Procedures for Tree Conservation 41
Modifications 41
Description 41
Type 1 Modifications 41
Type 2 Modifications 41
Decision-making Criteria for Type 1 and Type 2 Modifications 42
Type 1 Modifications to Tree Conservation Requirements 42
Type 2 Modifications to Tree Conservation Requirements 42
Review and Decision Making Bodies 43
Appeals of Modification Final Action 43
Duration of Approval 44
Tree Disturbance Permit 44
Requirements for a Tree Disturbance Permit 44
Tree Conservation Plan Approval 44
Plans 44
Plan Notes 45
Review 45
Tree Conservation Measures 45
Inspections 46
Timing 46
Permit Duration and Renewal 46
Enforcement 46
Violations Not Involving Tree Removal or Damage 46
Violations Involving Tree Removal or Damage 47
Penalties for Removal or Damage to Trees 47
Additional Civil Penalties 48

Table of Contents (cont.)

Article 12, Section 1: Tree Conservation (cont.)
Appeal of Tree Conservation Administrative Decision 48
Applicability 48
Application Requirements 48
Deadline for Submitting Applications 49
Notice and Public Hearings 49
Action by the Planning Director 49
Action by the Advisory Commission on Trees 49
Appeals from Decisions by the Advisory Commission on Trees 50
Re-Appeal After a Denial by the Advisory Commission on Trees 50
Tree Conservation Review Process 51
Tree Disturbance Permit Process 52
Tree Conservation Plan Checklist 53
Tree Conservation Action Steps 54
Trees to Plant Near or Under Power Lines 55
Recommended Street Trees 56
Approved Plant List 57
Canopy Trees 57
Understory Trees 60
Shrubs 65
Standard Tree Conservation Notes 73
Standard Tree protection Detail #448 74
Standard Tree Planting Detail 75
Example Planting Rate Chart 76
Tree Disturbance Permit Application 77

INTRODUCTION

The City of Greensboro has a diverse and abundant cover of trees and vegetation. This vegetation creates aesthetic, environmental, economic and social benefits in our community which contribute to the growth and economic prosperity of the City. However, the growth and development attracted to the City of Greensboro often requires the removal of trees and other plant material, thereby depleting a most valuable resource. The Landscaping and Tree Preservation Ordinance is designed to protect, preserve and restore this valuable asset. In 1992 the City adopted the Landscape Ordinance and, in October of 2000, the City Council adopted the Tree Preservation amendments added into the existing Landscape Ordinance text.

The purpose of this document is to facilitate the use of the Landscape and Tree Preservation Ordinance by providing illustrations of key text requirements. The illustrations and the explanations are intended to help the user understand the ordinance and to suggest possible design alternatives.

The original Landscape Ordinance was adopted on July 1, 1992. The Tree Preservation requirements were added and adopted on October 17, 2000 and the Tree Preservation and Landscape Ordinance was further amended and adopted on August 19, 2003, June 18, 2008 and July 1, 2010 when the Landscaping and Tree Preservation requirements were modified and separated. Tree Preservation became Tree Conservation and was moved into the Natural Resource section of the newly adopted Land Development Ordinance.

THE VALUE OF TREES TO A COMMUNITY

The following are some facts on just how important trees are in a community setting.

> "The net cooling effect of a young, healthy tree is equivalent to ten room-size air conditioners operating 20 hours a day." -U.S. Department of Agriculture
>
> "Trees can boost the market value of your home by an average of 6 or 7 percent." -Dr. Lowell Ponte
>
> "Landscaping, especially with trees, can increase property values as much as 20 percent." -Management Information Services/ICMA
>
> "One acre of forest absorbs six tons of carbon dioxide and puts out four tons of oxygen. This is enough to meet the annual needs of 18 people." -U.S. Department of Agriculture
>
> "There are about 60 to 200 million spaces along our city streets where trees could be planted. This translates to the potential to absorb 33 million more tons of CO_2 every year, and saving $4 billion in energy costs." -National Wildlife Federation

“Trees properly placed around buildings can reduce air conditioning needs by 30 percent and can save 20 - 50 percent in energy used for heating." -USDA Forest Service

"Trees can be a stimulus to economic development, attracting new business and tourism. Commercial retail areas are more attractive to shoppers, apartments rent more quickly, tenants stay longer, and space in a wooded setting is more valuable to sell or rent." -The National Arbor Day Foundation

"Shade from trees could save up to $175 per year (per structure) in air conditioning costs." -Dr. Lowell Ponte

"Healthy, mature trees add an average of 10 percent to a property's value." -USDA Forest Service

"The planting of trees means improved water quality, resulting in less runoff and erosion. This allows more recharging of the ground water supply. Wooded areas help prevent the transport of sediment and chemicals into streams." -USDA Forest Service

CONTACT INFORMATION

VISIT OUR WEBSITES AT:
http://www.greensboro-nc.gov/departments/Planning
http://www.greensboro-nc.gov/departments/Planning/forestry/

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FREQUENTLY ASKED QUESTIONS

Q. I DON'T NEED TO GET A GRADING PERMIT. DO I STILL NEED TO GET A TREE DISTURBANCE PERMIT?

Yes, if you are cutting trees on the property and the property is not exempt (see exemptions), you will need to get a tree disturbance permit. Single family residential is exempt and does not need a tree disturbance permit.

Q. I need to get a grading permit. Do I need to get a Tree Disturbance Permit too?

If you have an approved site plan, no. If you do not have an approved site plan, yes.

Q: WHAT IS A TREE DISTURBANCE PERMIT?

A tree disturbance permit is an official authorization that must be issued by the City prior to any tree-disturbing activities. Tree-disturbing activities include the cutting and/or damage to the critical root zone of live trees with a diameter at breast height of 4 inches or greater on sites not accompanied by a development plan, except as expressly exempted pursuant to Sec. 30-12-1.3.

Also note that a tree disturbance permit is not the same thing as a grading permit and a grading permit may also be required. Contact the Erosion Control Division of the Engineering and Inspections Department at 373-2158.

Q: WHAT IS A PLANTING YARD?

A planting yard is a strip of land (of various widths) provided along the perimeter of a site for the installation of plant material in a combination of canopy trees, and/or understory trees, and shrubs. To determine required width and the planting rate for trees and shrubs see Sec. 30-10-2.

Q: WHAT IS A "LAND USE CLASSIFICATION" OR "LUC"?

A Land Use Classification (LUC) is a numeric value between #1 and #5 that has been established for each type of land use permitted within the City of Greensboro. The number can be found in the last column in the permitted use table; the higher the number the more intense the use. For example, single family dwellings are a LUC #1, multifamily dwellings are a LUC #2, office and light retail uses are LUC #3, motor vehicle dependent retail/service light industrial uses are LUC #4, and heavy industrial uses are a LUC #5. The above list is only a general guide: to determine the exact LUC for each individual use you must use the number listed in the Land Use Code Chart on page 13 of this manual.

Q: THERE ARE EXISTING OVERHEAD UTILITY LINES ALONG THE FRONT PROPERTY LINE WHERE I AM INSTALLING A STREET PLANTING YARD. DO I STILL NEED TO PLANT TREES IN THE STREET YARD?

The City is aware of the potential conflicts between canopy trees and overhead utility lines and offers two options to eliminate these conflicts. First, it may be possible to shift the plant material away from the overhead utility lines and onto the site so they won't grow into the utility lines. The second option is a provision in the Development Ordinance that permits the Technical Review Committee to allow the installation of smaller understory trees when they determine that there is a major conflict with overhead utility lines. See page 55 for trees that can be planted under power lines.

Q: I HAVE PLANS TO ENLARGE MY BUSINESS IN THE FUTURE BY CONSTRUCTING A 2,000 SQUARE FOOT ADDITION TO THE BUILDING AND AN ADDITIONAL 2,000 SQUARE FOOT PARKING LOT. AM I GOING TO BE REQUIRED TO PROVIDE ANY PLANTING YARDS?

Yes, the Development Ordinance requires the installation of planting yards for all expansions to buildings and parking areas that exceed 3,000 square feet. However, the planting yards are only required for the expansion of the building and the parking. It is important to note that as of June 30, 1992, expansions are cumulative. If, for the first time, you were to expand your business only 2,000 square feet, you would be exempt. If you were, at a later date, to expand another 2,000 square feet, you would not be exempt, because the cumulative expansion is over 3,000 square feet. NOTE: If the property is zoned Central Business (CB), planting yards are not required.

Q: WHAT IS A CRITICAL ROOT ZONE?

The critical root zone includes all the area within a radius equal to one foot for every one inch diameter of the tree trunk (as measured at breast height). The radius is measured outward from the root flare at ground level. NOTE: This is not the same as the drip line.

Q: I AM IN THE PROCESS OF PREPARING A SITE PLAN TO CONSTRUCT AN OFFICE BUILDING ON A SMALL LOT (70 FEET WIDE) THAT WAS CREATED MORE THAN 20 YEARS AGO. THERE ARE EXISTING SINGLE FAMILY DWELLINGS ON THE ABUTTING PROPERTY TO THE LEFT AND THE RIGHT OF THE LOT. USING THE PLANTING YARD CHART, I WOULD BE REQUIRED TO INSTALL 25 FOOT WIDE TYPE "B" PLANTING YARDS ON BOTH SIDES OF MY PROPERTY. WOULD THE LANDSCAPE REGULATIONS REALLY ONLY LEAVE ME A 20 FOOT WIDE STRIP IN THE MIDDLE OF THE LOT TO BUILD ON?

No. On lots that were created prior to July 1, 1992, and contain less than 55,000 square feet of land, no development is required to place the required landscaping on greater than 15% of the site. In cases like this, contact the Urban Forester as early in the plan preparation process as possible. Discuss the options available to provide the most

effective buffers for the abutting uses while using at least the required amount of land for vegetation.

Q: IN THE PROCESS OF PREPARING A SITE PLAN FOR A PROJECT THAT IS REQUIRED TO INSTALL PLANTING YARDS; IS A LANDSCAPE PLAN, WHICH DEPICTS THE LOCATION, NAME AND SIZE OF EVERY PLANT TO BE INSTALLED IN THE PLANTING YARDS, REQUIRED BEFORE THE SITE PLAN IS APPROVED FOR A BUILDING PERMIT?

No. The Development Ordinance allows the submission of a “conceptual landscape plan” for review and approval with the site plan. The formal landscape plan or “planting plan” must be submitted to the Planning Department for review and approval within 90 days after the issuance of a building permit or prior to the inspection for a Certificate of Occupancy, whichever occurs first.

Q: DO I NEED TO DO A TREE SURVEY?

If the site is heavily wooded and large areas are to be protected, individual trees do not need to be surveyed (see page 36).

If the site is a park-like setting with individual trees located throughout the site, survey all trees 4 inches or greater in diameter at breast height, located in areas where they will be saved (see page 36).

THE ADVISORY COMMISSION ON TREES

30-3-10 Advisory Commission on Trees (ACT)

30-3-10.1 Authority and Establishment

An Advisory Commission on Trees (ACT) is hereby established pursuant to NCGS 160A-174.

30-3-10.2 Membership

(A) Number of Members
The Advisory Commission on Trees is composed of 9 members appointed by the City Council.

(B) Composition
Members must be composed of one certified arborist, a registered forester with a minimum of 3 years experience or a tree care professional with a minimum of a bachelor's degree in forestry or urban forestry and 3 years experience or an associate's degree with a minimum of 5 years experience. one registered landscape architect with a minimum 3 years experience or landscape designer with a bachelor's degree in landscape architecture with a minimum 5 years experience, one horticulturist or botanist with a bachelor's degree in horticulture or botany and a minimum 3 years experience, 2 members of the land development (builder/contractor/developer) community with a minimum 3 years experience, one civil engineer with a minimum 3 years experience, 2 active members of a recognized environmental group, and one individual who has demonstrated an interest in conservation and natural resources.

30-3-10.3 Quorum

Five or more members of the Advisory Commission on Trees constitute a quorum.

30-3-10.4 Powers and Duties

(A) Review and Recommendation
The Advisory Commission on Trees has review and recommendation authority for Variances (Sec.30-4-13) relating to tree conservation provisions of Sec. 30-12-1.

(B) Final Action
The Advisory Commission on Trees has final decision-making authority for Type 2 Modifications (Sec.30-4-11) of the tree conservation requirements of Sec.30-12-1.

(C) Appeals
The Advisory Commission on Trees is also authorized to hear and decide appeals of decisions made by the Planning Director in enforcement (i.e., fines and penalties) of the tree conservation regulations of this ordinance.

(D) Non-regulatory
The Advisory Commission on Trees has the following additional powers and duties:

1) to review and provide recommendations for the long term tree management and maintenance plan for the city;

2) to provide professional expertise for developing program goals and policy;

3) to evaluate and monitor current regulations for effectiveness, and recommend appropriate changes regarding the tree conservation and landscape provisions of this ordinance to the city council;

4) to conduct educational programs with respect to tree conservation and landscape provisions of this ordinance within its jurisdiction; and

5) to gather information from the public, development and business communities with respect to the tree conservation and landscape provisions of this ordinance.

30-3-10.5 Voting

(A) Required Vote for Approval
An affirmative vote of a majority of the members present and voting is required to make a recommendation or any other decision in favor of an applicant. Tie votes will be considered recommendations or decisions for denial.

(B) Vote of the Chair
The chair votes as any other Commission member.

Article 10 Landscaping

30-10-1 General

30-10-1.1 Scope and Purpose

The regulations of this article establish minimum requirements for landscaping. The regulations are intended to:

(A) advance the general purposes of this ordinance;

(B) promote the conservation of existing trees and vegetation;

(C) ensure visual screening of unsightly areas;

(D) establish appropriate buffers and visual screening features to reduce the negative impacts of glare, noise, trash, odors, lack of privacy, and visual appearance that can occur when higher intensity land uses locate near lower intensity land uses;

(E) safeguard and enhance property values and protect public and private investment;

(F) protect and improve environmental functions and conditions by providing ecosystem services such as shade, air purification, oxygen regeneration, filtering of stormwater runoff, and abatement of noise, glare and heat;

(G) assure that the appearance of Greensboro positively contributes to the growth and economic prosperity of the city; and

(H) provide realistic and effective regulations that are viewed as an asset to the community.

30-10-1.2 Applicability

Except as otherwise expressly exempted pursuant to Sec. 30-10-1.3, all of the following are subject to the landscaping requirements of this article:

(A) New Buildings or Uses
Principal buildings or open uses of land constructed, reconstructed, or established after June 30, 1992.

(B) Changes in Use
Changes in use that result in an increase of 2 or more in the Land Use Classification number, in which case the landscaping requirements of this article apply to the entire zone lot.

(C) Expansions
The requirements of this article apply only to the expansion of buildings, parking areas, or open uses of land.

30-10-1.3 Exemptions
The following uses and activities are exempt from the requirements of this article. This exemption does not constitute an exemption from the Water Supply Watershed District requirements of Sec. 30-12-3, the Watershed Critical Area requirements of Sec. 30-12-4, the General Watershed Area requirements of Sec. 30-12-5 or the Soil Erosion and Sedimentation Control requirements of Sec. 30-12-6.

(A) lots occupied or to be occupied by single-family detached dwellings or two-family dwellings;

(B) property lines abutting utility easements in excess of 60 feet in width and all railroad rights-of-way; and

(C) property lines abutting dedicated street right-of-way that has remained unopened for a period of at least 15 years.

30-10-1.4 Other Landscaping Standards
More specific landscaping standards are established for some zoning districts, such as the CB, CN, TN, MU-M, MU-H and some overlay districts. See Sec. 30-10-3.

30-10-2 Multi-family and Nonresidential Landscaping Requirements

30-10-2.1 Applicability

(A) Multi-family, nonresidential and mixed-use development is subject to standards of this section, which generally requires street planting yards abutting public rights-of-way (See 30-10-2.2), buffer planting yards between different land use classifications (See 30-10-2.3) and parking lot landscaping (See 30-10-2.6).

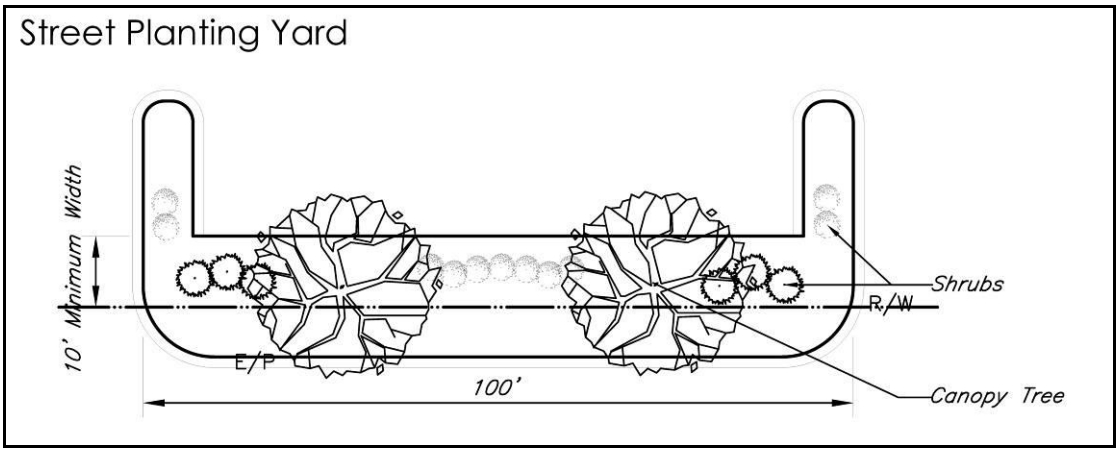
(B) The standards of this section do not apply to multi-family, nonresidential or mixed-use development in MU-M, MU-H, TN, CN or CB districts. Development in those districts is subject to the urban landscaping requirements of Sec. 30-10-3.

30-10-2.2 Street Planting Yards

(A) Street planting yards must be installed abutting public street rights-of-way.

(B) The required street planting yard must have a minimum width of 10 feet (measured from the outside edge of the right-of-way or the back of the sidewalk, whichever is further from the street centerline), and include at least 2

canopy trees and 17 shrubs per 100 linear feet of required street planting yard, not including allowed driveways.



30-10-2.3 Buffer Planting Yards

Buffer planting yards are required along the perimeter of a lot or development site (except portions parallel to a public street). They are intended to mitigate potential adverse impacts that may result when higher intensity land uses are located adjacent to lower intensity land uses.

(A) Type of Buffer Planting Yard Required

1) To determine the type of buffer planting yard required, first identify the class of the proposed (new, changed, or expanded) use then identify the class of each existing use on adjacent sites (See 30-10-2.3(A)4)). The intersection of the row associated with the proposed use and the column associated with the adjacent use shows the type of planting yard required. Staff will determine the location of planting to provide for the maximum visual buffer effect.

Table 10-1: Type of Planting Yards Required

	EXISTING ADJACENT USES						
PROPOSED USE	**Land Use Class**	1	2	3	4	5	Vacant
	1	–	–	–	–	–	–
	2	C	–	C	B	B	–
	3	B	B	–	C	B	–
	4	A	A	C	–	C	–
	5	A	A	B	C	–	–

2) A land use is considered to “exist” on an adjacent property when a building permit is issued.

3) If a zone lot contains uses with different land use classifications, the higher numbered land use classification applies unless the TRC grants a Type 2 Modification in accordance with Sec. 30-4-11.

4) Land uses are assigned to classes in accordance with the following table (Table 10-2).

Table 10-2 Land Use Classes

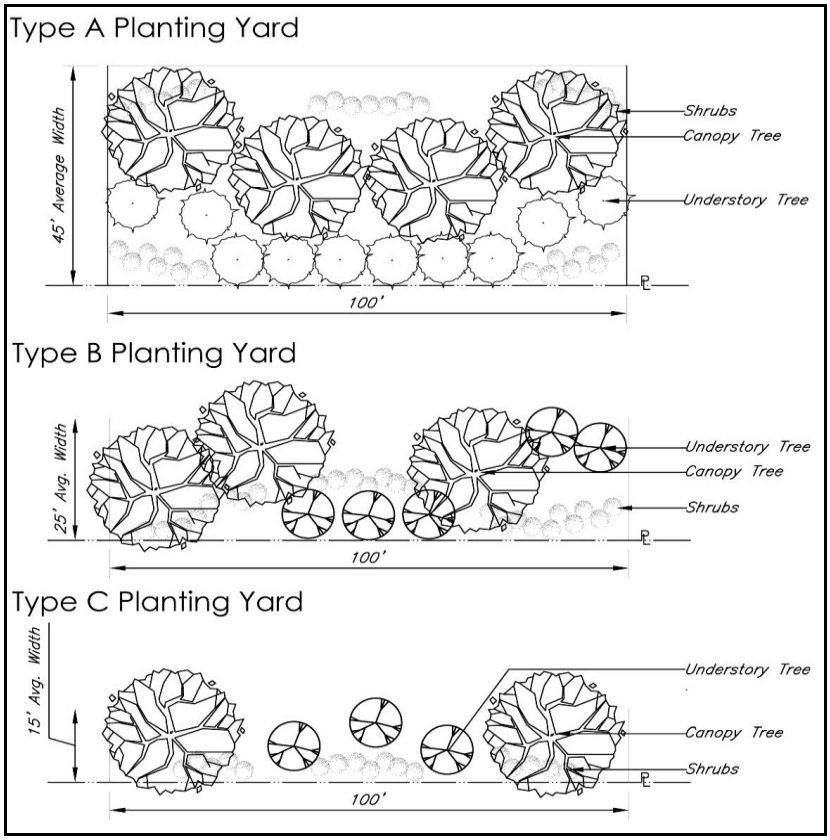
Use Category	Land Use Class (LUC)
AGRICULTURAL USES	
Forestry and Crops	**3**
RESIDENTIAL USES	
Household Living (except as noted below)	**1**
–Duplexes and Twin Homes	**2**
–Townhouses, Multi-family Dwellings, and Multi-family (Elderly)	**2**
–Manufactured Home Parks	**2**
Group Living (all)	**2**
PUBLIC AND CIVIC USES	
Animal Shelters (all)	**3**
Cemeteries (all)	**3**
Cultural and Community (all)	**3**
Day Care (except as noted below)	**3**
–Day Care Home	**2**
Educational Facilities (all)	**3**
Government Facilities (except as noted below)	**3**
–Correctional Institutions	**4**
Medical Facilities (all)	**3**
Passenger Terminals (all)	**4**
Religious Assembly (all)	**3**
Social Service Facilities (all)	**3**
Utilities (except as noted below)	**4**
–Wireless Telecommunication Facility	**3**
RECREATION USES	
Common Elements Recreation and Service Facilities (all)	**3**
Indoor Recreation (all)	**3**
Outdoor Recreation (all)	**4**
Parks and Open Areas (all)	**3**
OFFICE, RETAIL, AND COMMERCIAL USES	
Office (all)	**3**
Overnight Accommodations (except as noted below)	**1**
–Hotels, Motels, Extended Stay Lodging	**3**
Parking, commercial (all)	**3**
Eating and Drinking Establishments (all)	**3**
Personal and Professional Services (all)	**3**
Retail sales and service (except as noted below)	**3**
–Truck Stop	**4**
Self Storage Facilities (all)	**3**
Vehicle Sales and Service (all)	**3**
INDUSTRIAL AND MANUFACTURING USES	
Light Industrial (all)	**4**
Heavy Industrial (all)	**5**
Research and Development (all)	**3**
Resource Extraction (as a Principal Use) (all)	**4**
Wholesale Trade (all)	**4**
Warehousing, Storage, and Freight Handling (all)	**4**
Waste Related Services (all)	**4**

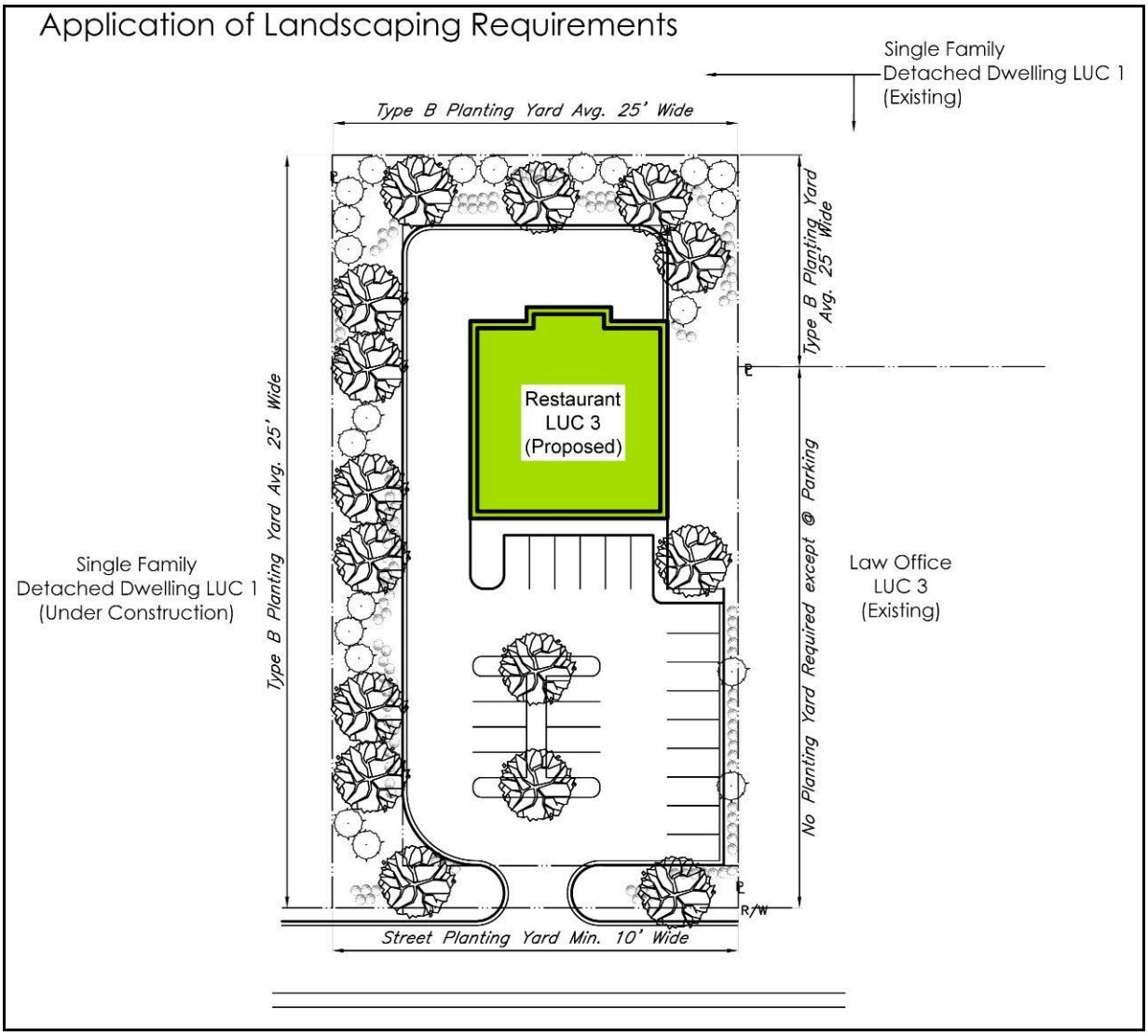
(B) Buffer Planting, Yard Landscaping and Design
Required buffer planting yards must be landscaped and designed in accordance with the following requirements:

Table 10-3: Planting Yard Dimensions and Landscaping

Planting Yard Type	**Average Width** (feet)	**Minimum Width** (feet)	**Maximum Width** (feet)	**Canopy Trees** (per 100 linear feet)	**Understory Trees** (per 100 linear feet)	**Shrubs** (per 100 linear feet)
A [1]	45	35	70	4[2]	10[3]	33[4]
B	25	20	45	3	5	25
C	15	10	35	2	3	17

[1] Type A planting yards require at least one row of evergreen shrubs or understory trees.
[2] 25 feet on center
[3] 10 feet on center
[4] 3 feet on center





30-10-2.4 Planting Yards on Slopes

(A) Slopes of 17% to 33%
For slopes between 17% and 33%, the Planning Director is authorized to determine the location of planting to provide the maximum visual buffer effect.

(B) Steep Slope Planting Yards (Slopes of More than 33%)

1) Tree-Covered Slopes
If a planting yard has a slope of more than 33% but less than 50% and the required tree coverage for a planting yard exists on the slope, then the slope area will be deemed to satisfy planting yard requirements if no healthy trees or vegetation are removed and no grading or other clearing occurs.

2) Slopes with Minimum or No Tree Cover
If a planting yard has a slope of more than 33% but less than 50% but lacks the required tree coverage for a planting yard, then additional trees and vegetation must be provided to satisfy minimum planting yard requirements. No healthy trees or vegetation may be removed and no grading or other clearing may occur.

(C) Reforestation of Slopes of Greater than 33%
Areas having slopes of more than 33% must be reforested to provide tree cover over the entire area. All plans for reforestation must include a minimum of one tree per 400 square feet of surface area and may be made up of a mixture of deciduous hardwood and evergreen trees. The trees must be a minimum 2-inch caliper (water-wise species) or 3-inch caliper (non-water-wise species) at the time of planting. All plans for reforestation are subject to approval by the Planning Director.

30-10-2.5 Street Planting Yard and Buffer Planting Yard Flexibility
The following standards apply to street planting yards and buffer planting yards.

(A) Canopy trees may be substituted for shrubs at the rate of one canopy tree for 8 shrubs and understory trees may be substituted for shrubs at the rate of one understory tree for 5 shrubs if approved by the Planning Director.

(B) Understory trees shall be substituted for canopy trees at the rate of 2 understory trees for every canopy tree when planted within 20 feet of an overhead utility line as measured from the utility pole. (See Landscaping and Tree Conservation Manual)

(C) On lots of record that existed prior to July 1, 1992 that are less than 55,000 square feet in area, no development is required to landscape more than 15% of the site.

(D) Canopy trees from required planting yards may be relocated to the street right-of-way if all of the following conditions are met and if approved by the Planning Director:

1) The proposed landscape plan complies with all provisions of Sec. 30-10-2;

2) The entire street cross-section is being constructed as part of the development or the street is existing with the abutting lots devoid of street trees;

3) Sidewalks are existing or are being installed as part of the development;

4) There are no overhead utilities parallel to the right-of-way line;

5) The right-of-way width and street width complies with applicable city standards; and

6) GDOT or NCDOT has determined that there is no proposed street widening or turn-lane construction along the lot frontage, or other transportation infrastructure or operations issues, that would conflict with the plantings.

30-10-2.6 Parking Lot Landscaping

Requiring landscaping within parking areas is intended to shade and improve the attractiveness of large areas of pavement.

(A) Required Landscaping

1) Parking lot planting yards must include at least one canopy tree for every 12 parking spaces.

2) Required canopy tree areas must be located within the parking lot. They may be located in landscape islands, landscape divider medians between rows of parking, or in driveway medians.

3) Islands or other planting areas for canopy trees must have a minimum area of 200 square feet with a minimum dimension of 7 feet, measured in any direction. Islands or planting areas of less than 200 square feet may not be counted toward satisfying parking lot landscaping requirements.

4) The landowner may provide required landscape islands or planting areas using one or more of the planting area sizes below. Each parking space must be entirely within the designated distance of a parking lot planting area as specified below:

Table 10-4: Location of Parking Lot Planting Areas

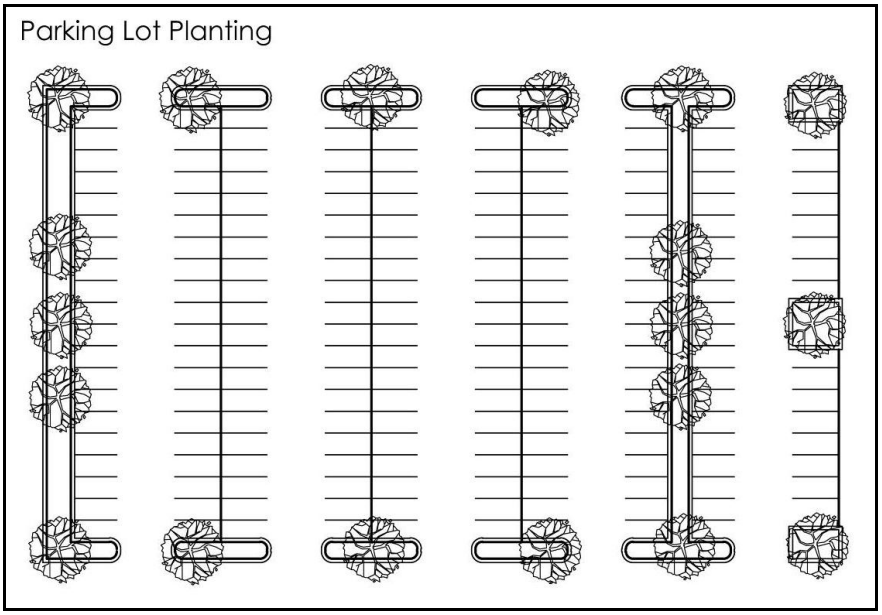
Size of Parking Lot Planting Area (sq. ft.)	**Number of Trees In Planting Area**	**Max. Distance from Parking Space** (feet)
200-499	1	100[1]
500-899	3	130

1] Canopy trees installed as part of a required planting yard that abuts the parking lot may be used for up to 50% of the required distance.

5) Grouping canopy trees within the same landscape island or planting area is strongly encouraged, even if this would decrease the number of islands within the parking lot.

(B) When a parking lot or other vehicular use area abuts a vacant site or a site with the same land use classification as the subject site, a planting yard with a minimum width of 5 feet must be provided between the parking lot/vehicular use area and the abutting (interior) property line. This required planting area must be landscaped with at least 2 understory trees and 18 evergreen shrubs per 100 linear feet.

(C) Trees used to satisfy the planting requirements for parking lot areas may not be counted toward the planting requirements for other required plantings on the site.



30-10-2.7 Tree Conservation and Parking Lot Plantings

For new, expanded, or rebuilt parking lots where trees are being preserved adjacent to the parking lot in order to meet the parking lot planting requirements, trees preserved in a TCA and within 8 feet of the parking lot may be used to satisfy up to 50% of the required number of parking lot trees. Tree conservation areas that are “notched into” corners or edges of a parking lot are deemed to be within the parking lot, not adjacent to it. Trees in the TCA counted toward planting yard requirements may not count for required parking lot trees. Extra trees in such locations do count. It is the landowner’s option to save trees within the parking lot. In order to do so, the critical root zone must be preserved. Credits for preserving parking lot trees are determined by the critical root zone preserved for the tree being saved (See Article 12). One tree for every 400 square feet of critical root zone preserved may be used to satisfy up to 50% of the required number of parking lot trees.

30-10-3 Urban Landscaping Requirements

30-10-3.1 Applicability

Multi-family, nonresidential and mixed-use development in RM-40, MU-M, MU-H, CN and CB districts are subject to the urban landscaping requirements of this section. The landscaping requirements of the -DDO, Downtown Design Overlay, apply within the Downtown Design Overlay district.

30-10-3.2 Pedestrian Landscaping

Pedestrian landscaping is required along all street frontages. Pedestrian landscaping requirements can be met by one or a combination of the following 4 options:

(A) providing a street planting yard measured from the edge of the right-of-way or back of sidewalk (whichever is farther from the centerline) that includes 2 canopy trees per 100 linear feet or 6 understory trees per 100 linear feet when located within 15 feet of overhead utilities;

(B) providing a minimum 10-foot wide sidewalk with canopy trees planted in tree wells (with grates) at 30-foot intervals;

(C) providing a minimum 10-foot wide sidewalk that is at least 50% covered with weather-protection materials (such as canopies and awnings); or

(D) providing a plaza between the building and the right-of-way a minimum of 10 feet in width along 50% of the building wall that consists of pavers or hardscape material different from the sidewalk and permanently fixed planters with vegetation.

30-10-3.3 Vehicular Use Area Screening

(A) The perimeter of all vehicular use areas must be screened from any abutting residentially zoned property. Such screening must consist of one or a combination of the following 2 options:

1) A 4-foot-high masonry wall; or

2) A planting yard with a minimum width of 5 feet, a 100% sight-obscuring fence with a height of at least 6 feet and at least one evergreen understory tree per 30 linear feet of planting yard (planted on the outside of the fence).

(B) The perimeter of all vehicular use areas containing 10 or more parking spaces, or 400 square feet or more paved area, must be screened from all abutting rights-of-way. Such screening must consist of one or a combination of the following 2 options:

1) A minimum 5-foot wide planting yard and enough evergreen shrubs to form a continuous visual screen at least 2.5 feet in height and a maximum of 3.5 feet in height; or

2) A minimum 5-foot wide planting yard with a combination of vegetation and open decorative fencing at least 2.5 feet in height and a maximum of 3.5 feet in height.

30-10-3.4 Surface Parking Lot Landscaping

Requiring landscaping within parking areas is intended to shade and improve the attractiveness of large areas of pavement.

(A) Required Landscaping

Parking lot planting yards are required in parking lots containing 10 or more spaces. Parking lot planting yards must include at least one canopy tree for every 10 parking spaces.

1) Required canopy tree areas must be located within the parking lot. They may be located in landscape islands, landscape divider medians between rows of parking, in driveway medians, or at the end of parking bays.

2) The landowner may provide required landscape islands or planting areas using one or more of the planter sizes below. Each parking space must be entirely within the designated distance of parking lot planting areas, as specified below:

Table 10-5: Location of Parking Lot Planting Areas

Size of Parking Lot Planting Area (sq. ft.)	**Number of Trees In Planting Area**	**Max. Distance from Parking Space** (feet)
200-499	1	100
500-899	3	130
Over 899	5	150

3) Grouping canopy trees within the same landscape island or planting area is strongly encouraged, even if this would decrease the number of islands within the parking lot. The Planning Director is authorized to grant a Type 1 Modification to the standards of Table 10-5 in accordance with Sec. 30-4-11.

4) Trees used to satisfy the planting requirements for parking lot areas may not be counted toward the planting requirements for other required plantings on the site.

30-10-4 Material, Design, Installation and Maintenance

30-10-4.1 Plant Materials

(A) General

1) Plant species used in required planting yards must be native species or species of a locally adapted nature. Other species may be approved by the Planning Director. Refer to the Tree Preservation and Landscaping Manual, which includes drought-tolerant species and species to be planted within 20 feet of overhead utilities.

2) The size of the required plant species is dependent on whether it is drought-tolerant. Incentives are provided to encourage the use of drought-tolerant plants in required landscape areas.

(B) Canopy Tree Size

1) Canopy trees must have a minimum height at maturity of 40 feet and a minimum crown width of 30 feet.

2) Drought-tolerant canopy trees must have a minimum caliper size of 2 inches.

3) Other canopy trees must have a minimum caliper size of 3 inches.

(C) Understory Tree Size

1) Understory trees must have a minimum height at maturity of 25 to 40 feet except that trees to be placed below overhead utility lines may not exceed a mature height of 20 feet.

2) Drought-tolerant understory trees must have a minimum caliper size of 1 inch.

3) Other understory trees must have a minimum caliper size of 2 inches.

(D) Shrub Size and Type

1) Shrubs located parallel to the edge of parking lots, access drives, loading and unloading areas and outside storage must be evergreen with a minimum height or spread of 18 inches at the time of planting and reach a minimum height of 36 inches and a minimum spread of 30 inches upon maturity.

2) All other required shrubs may be evergreen or deciduous and must be at least 3 gallon in size (per ANSI standards) at the time of planting.

30-10-4.2 Drought-Tolerant Planting Techniques
The following standards must be met for all required planting yards.

(A) Soil preparation for the entire planting yard must include the addition of organic amendments tilled to a depth of 8 to 12 inches.

(B) All plantings must be mulched (including interior parking lot islands less than 500 square feet) to a depth of 3 to 4 inches. The mulch must be permanently maintained free of trash and weeds.

(C) Earthen basins must be constructed around the installed plants.

30-10-4.3 Grouping
Shrubs may be grouped or clustered in the required planting yards, except for perimeter landscaping adjacent to parking lots, outside storage, access drives and loading and unloading areas. The remainder of the materials must be distributed throughout the planting yard.

30-10-4.4 Berm Size
Any berm must be at least 3 feet in height and have a minimum crown width of 3 feet. Side slopes may not have a slope greater than 33%.

30-10-4.5 Wall Planters
Wall planters must be constructed of masonry, stone, or pressure-treated lumber stamped for ground contact. Wall planters must be at least 30 inches in height and have an effective planting width of 7 feet (measured in any direction) if trees are to be planted. Otherwise, the planter must have an effective planting width of 4 feet (measured in any direction). Shrubs planted in wall planters must be at least 6 inches in height when planted.

30-10-4.6 Tree Wells
Tree wells in sidewalks must provide a continuous trench with a depth of at least 3 feet to allow for better root growth and healthier trees. The trench (outside of the tree well) may be filled with structural soil mix and covered with concrete pavers. The underground portion of the tree well must be at least 8 feet in length and width. ADA approved grates must be used on all tree wells.

30-10-4.7 Encroachments in Required Planting Yards
Parking, merchandise display, and vehicle loading areas are prohibited in street planting yards. The following are permitted in required street planting yards and buffer planting yards, provided the landscaping requirements are met and there is no interference with any sight area.

(A) Landscaping features, including but not limited to, ornamental pools, planting boxes, sculpture, arbors, trellises, and birdbaths.

(B) Pet shelters, at-grade patios, play equipment, outdoor furniture, ornamental entry columns and gates, flagpoles, lampposts, address posts, HVAC equipment, mailboxes, outdoor fireplaces, public utility wires and poles, pumps, wells, fences, retaining walls that can accommodate required landscaping, or similar structures.

(C) Cornices, steps, canopies, overhanging eaves and gutters, window sills, bay windows or similar architectural features, chimneys and fireplaces, fire escapes, fire balconies, and fire towers may project not more than 2.5 feet into any required planting yard, but in no case closer than 3 feet to any property line.

(D) Handicap ramps except for porches and landings.

(E) Up to 15% of the required landscape area may be occupied by walkways and steps that are not connected to any above-grade structure.

(F) Stormwater facility with an approved alternative compliance plan.

(G) Freestanding signs that comply with Sec. 30-14-7.3(B)4)

30-10-4.8 Setback Less than Planting Yard Width
If the required building setback is less than the required planting yard width, the minimum required building setback governs, reducing the required planting yard width only alongside the building. The planting rate of the required planting yard still applies.

30-10-4.9 Planting in Shaded Areas
Where a building is located less than 10 feet from a property line, and the planting yard would be heavily shaded by buildings on both sides of the property line, the required trees and shrubs may be planted outside the shaded area to improve survivability.

30-10-4.10 Obstructions
Landscaping may not obstruct the view of motorists using any street, driveway, or parking aisle, subject to the standards of Chapter 16, Obstructions to Cross-Visibility.

30-10-4.11 Planting in Easements

(A) A minimum width of 5 feet, or at least half the minimum required planting yard width whichever is greater, must be provided outside of any required easements. The majority of plantings and all structures must be located outside of utility easements.

(B) When trees and shrubs are planted in a utility easement, the property owner is responsible for replacement of any required vegetation if maintenance or other utility requirements require their temporary removal.

(C) Required trees and shrubs may be placed in water-quality conservation easements.

(D) Required trees and shrubs may be planted in electric utility easements below overhead lines and in drainage maintenance and utility easements by approval of the Technical Review Committee. Trees to be placed below overhead utility lines may not exceed a mature height of 20 feet. (See Landscaping and Tree Conservation Manual).

(E) Trees and shrubs may be planted in underground utility easements provided the root structure of the proposed tree is not anticipated to extend more than 3 feet below the ground. Shrubs may be planted, provided they are only within the outer 3 feet of the easement.

30-10-4.12 Maintenance of Planting Yards

(A) Plant Protection
Whenever planting yards are adjacent to parking lots or drives, they must be protected from damage by vehicles, lubricants, or fuels.

(B) Responsibility
The landowner is responsible for maintaining all required plant materials and planting areas in good health and appearance. Any dead, unhealthy, or missing plants (whether preserved or installed) must be replaced with new plant material equal in quantity and quality to the plant material required to be preserved or installed. Replacement plant material must be replanted within 180 days. The obligation for continuous maintenance is binding on any subsequent owners of the property or any other parties having a controlling interest in the property.

(C) Irrigation
Drip irrigation including drip misters are recommended for use in required planting yards during the establishment period. After establishment, supplemental watering can be reduced and used on an as-needed basis. Traditional spray irrigation is prohibited except in turf areas.

(D) Pruning
All required trees must be allowed to reach their mature size and must be maintained at their mature size. Trimming and pruning must be conducted in strict compliance with the American National Standards Institute. Topping is not an acceptable pruning practice. Topping is the reduction of a tree's size using heading cuts that shorten limbs or branches back to a predetermined crown limit. The Planning Director may require the removal and replacement of any trees that have been topped or excessively trimmed.

30-10-4.13 Credit for Preservation of Existing Trees

Any existing tree or group of trees that stands within or near a required planting area and meets or exceeds the standards of this section (Sec. 30-10-4) may be used to satisfy applicable tree planting requirements, subject to the requirements of this subsection.

(A) To receive credit, trees being preserved must have a minimum DBH of 4 inches and be protected from direct and indirect root damage and trunk and crown disturbance.

(B) Any trees (for which credit has been received) that die, must be replaced in accordance with minimum tree planting requirements.

(C) Trees located in a designated TCA will be credited towards the planting area requirements at the rate shown in the following table:

Table 10-6: Credit for Preservation of Existing Trees

DBH of Existing Tree (inches)	Number of Trees Credited
Under 4	0
4–7.9	1
8–22.9	2
23–29.9	3
30+	4

(D) Regardless of the number or size of preserved trees in required street planting yards, there must be at least one canopy tree for every 50 linear feet of street planting yard.

(E) The area of TCA located within a required planting area (except street planting yards) will be credited on a one-to-one basis.

30-10-5 Alternate Methods of Compliance

Alternate methods of compliance with the landscaping regulations of this chapter may be approved in accordance with the Type 1 Modification procedures of Sec. 30-4-11 (below).

Review and Approval Procedures for Landscaping

Modifications

Recognizing that it is sometimes possible to provide equal or better performance in furtherance of the purposes of this ordinance through use of means other than those specified in this ordinance, the City Council finds it to be reasonably necessary and expedient that provisions be made for limited flexibility in administration of certain standards in this ordinance.

Description

There are 5 classes of Modifications: Type 1, Type 2, Type 3, Type 4 and Type 5. These modifications are specified technical exceptions that may be approved without going through the Variance process. Approval is limited to the specified exceptions and adjustments expressly authorized by this ordinance only when the general criteria of Sec. 30-4-11.3 have been met. The different types of modifications correspond to the increasing sensitivity or impact differential of the proposed change, or the authority responsible for approving the modification. The level of review—ranging from Type 1 to Type 5—is generally intended to be commensurate with the degree of deviation and/or the anticipated impacts of the requested modification. Only Type 1 and Type 2 modifications apply to Landscaping.

Type 1 Modifications

Final decision-making authority on a Type 1 Modification rests with the department director with general responsibility for administering and interpreting the subject regulation or standard. Type 1 Modifications involve modifications to regulations and standards that are very minor (de minimis) in nature. Regulations and standards are eligible for modification through the Type 1 procedure only when expressly authorized by this ordinance.

Type 2 Modifications

The Technical Review Committee is authorized to approve most Type 2 Modifications, which involve modifications to regulations and standards that are similar to Type 1 Modifications but which benefit from inter-agency review. Regulations and standards are eligible for modification through the Type 2 procedure only when expressly authorized by this ordinance.

Decision-making Criteria for Type 1 and Type 2 Modifications

The proposed modification must be made with regard to the purpose of the standard or regulation being modified, this ordinance, and the Comprehensive Plan. Type 1 and Type 2 Modifications may be approved if the authorized decision-making body determines that at least one of the following criteria is met:

1) that the proposed modification will result in equal or better performance than the standard being modified;

2) that the size, topography, or existing development of the property or of adjoining areas prevents compliance with a standard; or

3) that a federal, state, or local law or regulation prevents compliance with the standard.

Type 1 Modifications to Tree Conservation and Landscaping Requirements

Alternate tree conservation plans, plant materials, planting methods or reforestation may be authorized when unreasonable or impractical situations would result from application of landscaping or tree conservation requirements. Such situations may result from streams, natural rock formations, topography, or other physical conditions; or from lot configuration, utility easements, unified development design, or unusual site conditions.

The Planning Director may approve an alternate plan that proposes different plant materials or methods provided that quality, effectiveness, durability, and performance are equivalent to that required by this section. The performance of alternate landscaping plans or tree conservation plans must be reviewed by the Planning Director to determine if the alternate plan meets the intent and purpose of this section. This determination must take into account the use of adjacent property, number of plantings, species, arrangement and coverage, location of plantings on the lot, and the level of screening, height, spread, and canopy of the plantings at maturity.

Type 2 Modifications to Tree Conservation and Landscaping Requirements

Decisions of the Planning Director regarding alternate methods of compliance for landscaping may be appealed to the Technical Review Committee as requests for modifications. Decisions of the Planning Director regarding alternate methods of compliance for tree conservation and reforestation may be appealed to the Advisory Commission on Trees.

Appeals from decisions of the Advisory Commission on Trees may be taken to the Board of Adjustment in accordance with Sec. 30-4-1.7

Commentary: Appeals to the Board of Adjustment are heard "on the record," meaning that any and all information necessary to reverse or affirm a decision of the Advisory Commission on Trees must be contained in the written record.

Submittal Requirements for Modifications

Modification requests must be submitted to the Planning Department. Requests must be submitted at the appropriate time, and the burden is on the applicant to demonstrate that the criteria in Sec. 30-4-11.3.

Review and Decision Making Bodies

Department Directors

Final decision-making authority on Type 1 Modifications rests with the department director with general responsibility for administering and interpreting the subject regulation or standard. Standards and regulations eligible for modification through the Type 1 Modification procedure are expressly identified in the text of this ordinance. In addition, the Planning Director is authorized to approve, as a Type 1 Modification, an adjustment to zoning district setback requirements by up to one foot, when a building permit has been issued and there was an unintentional error of the Engineering and Inspections Director in verifying the location of a structure on the property, provided the purpose and intent of the ordinance is not impaired.

Technical Review Committee

The Technical Review Committee has final decision-making authority on all Type 2 Modifications, except that the Advisory Commission on Trees has final decision-making authority for Type 2 Modifications of the tree conservation requirements of . Article 12. Standards and regulations eligible for modification through the Type 2 Modification procedure are expressly identified in the text of this ordinance.

Appeals of Modification Final Action

Appeals of Type 1 Modification final actions by the Planning Director may be made to the Technical Review Committee and subsequently to the Planning Board and the City Council.

Appeals of Type 2 Modification final actions by the Technical Review Committee (or the Advisory Commission on Trees) may be made to the Planning Board and City Council.

Duration of Approval

An approved modification is part of an approved plan and has the same duration as the plan approval.

Landscape Plan

A landscape plan must be prepared in accordance with the design review application (published by the Planning Department) and approved before installation of plant material.

Certification of Plant Material Installation

Certificate of Occupancy

All required plant material must be installed and approved prior to the issuance of a Certificate of Occupancy by the Engineering and Inspections Director.

Temporary Certificate of Occupancy

The Engineering and Inspections Director may issue a Temporary Certificate of Occupancy for a period of up to 90 days if, at the time of a request for a Certificate of Occupancy, the required planting areas are not complete and it can be determined that: plant materials are temporarily unavailable but will be available within 90 days, completion of the planting areas would jeopardize the health of the plant materials, or weather conditions are not conducive to planting.

In order to receive a Temporary Certificate of Occupancy, the landowner must submit a copy of a signed contract for installation of the required planting areas and must post a surety equal to the amount of the contract.

The Engineering and Inspections Director may not issue a final Certificate of Occupancy until the planting areas have been completed and approved.

Enforcement (Landscaping)

Enforcement Procedure

When any city employee charged with enforcement of the provisions of this ordinance finds a violation of this ordinance, he must notify the owner or occupant of the land, building, structure, sign, or use of the violation. The owner and occupant must remedy the violation immediately.

Notice of Violation

If the owner or occupant of the land, building, structure, sign, or use in violation fails to take prompt corrective action, any city employee charged with enforcement of the provisions of this ordinance must give the owner or occupant written notice (by certified or registered mail to the violator’s last known address, by personal service, or by posting notice conspicuously on the property) of the following:

1) that the land, building, structure, sign, or use is in violation of this ordinance;

2) the nature of the violation, and citation of the section of this ordinance violated;

3) the measures necessary to remedy the violation and the time period in which the violation must be corrected, if applicable; and

4) that penalties or remedies may be assessed.

Appeal

Any owner or occupant who has received a Notice of Violation may appeal in writing the decision of any city employee charged with enforcement of the provisions of this ordinance to the Board of Adjustment (unless this ordinance expressly states that another board is responsible for hearing the appeal) within 15 days following the date of the Notice of Violation. The Board of Adjustment, or other designated board, must hear an appeal within a reasonable time, and it may affirm, modify, or revoke the Notice of Violation. In the absence of an appeal, the decision of any city employee charged with enforcement of the provisions of this ordinance shall be final.

Notice of Decision

The decision of the Board of Adjustment may be delivered to the aggrieved party either by personal service, registered mail or certified mail return receipt requested. Otherwise, notice is presumed to be given at the day and time of the hearing.

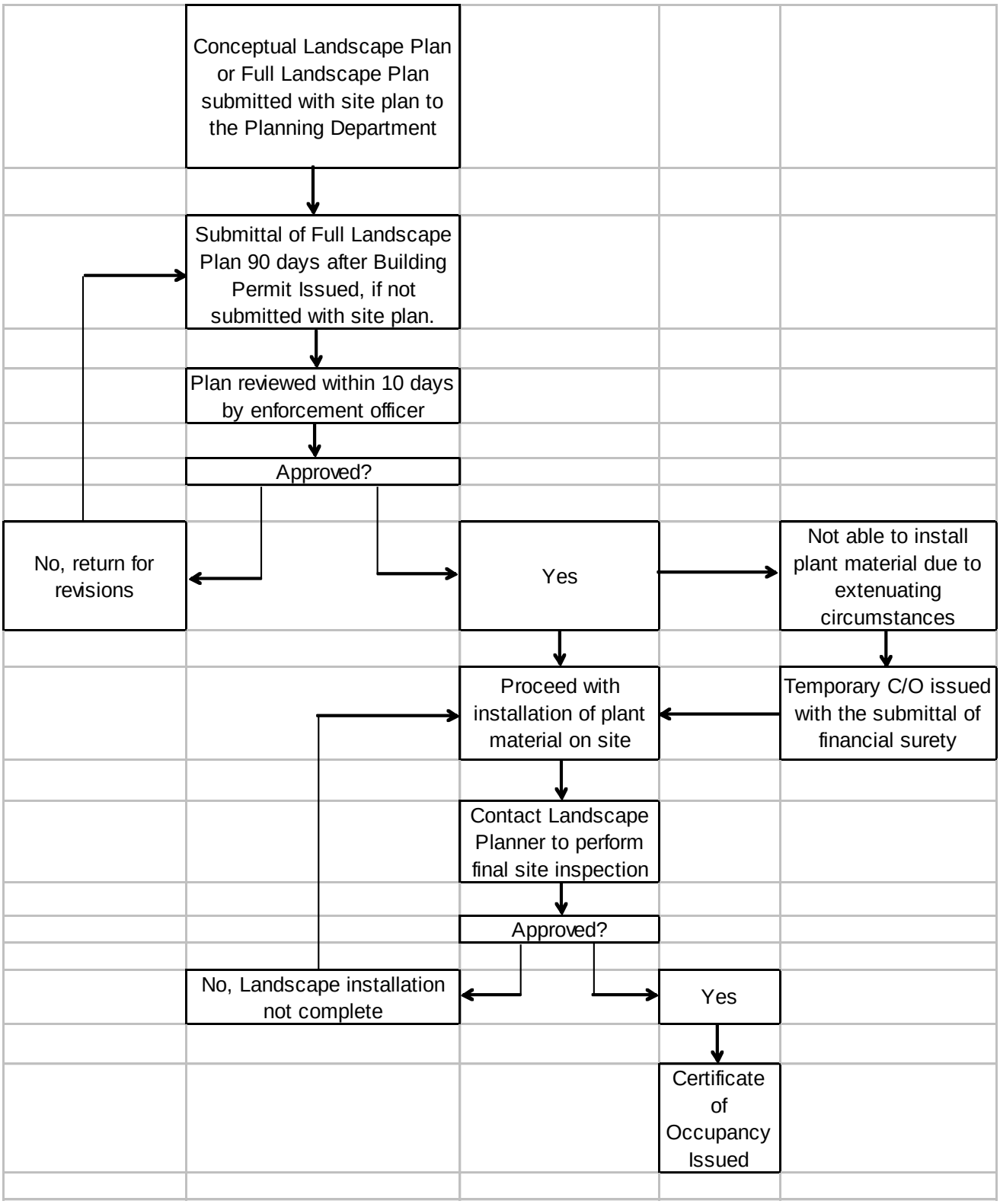
Failure to Comply with Notice

If the owner or occupant of a property fails to comply with a Notice of Violation from which no appeal has been taken, or a final decision by the Board of Adjustment following an upheld appeal, the owner or occupant is subject to such remedies and penalties as may be provided for by State law or by Sec.30-5-4.3.

Additional Enforcement Procedures

Departments may publish and amend from time to time enforcement procedure manuals that provide more detailed guidance on enforcement matters.

LANDSCAPE PLAN REVIEW PROCESS



CONCEPTUAL LANDSCAPE PLAN CHECKLIST

- ☐ Depict the boundary and width dimensions of all required planting yards.
- ☐ Indicate the minimum planting rate for all required planting yards.
- ☐ Indicate the minimum required size for canopy trees, understory trees and shrubs at the time of installation.
- ☐ Depict the required sight distance triangles on both sides of the driveway and the sight distance triangles on both directions at the public street intersection.
- ☐ Provide landscape islands in the parking area for the installation of canopy trees.
- ☐ Indicate the number of parking spaces in each run.
- ☐ Indicate the type of material to be used to pave the required parking spaces and drive isles.
- ☐ Locate and describe barriers to protect any vegetation from damage both during and after construction, if any.
- ☐ Identify tree conservation areas, if any.
- ☐ Provide the following notes on the plan;

WATER WISE PLANTING TECHNIQUES

1) **Soil preparation for the entire landscape yard includes the addition of organic amendments tilled to a depth of eight (8) to twelve (12) inches.**
2) **All Plantings in the landscape yards shall be mulched including interior parking lot islands under five hundred (500) square feet to a depth of three (3) to four (4) inches and maintained weed free thereafter.**
3) **Earthen basins are constructed around the installed plants.**
4) **Plants, as permitted by this Ordinance, are grouped together where possible.**
5) **For establishment and survival, plants shall be watered in the first year of planting.**
6) **Irrigation: It is suggested that drip irrigation, which includes drip masters, be used for required landscaping planting beds during the required establishment period. After establishment, supplemental watering can be reduced and used on an as needed basis. Traditional spray irrigation is prohibited except for turf areas.**

CONCEPTUAL PLAN

This is a conceptual landscape plan.

The applicant must submit a detailed landscape plan (which depicts the plant types and locations) within 90 days from the issuance of the building permit for review by the Planning Department. The landscape plan must be approved by the Planning Department prior to receiving an inspection for the Certificate of Occupancy.

CREDITS FOR SAVING EXISTING TREES

The applicant will contact the Urban Forester at 373-2150 after the completion of the site grading to arrange for an on-site meeting/inspection to determine the credit for the existing vegetation towards the number of plants in the perimeter buffer yards.

LANDSCAPE PLAN CHECKLIST

- ☐ Depict plant locations.
- ☐ Provide plant list.
- ☐ Depict the boundary and width dimensions of all required planting yards.
- ☐ Indicate the minimum planting rate for all required planting yards.
- ☐ Indicate the minimum required size for canopy trees, understory trees and shrubs at the time of installation.
- ☐ Depict the required sight distance triangles on both sides of the driveway and the sight distance triangles on both directions at the public street intersection.
- ☐ Provide landscape islands in the parking area for the installation of canopy trees.
- ☐ Indicate the number of parking spaces in each run.
- ☐ Indicate the type of material to be used to pave the required parking spaces and drive isles.
- ☐ Locate and describe barriers to protect any vegetation from damage both during and after construction, if any.
- ☐ Identify tree conservation areas, if any.
- ☐ Provide the following notes on the plan;

WATER WISE PLANTING TECHNIQUES

1) **Soil preparation for the entire landscape yard includes the addition of organic amendments tilled to a depth of eight (8) to twelve (12) inches.**
2) **All Plantings in the landscape yards shall be mulched including interior parking lot islands under five hundred (500) square feet to a depth of three (3) to four (4) inches and maintained weed free thereafter.**
3) **Earthen basins are constructed around the installed plants.**
4) **Plants, as permitted by this Ordinance, are grouped together where possible.**
5) **For establishment and survival, plants shall be watered in the first year of planting.**
6) **Irrigation: It is suggested that drip irrigation, which includes drip masters, be used for required landscaping planting beds during the required establishment period. After establishment, supplemental watering can be reduced and used on an as needed basis. Traditional spray irrigation is prohibited except for turf areas.**

CREDITS FOR SAVING EXISTING TREES

The applicant will contact the Urban Forester at 373-2150 after the completion of the site grading to arrange for an on-site meeting/inspection to determine the credit for the existing vegetation towards the number of plants in the perimeter buffer yards.

Article 12. Natural Resources

30-12-1 Tree Conservation

30-12-1.1 Purpose

The tree conservation regulations of this section are intended to help preserve the city's remaining tree canopy. By doing so, the regulations help:

(A) maintain and enhance the visual character of the city and contribute to economic growth and prosperity;

(B) control surface water runoff;

(C) improve air quality;

(D) moderate temperatures;

(E) provide wildlife habitat; and

(F) conserve water.

30-12-1.2 Applicability

The tree conservation requirements of this section apply to all of the following unless expressly exempted pursuant to Sec. 30-12-1.3. In addition, a tree disturbance permit or an approved plan, per Sec. 30-4-26.3, is required in association with all of the following:

(A) principal buildings or open uses of land developed, constructed, reconstructed, or established after October 17, 2000;

(B) changes in use that result in an increase of 2 or more in the Land Use Classification number, in which case the tree conservation requirements of this section apply to the entire zone lot;

(C) All expansions of buildings, parking areas, or open uses of land, except the first 3,000 square feet of expansion to buildings, parking areas, or open uses of land existing on October 17, 2000 (Note: the tree conservation requirements of this section are applicable only to the expansion).

30-12-1.3 Exemptions

All of the following land disturbing activities are exempt from the tree conservation requirements of this section and the tree disturbance permit requirements of Sec. 30-4-26.3:

(A) Single-family detached, two-family attached or duplex dwellings on their own lots.

(B) Multi-family developments containing 8 or fewer dwelling units on a single zone lot.

(C) Properties within or surrounded by the CBD, Central Business District.

(D) Tree removal involving the disturbance of 3,000 square feet or less of critical root zone that is not inconsistent with any plan previously approved by the city or county. The Planning Director is authorized to require reasonable documentation that such removal is not associated with a forthcoming development proposal and will not be inconsistent with any plan previously approved by the city or county. Willful violations of the requirement to provide such documentation may result in the assessment of tree disturbance penalties in accordance with Sec. 30-5-5.5.

(E) Property covered by an active forestry management plan written by a North Carolina Registered Forester, provided documentation has been furnished to the Planning Director.

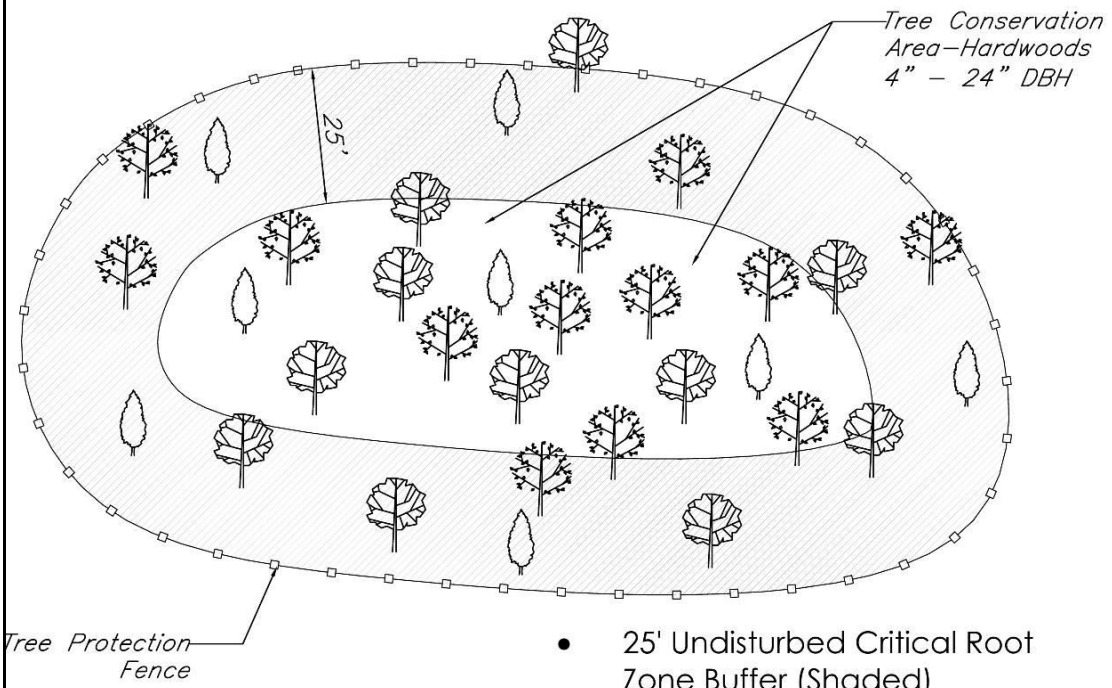
30-12-1.4 Conservation of Existing Trees

(A) General
Any existing tree or group of trees that meet or exceed the standards of this subsection may be used to satisfy the tree conservation requirements of this section. The conservation of stands of trees is strongly encouraged. The conservation of individual trees is only recommended when saving a specimen tree.

(B) Standards
To receive tree conservation credit, trees must be protected from direct and indirect root, trunk and crown damage or disturbance. The following standards apply:

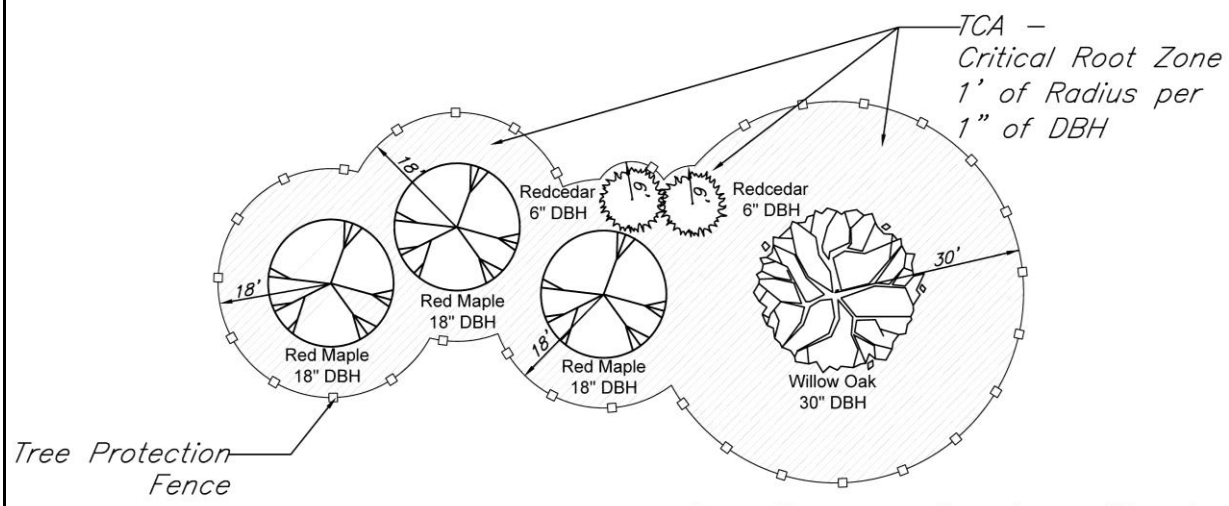
1) The tree conservation area includes land within the critical root zone. In cases where a tree inventory has not been submitted, the critical root zone area of the tree conservation area is unknown. In this case, the critical root zone area of the tree conservation area may be protected by an undisturbed buffer at least 25 feet in width or as otherwise approved by the Planning Director. The 25-foot undisturbed buffer shall be measured from the trunk of the outermost trees.

Tree Conservation Area (25' Buffer)



- 25' Undisturbed Critical Root Zone Buffer (Shaded)

Tree Conservation (Area by Survey)



- Tree Conservation Area (Shaded) Includes the Trees and the Critical Root Zone.

(B) Standards (cont.)

2) Construction site activities such as parking, material storage, dirt stockpiling, concrete washout and other similar activities are prohibited within the tree conservation area.

3) Changes to the grade of soil that compromise the tree conservation area by increasing or decreasing soil moisture content must be avoided.

4) A reasonable effort must be made to have utility line trenches and similar uses avoid the tree conservation area. Due to certain site conditions, where disturbance within the tree conservation area is unavoidable, underground tunneling or directional boring of utilities is preferred. Trenching, with the approval of the Planning Director, may be used only as the last alternative and root pruning equipment specifically designed for that purpose must be used.

5) Protective fencing must be installed around the tree conservation area before any tree disturbing activities. Such fences must be at least 4 feet in height and must consist of orange polyethylene safety fencing. Where the tree protection fence and the soil erosion control fence run congruent, the soil erosion control fence may be substituted for the tree protection fence. Fencing must remain in place until construction is complete, other landscaping has been installed, and the Planning Director has approved its removal.

6) The tree conservation area must be designated as such with “Tree Conservation Area” signs posted visibly on the outside of the fenced-in area. Signs may not be posted on trees.

(C) Evaluation of Specimen Trees and Stands of Trees
Existing specimen trees and stands of trees must meet all of the following conditions to be considered for the tree conservation area:

1) A life expectancy of greater than 10 years;

2) A relatively sound and solid trunk with no extensive decay; and

3) No major insect or pathological problems.

(D) Dead or Unhealthy Trees

1) No tree conservation credit will be allowed for any dead tree, any tree in poor health, or any tree subjected to grade alterations.

2) Maintenance of the tree conservation area is the responsibility of the property owner and/or the owners' association. All dead, dying, or substantially damaged trees shall be replaced at the rate specified in Sec. 30-5-5.5, Table 5-2.

3) The Planning Director may require trees left standing outside of the tree conservation area to be removed if improperly protected or determined to be hazardous.

30-12-1.5 Tree Conservation Area Determination

(A) Extent of TCA
Minimum tree conservation area requirements are determined according to parcel size, as set forth in the following table:

Table 12 1: Tree Conservation Area Requirements

Area of Parcel (acres)	**Required TCA for New Development**	**Required TCA for Expansions**
0 – 1.260	1% of lot size	1% of disturbed area
1.261 – 5	5% of lot size	5% of disturbed area
Greater than 5	10% of lot size	10% of disturbed area

Commentary: When development is proposed on a site that does not contain the minimum tree conservation area, the minimum requirement is to preserve all existing trees. The 50% reforestation option still applies. On a 10 acre site with only 0.50 acres of existing trees, for example, the owner is responsible only for preserving the half-acre of trees that do exist, not for planting another half-acre of trees. Furthermore, the owner could elect to preserve all of the trees or preserve half and reforest the other half.

(B) Trees to be Saved
If trees of 4 inches or greater DBH exist within or partially within tree conservation areas, such trees must be saved to the extent possible. The area will be designated TCA and may not be disturbed, except as expressly allowed under this section.

(C) Smaller Trees
Trees less than 4 inches DBH within the TCA may be preserved at the landowner's option.

(D) Other Provisions
The requirements of this section may be modified to permit the establishment of the TCA pursuant to Sec. 30-12-1.6.

(E) TCA Selection
In selecting which existing stands of trees are to be designated as TCA, the landowner must give due consideration to building, parking lot, driveway, street and utility locations as they relate to the practicality of tree conservation and must use the following tree conservation priority list:

1) First Priority for Conservation
Existing stands of hardwoods growing in or adjacent to stream protection buffers as highest priority

2) Second Priority for Conservation
Existing stands of hardwoods growing on upland sites

3) Third Priority for Conservation
Existing specimen trees (as determined by the Planning Director).

4) Fourth Priority for Conservation
Existing stands of hardwoods and pine mix.

5) Fifth Priority for Conservation
Existing stands of pine trees.

(F) Activities Allowed in TCA
The following are permitted in the required TCA with prior approval of the Planning Director, provided there is no disturbance to the critical root zone of the preserved trees.

1) Landscaping features including planting boxes, sculpture, arbors, trellises, birdbaths and wood fences, provided they are installed by hand (no motorized vehicles).

2) Outdoor furniture, ornamental entry columns and gates, flagpoles, lampposts, address posts, mailboxes, or similar structures.

3) Cornices, steps, canopies, overhanging eaves and gutters, window sills, bay windows or similar architectural features, fire escapes, fire balconies, and fire towers which project not more than 2.5 feet into any required TCA.

4) Wheelchair ramps except for porches, walkways, sidewalks, and landings.

5) Steps not connected to any above-grade structure.

6) Trails and greenways, provided they are constructed to minimize disturbance and impacts on the TCA critical root zone area.

7) Disturbance within the critical root zone will be allowed only on one side of the trees to be saved. Disturbance to the critical root zone may not exceed 25% of the tree's total critical root zone area.

(G) Tree Removal Inside the Critical Root Zone (TCA)
Trees less than 4 inches DBH not being preserved, undergrowth and plant material in poor condition may be removed from the TCA. No roots may be removed from the TCA. Stumps may be removed only by grinding. All requests for tree removal within the TCA must have prior approval by the Planning Director pursuant to the provisions of this section. However, in an emergency situation due to storm damage; to alleviate an imminent hazard to the health, safety and welfare of the citizens; or to repair property damage, prior approval for tree removal in previously approved designated areas is not required.

(H) Certification
All allowed vegetation removal must be done or supervised by an experienced urban forester, landscape architect or certified arborist, who will certify that the tree and root removal or pruning was done in accordance with standard arboricultural practices.

30-12-1.6 Tree Conservation Flexibility Standards

(A) Undisturbed Stream Buffers
Properties that are required to maintain an undisturbed stream buffer may use some or all the stream buffer area to satisfy the required TCA if that undisturbed stream buffer contains trees that are a minimum of 4 inches in diameter at breast height.

(B) Land Dedications
Land that is dedicated to the City as open space or drainage way that is contiguous to the property being developed may be credited towards meeting a site's tree conservation requirements if the dedicated land contains trees that are a minimum of 4 inches in diameter at breast height. Land contained within dedicated utility easements may not be credited toward TCA requirements.

(C) Reforestation Credits
In situations where TCA requirements cannot be met based on site conditions and when approved by the Planning Director, reforestation efforts on the property can be used to satisfy up to 50% of the required TCA. See Table 5-2.

(D) Alternate Methods of Compliance
See Sec. 30-4-11.3(C) and Sec. 30-4-11.5(B)1).

(E) Reduction of Required Parking
See. Sec. 30-11-13.7(F).

Review and Approval Procedures for Tree Conservation

Modifications

Recognizing that it is sometimes possible to provide equal or better performance in furtherance of the purposes of this ordinance through use of means other than those specified in this ordinance, the City Council finds it to be reasonably necessary and expedient that provisions be made for limited flexibility in administration of certain standards in this ordinance.

Description

There are 5 classes of Modifications: Type 1, Type 2, Type 3, Type 4 and Type 5. These modifications are specified technical exceptions that may be approved without going through the Variance process. Approval is limited to the specified exceptions and adjustments expressly authorized by this ordinance only when the general criteria of Sec. 30-4-11.3 have been met. The different types of modifications correspond to the increasing sensitivity or impact differential of the proposed change, or the authority responsible for approving the modification. The level of review—ranging from Type 1 to Type 5—is generally intended to be commensurate with the degree of deviation and/or the anticipated impacts of the requested modification. Only Type 1 and Type 2 modifications apply to Landscaping.

Type 1 Modifications

Final decision-making authority on Type 1 Modifications rests with the department director with general responsibility for administering and interpreting the subject regulation or standard. Type 1 Modifications involve modifications to regulations and standards that are very minor (de minimis) in nature. Regulations and standards are eligible for modification through the Type 1 procedure only when expressly authorized by this ordinance.

Type 2 Modifications

The Technical Review Committee is authorized to approve most Type 2 Modifications, which involve modifications to regulations and standards that are similar to Type 1 Modifications but which benefit from inter-agency review. Regulations and standards are eligible for modification through the Type 2 procedure only when expressly authorized by this ordinance.

Decision-making Criteria for Type 1 and Type 2 Modifications

The proposed modification must be made with regard to the purpose of the standard or regulation being modified, this ordinance, and the Comprehensive Plan. Type 1 and Type 2 Modifications may be approved if the authorized decision-making body determines that at least one of the following criteria are met:

1) that the proposed modification will result in equal or better performance than the standard being modified;

2) that the size, topography, or existing development of the property or of adjoining areas prevents compliance with a standard; or

3) that a federal, state, or local law or regulation prevents compliance with the standard.

Type 1 Modifications to Tree Conservation and Landscaping Requirements

Alternate tree conservation plans, plant materials, planting methods or reforestation may be authorized when unreasonable or impractical situations would result from application of landscaping or tree conservation requirements. Such situations may result from streams, natural rock formations, topography, or other physical conditions; or from lot configuration, utility easements, unified development design, or unusual site conditions.

The Planning Director may approve an alternate plan that proposes different plant materials or methods provided that quality, effectiveness, durability, and performance are equivalent to that required by this section. The performance of alternate landscaping plans or tree conservation plans must be reviewed by the Planning Director to determine if the alternate plan meets the intent and purpose of this section. This determination must take into account the use of adjacent property, number of plantings, species, arrangement and coverage, location of plantings on the lot, and the level of screening, height, spread, and canopy of the plantings at maturity.

Type 2 Modifications to Tree Conservation and Landscaping Requirements

Decisions of the Planning Director regarding alternate methods of compliance for landscaping may be appealed to the Technical Review Committee as requests for modifications. Decisions of the Planning Director regarding alternate methods of compliance for tree conservation and reforestation may be appealed to the Advisory Commission on Trees.

Appeals from decisions of the Advisory Commission on Trees may be taken to the Board of Adjustment in accordance with Sec. 30-4-1.7

Commentary: Appeals to the Board of Adjustment are heard "on the record," meaning that any and all information necessary to reverse or affirm a decision of the Advisory Commission on Trees must be contained in the written record.

Submittal Requirements for Modifications

Modification requests must be submitted to the Planning Department. Requests must be submitted at the appropriate time, and the burden is on the applicant to demonstrate that the criteria in Sec. 30-4-11.3 have been met.

Review and Decision Making Bodies

Department Directors

Final decision-making authority on Type 1 Modifications rests with the department director with general responsibility for administering and interpreting the subject regulation or standard. Standards and regulations eligible for modification through the Type 1 Modification procedure are expressly identified in the text of this ordinance. In addition, the Planning Director is authorized to approve, as a Type 1 Modification, an adjustment to zoning district setback requirements by up to one foot, when a building permit has been issued and there was an unintentional error of the Engineering and Inspections Director in verifying the location of a structure on the property, provided the purpose and intent of the ordinance is not impaired.

Technical Review Committee

The Technical Review Committee has final decision-making authority on all Type 2 Modifications, except that the Advisory Commission on Trees has final decision-making authority for Type 2 Modifications of the tree conservation requirements of Article 12. Standards and regulations eligible for modification through the Type 2 Modification procedure are expressly identified in the text of this ordinance.

Appeals of Modification Final Action

Appeals of Type 1 Modification final actions by the Planning Director may be made to the Technical Review Committee and subsequently to the Planning Board and the City Council.

Appeals of Type 2 Modification final actions by the Technical Review Committee (or the Advisory Committee on Trees) may be made to the Planning Board and City Council.

Duration of Approval

An approved modification is part of an approved plan and has the same duration as the plan approval.

Tree Disturbance Permit

A tree disturbance permit is an official authorization that must be issued by the City prior to any tree-disturbing activities. Tree-disturbing activities include the cutting and/or damage to the critical root zone of live trees with a diameter at breast height of 4 inches or greater on sites not accompanied by a development plan, except as expressly exempted pursuant to Sec. 30-4-26.3(D).

Requirements for a Tree Disturbance Permit

1) Identify and protect the required tree conservation area, as specified in Article 12.

2) Submit a tree conservation plan as specified in Sec. 30-4-26.3(C).

Tree Conservation Plan Approval

Approval of a tree conservation plan is required for all nonexempt developments and activities. The tree conservation plan must be submitted along with all other required information to the Technical Review Committee. Tree conservation plan information must be included on all grading plans, erosion control plans and tree disturbance permit applications.

Plans

Tree conservation plans must identify the following items:

1) boundaries of the required tree conservation area;

2) required planting yards;

3) protected trees within the tree conservation area, including tree size and type or when protecting large groups or stands of trees the species composition may be expressed as a forest type and diameters may be expressed as a range from lowest to highest (e.g., mixed hardwoods: DBH 6"–25");

4) critical root zone of each proposed protected tree, group of trees or proposed undisturbed critical root zone buffer (See Sec. 30-12-1.4 B)1);

5) limits of clearing;

6) grading;

7) trenching;

8) required tree conservation measures including required fencing and signage;

9) overhead and underground utilities and easements;

10) areas of reforestation, if any; and

11) stream buffers, if any.

Plan Notes

The following required notes must be included on all tree conservation plans, erosion control plans, grading plans and tree disturbance permit plans:

1) Contact the Planning Director to schedule a pre-construction meeting before any tree disturbance, except as noted in Sec. 30-4-26.3(C)(5), occurs on this site.

2) All tree conservation devices must be installed before inspection by the Planning Director and before any tree disturbance activities, except as noted in Sec. 30-4-26.3(C)(5), occur.

3) Removal of or damage to trees in the tree conservation area will be subject to all available remedies and penalties under the city's development ordinance.

4) No parking, storage, dirt stockpiling, concrete washout or any other activity is permitted in the tree conservation area.

Review

Tree conservation plans must be reviewed by the Planning Director for conformance with applicable provisions of this section (Article 12). The plans will either be determined to be in compliance and approved or determined to not be in compliance and returned for revisions. Reasons for return must be noted on the proposed plans.

Tree Conservation Measures

All tree conservation measures must be installed prior to any tree disturbing activities except those necessary to install the tree conservation and or temporary soil erosion control measures. The developer must contact the Planning Director to conduct an inspection of all tree conservation devises before any non-exempt tree disturbing activities.

Inspections

The Planning Director will conduct follow-up site inspections for enforcement of the tree conservation requirements of this ordinance.

The developer must contact the Planning Director to conduct an intermediate inspection of the tree conservation requirements after the site grading has been completed but before installation of landscaping.

The developer must contact the Planning Director to conduct a final inspection of the tree conservation requirements before being issued a Certificate of Occupancy.

Timing

Tree disturbance permits must be issued in advance of or simultaneous with all other permits and approvals including watershed development plans and grading permits.

Permit Duration and Renewal

Permit Duration

If the work authorized by a tree disturbance permit has not been completed within one year from the date of issuance, the permit is null and void unless renewed.

Renewal

A tree disturbance permit may be renewed for an additional 180 days by written request to the Planning Director justifying the need for permit renewal. No fee is required for renewal of a tree disturbance permit.

Enforcement (Tree Conservation)

Violations Not Involving Tree Removal or Damage

The Planning Director is authorized to issue a Notice of Violation for all violations that have not resulted in the removal or damage to trees or encroachment into the tree conservation area. The Notice of Violation must be administered in accordance with the provisions of Sec. 30-5-3.

Civil Penalties issued pursuant to a Notice of Violation may not exceed $5,000.00.

Failure to comply with the Notice of Violation may result in further legal actions, remedies and penalties as provided by Article 5 or state law.

Violations Involving Tree Removal or Damage

The Planning Director is authorized to issue a Civil Penalty for all violations that have resulted in the removal or damage to trees or encroachment into the tree conservation area. The Civil Penalty must be administered in accordance with the provisions of Sec. 30-5-5, except that issuance of a Notice of Violation prior to issuing the Civil Penalty shall not be required, and except as noted below.

Civil Penalties issued under this provision may not be less than $500.00 nor exceed $50,000.00 per violation.

In addition to any civil penalties issued under this provision, the Planning Director is authorized to require reforestation of the damaged trees or the tree conservation area as specified in Table 5-1 or Table 5-2 below, whichever is most applicable.

The penalty for the removal or damage to trees or the encroachment into the tree conservation area shall be assessed as described in Table 5-1 or Table 5-2 below, whichever is most applicable:

Table 5-1

DBH of Tree Removed or Damaged	**Civil Penalty**	**Reforestation Rate One 2" Caliper Minimum (Water Wise Species) or 3" Caliper Minimum (Non-Water Wise Species) per 400 sq. ft.**
4 – 11.9 Inches	$800.00	4 Caliper Inches
12 – 20.9 Inches	$1,600.00	8 Caliper Inches
21 – 28.9 Inches	$2,400.00	12 Caliper Inches
29 – 35.9 Inches	$3,200.00	16 Caliper Inches
36+ Inches	$4,000.00	20 Caliper Inches

Table 5-2

Civil Penalty $10,000.00 per acre or portion thereof of removal or damage to trees or encroachment into the tree conservation area
Reforestation Rate One 2” caliper minimum (water-wise species) or 3” caliper minimum (non-water wise species) per 400 sq. Ft.

Notes to Table 5-1 and 5-2: all reforestation requirements shall be approved by the Planning Director. The species of trees selected for reforestation shall be appropriate to the site conditions and be selected from the approved plant list located in this manual. All reforestation plans must comply with water-wise planting techniques.

Additional Civil Penalties

The civil penalty for failure to obtain a tree disturbance permit or TRC approval prior to tree disturbing activities is $500.00.

The civil penalty for failure to install and maintain tree conservation devices is $500.00 per incident.

The civil penalty for failing to obtain a scheduled inspection is $500.00 per incident.

Appeal of Tree Conservation Administrative Decision

Applicability

An appeal by any person aggrieved by a decision or an interpretation of the Planning Director or administrative official authorized to make decisions in regards to the tree conservation requirements may be taken to the Advisory Commission on Trees.

The Advisory Commission on Trees may not grant variances to the provisions relating to the tree conservation requirements of this ordinance.

Application Requirements

An application may be initiated by filing a written notice of appeal specifying the grounds for the appeal with the Planning Director.

An application to appeal must be prepared in accordance with the common review procedures of Sec. 30-4-1 and submitted to the Planning Department.

An application must be filed on forms published by the Planning Department. The application must be accompanied by drawings, descriptions, etc. of the proposed project.

A notice of appeal is considered filed when a complete application is delivered to the Planning Director. The date and time of filing must be entered on the notice.

Deadline for Submitting Applications

An appeal must be filed with the Planning Director within 15 days from the date of the decision or interpretation being appealed.

Notice and Public Hearings

Once the application has been filed, the Planning Director must schedule a public hearing at the first available Advisory Commission on Trees public meeting and give public notice as forth in Sec. 30-4-1.4.

Action by the Planning Director

The Planning Director must transmit to the Advisory Committee on Trees all the notes, applications, and other records relating to the decision being appealed.

Action by the Advisory Commission on Trees

A public hearing must be held prior to any decision on the application.

The Advisory Commission on Trees may, in its discretion, view the premises and obtain additional facts concerning any application before arriving at a decision. All decisions of the Advisory Commission on Trees must be supported by the evidence presented, and where necessary, may be accompanied by conditions as may be determined to be reasonable under the circumstances.

Should an applicant fail to appear for the hearing and should such applicant fail to notify the Planning Director to request a continuance of the hearing, such petition may be dismissed unless the Advisory Commission on Trees votes to continue the matter until the next meeting.

In any case where the Advisory Commission on Trees finds that an interpretation of any provision upon which it is being asked to act may have broad application beyond the specific appeal being heard, the Advisory Commission on Trees may continue final action until the next regular meeting in order to receive additional evidence before final action.

When acting in administrative review, the Advisory Commission on Trees must consider the Landscaping regulations of Article 10 and the Tree Conservation

regulations of Article 12. The Advisory Commission on Trees may reverse or affirm, in whole or in part, or may modify the order, requirement, decision, determination or interpretation appealed from, and shall make any order, requirement, decision, determination, or interpretation that in the Commission's opinion ought to be made under the circumstances. To this end the Advisory Commission on Trees has all the powers of the official from whom the appeal is taken.

Within 15 days of the Advisory Commission on Tree's original decision, an applicant may request a re-hearing on any matter upon the filing of a written petition for a re-hearing. The Advisory Commission on Trees may allow a re-hearing if it finds that that the applicant has presented new evidence that was not available or able to be discovered at the time of the original hearing. The re-hearings will then be held at the next regularly scheduled meeting of the Advisory Commission on Trees. It is the policy of the Advisory Commission on Trees to require a substantial showing of new evidence prior to granting such a re-hearing. Only one re-hearing may be had by an applicant on the same question. A petition for a re-hearing does not extend the time for filing an appeal of the decision of the Commission.

The final decision must be recorded in the minutes of the Advisory Commission on Trees and signed by the Chairman.

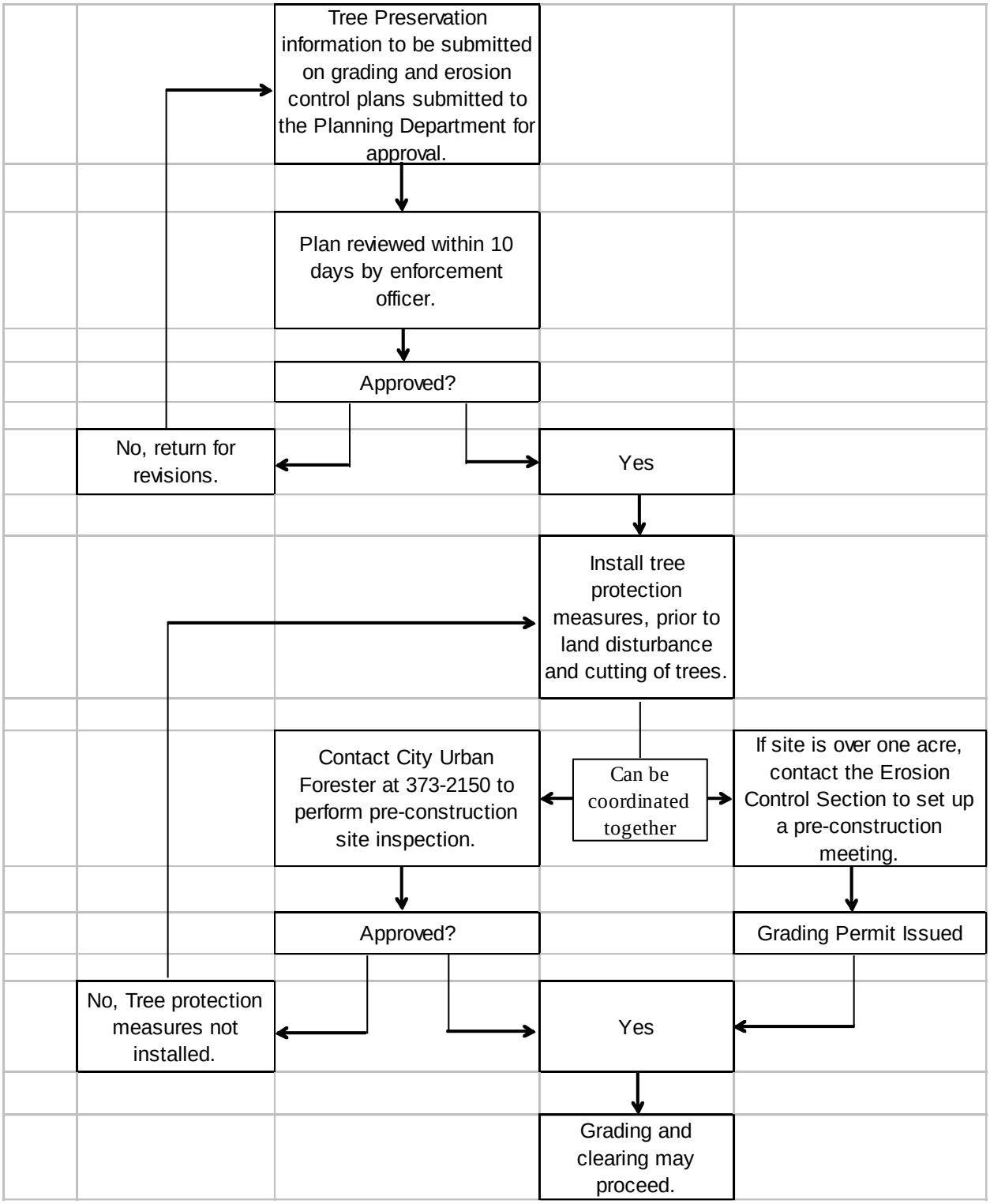
Appeals from Decisions by the Advisory Commission on Trees

Appeals from decisions of the Advisory Commission on Trees may be taken to the Board of Adjustment in accordance with Sec. 30-4-1.7.

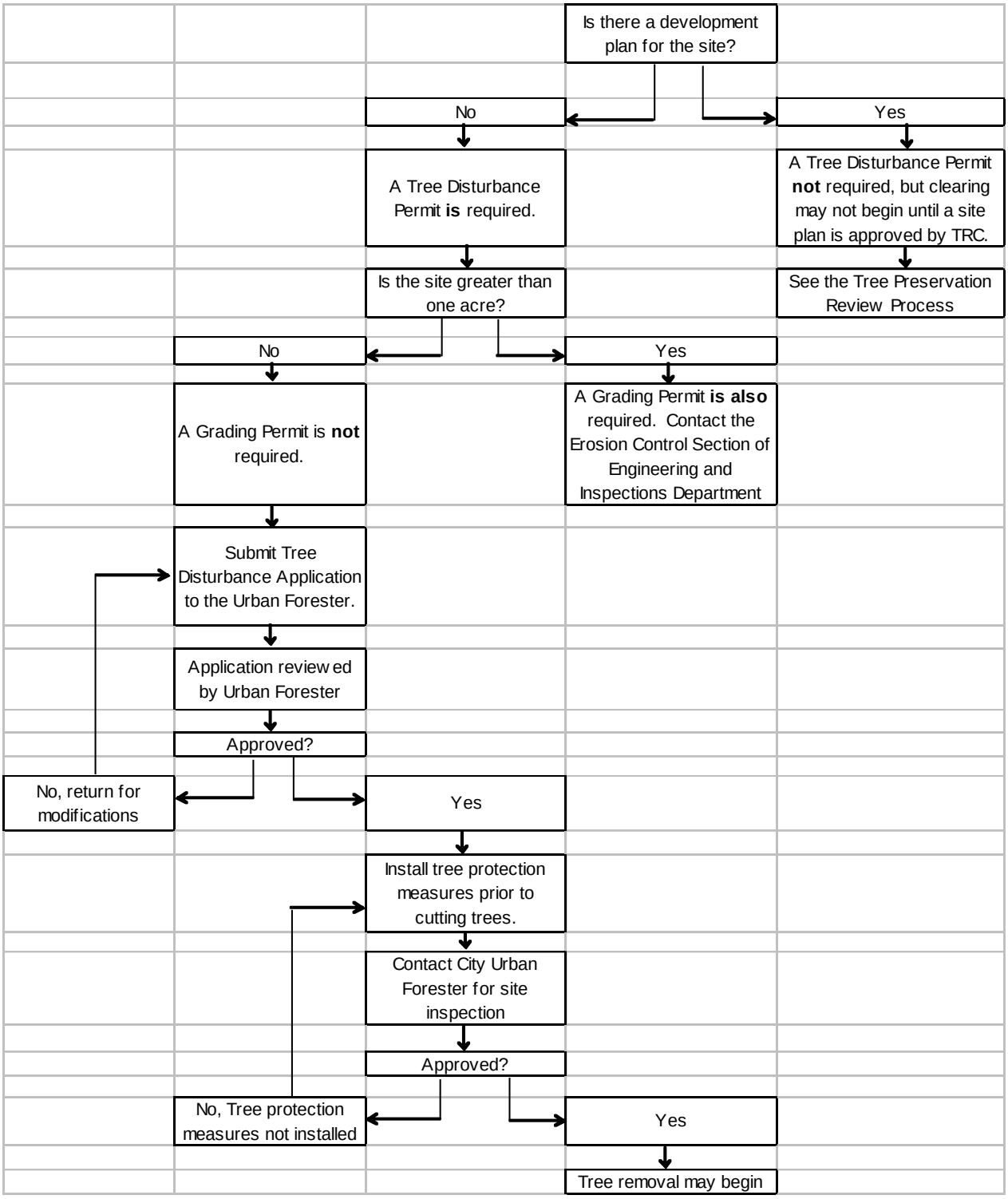
Re-Appeal After a Denial by the Advisory Commission on Trees

If an appeal has been dismissed or denied for a particular piece of property, no subsequent appeal may be made for the same decision of the Planning Director or other official for one year. When the Advisory Commission on Trees has ruled adversely upon a petition that asks for an interpretation of this ordinance, no applicant may re-apply for the same interpretation unless the Advisory Commission on Trees finds, in its opinion, that different factual circumstances exist to warrant a re-petition.

TREE CONSERVATION REVIEW PROCESS



TREE DISTURBANCE PERMIT PROCESS



TREE CONSERVATION PLAN CHECKLIST

- ☐ All tree preservation comments shall be made on the grading and erosion control plan sheet(s).
- ☐ Show the existing tree line, if any.
- ☐ Identify and label all tree conservation areas.
- ☐ Identify all trees to be saved. Label species and DBH of each tree or when saving large stands of trees; label the forest type and provide a range of diameters (DBH).
- ☐ Identify and label the critical root zone area.
- ☐ Locate and label the tree protection fence.
- ☐ Provide the City of Greensboro standard Detail # 448 – Tree Protection Fence Detail
- ☐ Provide a chart of Required TCA vs. Provided TCA.
- ☐ Locate and label any reforestation trees or areas.
- ☐ Provide the following notes;

Tree Conservation Notes:

1. Contact the Planning Director to schedule a pre-construction meeting before any tree disturbance, except as noted in Sec. 30-4-26.3(C)(5), occurs on this site.
2. All tree conservation devices must be installed before inspection by the Planning Director and before any tree disturbance activities, except as noted in Sec. 30-4-26.3(C)(5), occur.
3. Removal of or damage to trees in the tree conservation area will be subject to all available remedies and penalties under the city's development ordinance.
4. No parking, storage, dirt stockpiling, concrete washout or any other activities is permitted in the tree conservation area.

TREE CONSERVATION ACTION STEPS

Contact the City Urban Forester to set up a pre-construction meeting prior to any tree disturbance (336-373-2150). All tree protection measures shall be installed prior to any tree disturbing activities except those necessary to install the tree protection and or temporary soil erosion control measures. The developer shall contact the Urban Forester to conduct an inspection of all tree protection devises prior to any tree disturbing activities except as noted above.

The City Urban Forester will conduct an intermediate site inspection for enforcement of the tree protection requirements of the Development Ordinance of the City of Greensboro. The developer shall contact the Urban Forester to conduct an intermediate inspection of the Tree Preservation requirements after the site grading has been completed but prior to the installation of the landscaping.

The City Urban Forester will conduct a final site inspection for enforcement of the tree protection requirements of the Development Ordinance of the City of Greensboro. The developer shall contact the Urban Forester to conduct a final inspection of the Tree Preservation requirements prior to being issued a Certificate of Occupancy.

No disturbance is allowed within the Tree Conservation Area except as noted on the approved plan or with prior approval from the Urban Forester. The Tree Conservation Area includes the Critical Root Zone Area. To receive credit, trees must be protected from direct and indirect root, trunk and crown damage.

The Tree Conservation Area should be designated as such with “Tree Conservation Area” signs posted visibly on the outside of the fenced-in area. Signs may not be posted on the trees.

Tree protection fencing shall remain in place until construction is complete and other landscaping has been installed, and the City Urban Forester has approved its removal.

No parking, storage, dirt stockpiling, concrete washout or any other activities is permitted in the Tree Conservation Areas.

Removal or damage to trees in the Tree Conservation Area will be subject to the penalties established in 30-5-5.5 of the Land Development Ordinance.

TREES TO PLANT NEAR OR UNDER POWER LINES

The following plants are some excellent selections for city and rural landscaping under power lines. These small trees do not grow taller than 25 feet. (Please note that this list is for normal distribution power lines. There are different requirements for high transmission power lines.)

COMMON NAME	SCIENTIFIC NAME
American fringe tree	*Chionanthus virginicus*
Amur maple	*Acer ginnala*
Blackhaw viburnum	*Viburnum prunifolium*
Buckeye	*Aesculus pavia*
Crabapple	*Malus spp.*
Crape myrtle	*Lagerstroemia indica 'Cherokee'*
Crape myrtle	*Lagerstroemia indica 'Dallas Red'*
Crape myrtle	*Lagerstroemia indica 'Natchez'*
Crape myrtle	*Lagerstroemia indica 'Powhatan'*
Crape myrtle	*Lagerstroemia indica "Tuscarora'*
Dahoon	*Ilex cassine*
Dogwood	*Cornus florida*
Doublefile viburnum	*Viburnum plicatum var. tomentosum*
Dr. Kassab holly	*Ilex 'Dr. Kassab'*
Japanese apricot	*Prunus mume*
Japanese dogwood	*Cornus kousa*
Japanese flowering cherry	*Prunus serrulata 'Accolate', 'Okame'*
Japanese maple	*Acer palmatum*
Little Gem magnolia	*Magnolia grandiflora 'Little Gem'*
Northern bayberry	*Myrica pennsylvanica*
Osmanthus	*Osmanthus fortunei*
Redbud	*Cercis canadensis*
Saucer magnolia	*Magnolia soulangiana*
Serviceberry	*Amelanchier spp.*
Smoketree	*Cotinus coggygria*
Star magnolia	*Magnolia stellata*
Trident maple	*Acer buerferanum*
Witchhazel	*Hamamelis x intermedia*
Yaupon	*Ilex vomitor*

RECOMMENDED STREET TREES

Scientific Name	Ht (Feet)	Exposure	Comments
Acer rubrum	40 to 60	Sun, partial shade	Overused
Acer saccharum	50 to 75	Sun, partial shade	
Acer x freemanii	50 to 65	Sun	
Betula nigra	40 to 70	Sun, partial shade	
Carpinus betulus	40 to 60	Sun, partial shade	
Carpinus betulus 'fastigiata'	40 to 60	Sun, partial shade	
Carpinus caroliniana	20 to 30	Sun, partial shade	
Celtis laevigata	60 to 80	Sun	
Celtis occidentalis	40 to 60	Sun	
Fraxinus americana	60 to 80	Sun	
Fraxinus pennsylvanica	50 to 60	Sun	
Ginkgo biloba (male)	40 to 70	Sun	Slow growing
Gleditsia triacanthos inermis	30 to 70	Sun	
Liquidambar styraciflua	60 to 100	Sun, partial shade	
Liriodendron tulipifera	40 to 100	Sun	
Nyssa sylvatica	40 to 60	Sun, partial shade	
Platanus acerifolia	60 to 80	Sun	
Platanus occidentalis	70 to 100	Sun, partial shade	
Quercus acutissima	30 to 45	Sun, light shade	
Quercus alba	60 to 100	Sun	
Quercus bicolor	50 to 60	Sun, partial shade	
Quercus coccinea	50 to 80	Sun	
Quercus falcata	70 to 90	Sun	
Quercus imbricaria	50 to 60	Sun	
Quercus lyrata	35 to 45	Sun	
Quercus macrocarpa	70 to 80	Sun	
Quercus nigra	50 to 75	Sun, partial shade	
Quercus nuttalii	40 to 60	Sun	
Quercus palustris	60 to 80	Sun	
Quercus phellos	60 to 80	Sun	
Quercus prinus	60 to 70	Sun	
Quercus rubra	60 to 75	Sun	
Quercus shumardii	40 to 60	Sun	
Quercus stellata	40 to 50	Sun	
Quercus virginiana	30 to 50	Sun	
Taxodium distichum	50 to 100	Sun	
Tilia cordata	30 to 50	Sun	
Ulmus americana	75 to 125	Sun, partial shade	Disease resistance unknown
Ulmus parvifolia	40 to 50	Sun	Susceptible to ice damage
Zelkova serrata	50 to 80	Sun, partial shade	

Approved Plant List

Canopy Trees					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht (Feet)**	**Exposure**
Abies firma	Japanese fir	No	E	40 to 70	Sun
Acer platanoides	Norway maple	Yes	D	40 to 50	Sun
Acer pseudo-platanus	Sycamore maple	Yes	D	40 to 60	Sun
Acer rubrum	Red maple	Yes	D	40 to 60	Sun, partial shade
Acer saccharum	Sugar maple	No	D	50 to 75	Sun, partial shade
Acer x freemanii	Freeman maple	Yes	D	50 to 65	Sun
Aesculus flava	Yellow buckeye	No	D	50 to 70	Sun, partial shade
Aesculus hippocastanum	Common horse chestnut	No	D	50 to 75	Sun, partial shade
Alnus glutinosa	Common alder	Yes	D	40 to 60	Sun, partial shade
Betula jacquemontii	Jacquemontii birch; Whitebarked himalayan birch	No	D	30 to 50	Sun
Betula lenta	Sweet birch	Yes	D	40 to 55	Sun, partial shade
Betula nigra	River birch	No	D	40 to 70	Sun, partial shade
Calocedrus decurrens	Incense cedar	Yes	E	30 to 70	Sun, light shade
Carpinus betulus	European hornbeam	Yes	D	40 to 60	Sun, partial shade
Carpinus betulus 'fastigiata'	Upright European hornbean	Yes	D	40 to 60	Sun, partial shade
Carpinus caroliniana	American hornbeam, Ironwood	Yes	D	20 to 30	Sun, partial shade
Carya illinoensis	Pecan	Yes	D	70 to 100	Sun, light shade
Castanea sative	Spanish chestnut	Yes	D	80 to 100	Sun
Catalpa speciosa	Northern catalpa	Yes	D	40 to 70	Sun, partial shade
Cedrus atlantica 'Glauca'	Blue atlas cedar	Yes	E	60 to 100	Sun, partial shade
Cedrus deodara	Deodar cedar	Yes	E	40 to 70	Sun, light shade
Cedrus libani	Cedar of Lebanon	Yes	E	40 to 60	Sun
Celtis occidentalis	Hackberry	Yes	D	40 to 60	Sun
Cercidiphvllum japonicum	Katsuratree	No	D	40 to 60	Sun
Chamaecyparis obtusa	Hinoki falsecypress	No	E	50 to 75	Sun, light shade
Chamaecyparis pisifera	Japanese falsecypress	No	E	50 to 70	Sun
Cunninghamia lanceolata	China fir	No	E	30 to 75	Sun, partial shade
Eucommia ulmoides	Hardy rubber tree	Yes	D	40 to 60	Sun
Fagus grandifolia	American beech	No	D	50 to 80	Sun, partial shade
Fraxinus americana	White ash	Yes	D	60 to 80	Sun
Fraxinus pennsylvanica	Green ash	Yes	D	50 to 60	Sun

Canopy Trees Continued					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht. (Feet)**	**Exposure**
Ginkgo biloba (male)	Ginkgo	Yes	D	40 to 70	Sun
Gleditsia triacanthos	Honeylocust	Yes	D	30 to 70	Sun
Gleditsia triacanthos inermis	Thornless honeylocust	Yes	D	30 to 70	Sun
Gordonia lasianthus	Loblolly bay	No	E	30 to 50	Sun, partial shade
Gymnocladus dioica	Kentucky coffeetree	Yes	D	60 to 75	Sun
Ilex opaca	American holly	Yes	E	30 to 60	Sun, partial shade
Juniperus virginiana	Eastern redcedar	Yes	E	30 to 40	Sun
Kalopanax pictus	Castor-aralia	Yes	D	40 to 60	Sun
Larix keampferi	Japanese larch	No	D	50 to 70	Sun
Liquidambar styraciflua	Sweetgum	Yes	D	60 to 100	Sun, partial shade
Liriodendron tulipifera	Tuliptree, Yellow poplar	No	D	40 to 100	Sun
Magnolia acuminata	Cucumbertree magnolia	No	D	50 to 80	Sun, partial shade
Magnolia grandiflora	Southern magnolia	Yes	E	40 to 80	Sun, partial shade
Metasequoia glyptostroboides	Dawn redwood	Yes	D	50 to 90	Sun
Nyssa sylvatica	Black gum	No	D	40 to 60	Sun, partial shade
Picea abies	Norway spruce	No	E	40 to 60	Sun
Picea glauca	Alberta spruce	Yes	E	40 to 60	Sun, light shade
Picea pungens	Colorado blue spruce	Yes	E	30 to 90	Sun
Pinus echinata	Shortleaf pine	Yes	E	80 to 100	Sun
Pinus elliottii	Slash pine	Yes	E	60 to 80	Sun
Pinus flexilis	Limber pine	Yes	E	30 to 60	Sun, partial shade
Pinus heldreichii	Bosnian pine	Yes	E	70 to 90	Sun
Pinus nigra	Austrian pine	Yes	E	30 to 60	Sun
Pinus rigida	Pitch pine	Yes	E	40 to 60	Sun
Pinus sylvestris	Scotch pine	Yes	E	30 to 70	Sun
Pinus taeda	Loblolly pine	Yes	E	30 to 40	Sun, partial shade
Pinus thunbergiana	Japanese black pine	Yes	E	50 to 70	Sun
Pinus virginiana	Virginia pine	Yes	E	15 to 40	Sun
Platanus acerifolia	London plane tree	Yes	D	60 to 80	Sun
Quercus acutissima	Sawtooth oak	Yes	D	30 to 45	Sun, light shade
Quercus alba	White oak	Yes	D	60 to 100	Sun
Quercus bicolor	Swamp white oak	Yes	D	50 to 60	Sun, partial shade
Quercus coccinea	Scarlet oak	Yes	D	50 to 80	Sun
Quercus falcata	Southern red oak	Yes	D	70 to 90	Sun
Quercus hemisphaerica	Darlington oak	Yes	D	40 to 60	Sun, partial shade
Quercus imbricaria	Shingle oak	Yes	D	50 to 60	Sun

Canopy Trees Continued					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht. (Feet)**	**Exposure**
Quercus laurifolia	Laurel oak	Yes	D	40 to 60	Sun
Quercus lyrata	Overcup oak	Yes	D	35 to 45	Sun
Quercus macrocarpa	Bur oak	Yes	D	70 to 80	Sun
Quercus nigra	Water oak	Yes	D	50 to 75	Sun, partial shade
Quercus nuttalii	Nuttall oak	Yes	D	40 to 60	Sun
Quercus palustris	Pin oak	Yes	D	60 to 80	Sun
Quercus phellos	Willow oak	Yes	D	60 to 80	Sun
Quercus prinus	Chestnut oak	Yes	D	60 to 70	Sun
Quercus rubra	Red oak	Yes	D	60 to 75	Sun
Quercus shumardii	Shumard oak	Yes	D	40 to 60	Sun
Quercus stellata	Post oak	Yes	D	40 to 50	Sun
Quercus virginiana	Live oak	Yes	E	30 to 50	Sun
Salix matsudana	Scarlet Curls, Tortuosa	No	D	40 to 50	Sun
Sassafras albidum	Sassafras	Yes	D	30 to 60	Sun, partial shade
Taxodium ascendens	Pond cypress	Yes	D	70 to 80	Sun
Taxodium distichum	Baldcypress	Yes	D	50 to 100	Sun
Tilia americana	American linden	Yes	D	60 to 100	Sun
Tilia cordata	Littleleaf linden	Yes	D	30 to 50	Sun
Tilia tomentosa	Silver linden	Yes	D	40 to 70	Sun
Tsuga canadensis	Canadian hemlock	No	E	30 to 80	Sun, partial shade
Tsuga caroliniana	Carolina hemlock	No	E	30 to 70	Sun, partial shade
Ulmus americana cvs	American Elm cvs: Liberty Elm, Valley Forge Elm	Yes	D	75 to 125	Sun, partial shade
Ulmus parvifolia	Lacebark elm, Chinese elm	Yes	D	40 to 50	Sun
Zelkova serrata	Zelkova	Yes	D	50 to 80	Sun, partial shade

Understory Trees					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht (Feet)**	**Exposure**
Abies koreana	Korean fir	No	E	15 to 30	Sun
Acer barbatum (A. saccharum ssp. floridanum)	Southern sugar maple	Yes	D	20 to 25	Sun
Acer buergeranum	Trident maple	Yes	D	25 to 35	Sun
Acer campestre	Hedge maple	Yes	D	25 to 35	Sun, light shade
Acer cissifolium	Ivy-leaved maple	No	D	20 to 30	Sun, partial shade
Acer ginnala	Amur maple	Yes	D	15 to 20	Sun, partial shade
Acer griseum	Paperbark maple	No	D	20 to 30	Sun, partial shade
Acer japonicum	Fullmoon maple	No	D	20 to 30	Sun, partial shade
Acer leucoderme	Whitebark maple, Chalk maple	Yes	D	25 to 30	Sun, partial shade
Acer maxmowiczianum	Nikko maple	No	D	20 to 30	Sun
Acer palmatum	Japanese maple	No	D	15 to 25	Sun, partial shade
Acer spicatum	Mountain maple	No	D	10 to 30	Sun, partial shade
Acer triflorum	Three-flower maple	No	D	20 to 30	Sun, partial shade
Acer truncatum	Purple blow maple	Yes	D	20 to 25	Sun
Aesculus california	California buckeye	Yes	D	20 to 30	Sun, partial shade
Aesculus glabra	Ohio buckeye	No	D	20 to 40	Sun, partial shade
Aesculus pavia	Red buckeye	Yes	D	10 to 20	Sun, partial shade
Aesculus sylvatica	Painted buckeye	No	D	5 to 15	Sun, partial shade
Alnus japonica	Japanese alder	Yes	D	12 to 25	Sun, partial shade
Alnus serrulata	Tag alder	Yes	D	15 to 20	Sun. partial shade
Amelanchier alnifolia	Serviceberry	No	D	15 to 25	Sun, partial shade
Amelanchier arborea	Downy serviceberry	No	D	10 to 25	Sun, partial shade
Amelanchier canadensis	Shadbush	No	D	15 to 20	Sun, partial shade
Amelanchier x grandiflora	Apple serviceberry cvs: Autumn Brilliance, Princess Diana, etc.	No	D	20 to 25	Sun, partial shade
Carpinus japonica	Japanese hornbeam	Yes	D	20 to 30	Sun, partial shade
Carpinus orientalis	Oriental hornbeam	Yes	D	15 to 25	Sun, shade

Understory Trees Continued					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht. (Feet)**	**Exposure**
Cercis canadensis	Eastern redbud	Yes	D	20 to 30	Sun, partial shade
Cercis canadensis ssp retisus	Oklahoma redbud	Yes	D	20 to 30	Sun, partial shade
Cercis canadensis ssp. texensis	Texas redbud	Yes	D	15 to 20	Sun, partial shade
Cercis chinensis	Chinese redbud	Yes	D	8 to 12	Sun
Chionanthus retusus	Chinese fringe tree	Yes	D	15 to 25	Sun, partial shade
Chionanthus virginicus	Fringe tree	No	D	12 to 20	Sun, partial shade
Cladrastis kentuckea	Yellowwood	Yes	D	30 to 45	Sun
Cornus florida	Flowering dogwood	No	D	15 to 20	Partial shade
Cornus kousa	Kousa dogwood	No	D	20 to 30	Sun, partial shade
Cornus mas	Cornelain cherry dogwood	Yes	D	20 to 25	Sun, partial shade
Cornus Stellar hybrids	Stellar dogwood	No	D	15 to 30	Sun, partial shade
Corylus avellana 'Contorta'	Lauders walking stick	No	D	12 to 20	Sun
Cotinus coggygria	Smoketree	Yes	D	10 to 15	Sun
Cotinus hybrids	Smoketree cvs: Grace	Yes	D	10 to 15	Sun
Cotinus obovatus	American smoke tree	Yes	D	10 to 15	Sun
Crataegus crus-galli	Cockspur hawthorn	Yes	D	20 to 30	Sun
Crataegus laevigata	Scarlet hawthorn, English hawthorn	Yes	D	20 to 25	Sun
Crataegus phaenopyrum	Washington hawthorn	Yes	D	25 to 30	Sun
Crataegus x lavallei	Lavalle hawthorn	Yes	D	15 to 30	Sun
Crateegus viridis	Green hawthron	Yes	D	15 to 20	Sun, light shade
Cryptomeria japonica	Cryptomeria	Yes	E	50 to 60	Sun, light shade
Cryptomeria japonica	Cryptomeria cvs: Sekkan-Sugi, etc.	No	E	15 to 30	Sun, light shade
Cupressus arizonica	Arizona cypress	Yes	E	30 to 40	Sun
Cupressus sempervirens	Italian cypress	Yes	E	20 to 30	Sun
Cydonia sinensis	Chinese quince	No	D	10 to 20	Sun, partial shade
Euscaphis japonica	Korean sweetheart tree	Yes	D	20	Sun, partial shade
Firmiana simplex	Chinese parsaol tree	No	D	30 to 45	Sun
Halesia carolina, H. tetraptera	Carolina silverbell	No	D	20 to 40	Sun, partial shade
Halesia diptera	Two-winged silverbell	No	D	15 to 30	Sun, partial shade
Heptacodium miconiodes	Seven-son flower	Yes	D	10 to 20	Sun, partial shade
Hovenia dulcis	Japanese raisin tree	Yes	D	30	Sun, light shade

Understory Trees Continued					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht. (Feet)**	**Exposure**
Ilex cassine	Dahoon holly	Yes	E	20 to 30	Sun, partial shade
Ilex decidua	Possumhaw	Yes	D	20 to 30	Sun, partial shade
Ilex pedunculosa	Long stalk holly	Yes	E	20 to 30	Sun, partial shade
Ilex vomitoria 'Pendula'	Weeping yaupon holly	Yes	E	20 to 25	Sun, partial shade
Ilex x 'Nellie R. Stevens'	Nellie R. Stevens holly	Yes	E	20 to 40	Sun, partial shade
Ilex x 'Carolina Sentinal'	Carolina Sentinal holly	No	E	20 to 25	Sun, partial shade
Ilex x attenuata	Ilex cvs: Savannah, Foster, Sunny Foster, East Palatka, etc.	Yes	E	20 to 30	Sun, partial shade
Juniperous saliciola	Southern red cedar	Yes	E	30 to 40	Sun
Juniperous scopulorum	Rocky Mountain juniper cvs: Blue Haven, Skyrocket, Wichita Blue	Yes	E	15 to 40	Sun
Koelreuteria bipinnata	Southern Goldenraintree	Yes	D	20 to 30	Sun
Koelreuteria paniculata	Goldenraintree	Yes	D	20 to 40	Sun
Lagerstroemia fauriei	Japanese crapemyrtle	Yes	D	20 to 30	Sun
Lagerstromia indica	Crapemyrtle	Yes	D	15 to 30	Sun
Lagerstromia indica x fauriei	Crapemyrtle cvs: Choctaw, Muskogee, Natchez, Tuscarora, etc.	Yes	D	15 to 30	Sun
Lithocarpus henryi	Henry tanbark oak	Yes	E	25 to 30	Sun, partial shade
Maackia amuremsis	Amur maackia	Yes	D	20 to 30	Sun
Maclura pomifera	Osage-orange	Yes	D	20 to 40	Sun
Magnolia grandiflora 'Little Gem'	Little Gem magnolia	Yes	E	15 to 20	Sun
Magnolia hybrids	Magnolia cvs: Ann, Betty, Judy, Mary Nell, Galaxy, etc	No	D	10 to 30	Sun
Magnolia liliiflora	Lily magnoloia	No	D	12 to 15	Sun
Magnolia macrophylla	Bigleaf magnolia	No	D	30 to 40	Sun, partial shade
Magnolia sieboldii	Oyama magnolia	No	D	10 to 20	Partial shade
Magnolia stellata	Star magnolia	No	D	10 to 20	Sun
Magnolia virginiana	Sweetbay magnolia	No	E	10 to 60	Sun, partial shade
Magnolia x soulangiana	Saucer magnolia	No	D	15 to 25	Sun, partial shade
Malus spp.	Crabapple	Yes	D	15 to 25	Sun
Morus australis 'Unryo'	Contorted mulberry	Yes	D	20 to 30	Sun
Nyssa ogeche	Ogeche gum	No	D	30 to 50	Sun, partial shade
Ostrya virginiana	American hophornbeam or Ironwood	Yes	D	25 to 40	Sun, partial shade

Understory Trees Continued					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht. (Feet)**	**Exposure**
Oxydendrum arboreum	Sourwood	Yes	D	20 to 30	Sun, partial shade
Parrotia persica	Persian ironwood	Yes	D	20 to 40	Sun, light shade
Persea borbonia	Redbay	Yes	E	15 to 40	Sun, partial shade
Phellodendron amurense	Amur cork tree	Yes	D	30 to 45	Sun
Photinia serrulata	Chinese photinia	Yes	E	20 to 30	Sun
Picea glauca (dwarf cultivars)	Spruce cvs: Conica, etc	Yes	E	10 to 20	Sun, light shade
Pinus bungeana	Lacebark pine	Yes	E	30 to 50	Sun
Pinus cembra	Swiss stone pine	Yes	E	30 to 40	Sun
Pinus korariensis	Korean pine	Yes	E	30 to 40	Sun, partial shade
Pinus mugo	Mugo pine	Yes	E	15 to 20	Sun, partial shade
Pinus wallichiana	Himalayan pine	Yes	E	30 to 50	Sun, partial shade
Pistacia chinensis	Chinese pistache	Yes	D	25 to 40	Sun
Poncirus trifoliata	Hardy orange	Yes	D	8 to 20	Sun
Prunus 'Snow Goose'	Snow Goose cherry	No	D	20	Sun
Prunus campanulata	Taiwan cherry	No	D	20 to 30	Sun, partial shade
Prunus caroliniana	Carolina laurelcherry	No	E	20 to 40	Sun, partial shade
Prunus cerasifera	Purple leaf plum	No	D	15 to 25	Sun
Prunus mume	Japanese apricot	No	D	10 to 20	Sun, partial shade
Prunus percica (Corinthian hybrids)	Corinthian peach	No	D	20 to 25	Sun
Prunus sargentii	Sargent cherry	No	D	20 to 40	Sun
Prunus serrulata	Japanese cherry	No	D	15 to 25	Sun, partial shade
Prunus subhirtella	Higon cherry	No	D	20 to 40	Sun
Prunus x 'Okame'	Okame cherry	No	D	15 to 30	Sun
Prunus x blireana	Blireana cherry	No	D	15 to 20	Sun
Prunus x cistena	Purple leaf plum	No	D	7 to 14	Sun
Prunus x yedoensis	Yoshino cherry	No	D	30 to 40	Sun, light shade
Pseudolarix amabilis	Golden-larch	No	D	20 to 40	Sun
Ptelea trifolia	Hop tree	Yes	D	15 to 20	Sun, partial shade
Pyrus calleryana	Pear cvs: Cleveland, Aristocrat, Redspire, 'Holmford'	Yes	D	30 to 40	Sun
Rhamnus caroliniana	Carolina buckthorn	Yes	D	15 to 30	Sun
Rhus typhina	Staghorn sumac	Yes	D	15 to 25	Sun
Robinia pseudoacacia	Black locust	Yes	D	30 to 50	Sun
Salix babylonica	Weeping willow	No	D	30 to 50	Sun

Understory Trees Continued					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht. (Feet)**	**Exposure**
Sinojackia rehderiana	Jacktree	No	D	15 to 20	Sun, partial shade
Stewarta rostrata	Upright stewartia	No	D	15	Sun, partial shade
Stewartia koreana	Korean stewartia	No	D	20 to 30	Sun, partial shade
Stewartia ovata	Mountain stewartia	No	D	10 to 15	Sun, light shade
Stewartia pseudocamellia	Japanese stewartia	No	D	20 to 40	Sun, partial shade
Styrax japonica	Japanese snowbell	No	D	20 to 30	Sun, partial shade
Styrax malacodendron	Silky stewartia	No	D	10 to 15	Partial shade
Styrax obassia	Fragrant snowball	No	D	20 to 30	Sun, partial shade
Syringa reticulata	Japanese tree lilac	No	D	20 to 30	Sun
Thuja occidentalis	Eastern arborvitae	No	E	10 to 30	Sun
Thuja occidentalis	American arborvitae	No	E	40 to 60	Sun
Thuja orientalis	Oriental arborvitae	No	E	18 to 25	Sun
Thuja plicata	Giant arborvitae	No	E	50 to 80	Sun, partial shade
Thuja x 'Green Giant'	Green Giant arbor	No	E	40 to 60	Sun
Trachycarpus fortunei	Windmill palm	Yes	E	15 to 35	Sun, partial shade
Trochodendron aralioides	Wheel tree	No	D	10 to 20	Partial shade
Ulmus alata	Winged elm	Yes	D	30 to 40	Sun
Vitex agnus-castus	Vitex chastetree	Yes	D	15 to 20	Sun
Ziziphus jujuba	Common jujuba	Yes	D	15 to 20	Sun

Shrubs					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht (Feet)**	**Exposure**
Abelia chinesis	Chinese abelia	Yes	semi	5 to 7	Sun, partial shade
Abelia hybrids	Abelia cvs: Edward Goucher, Little Richard, Sunrise, etc.	Yes	semi	Varies	Sun, partial shade
Abelia x grandiflora	Glossy abelia	Yes	semi	3 to 6	Sun, partial shade
Abeliophyllum distichum	White forsythia	Yes	semi	3 to 5	Sun, partial shade
Abies concolor (dwarf cultivars)	White fir	Yes	E	Varies	Sun, partial shade
Aesculus parvviflora	Bottlebrush buckeye	Yes	D	8 to 12	Sun, partial shade
Agava americana	Century plant	Yes	E	3 to 6	Sun
Amorpha canescens	Leadplant	Yes	D	2 to 4	Sun
Aucuba japonica	Aucuba	Yes	E	6 to 10	Partial shade
Berberis julianae	Wintergreen barberry	Yes	E	6 to 8	Sun, partial shade
Berberis koreana	Korean barberry	Yes	D	4 to 6	Sun, partial shade
Berberis thunbergii	Japanese barberry	Yes	D	3 to 6	Sun, partial shade
Berberis thunbergii var. atropurpurea	Red barberry, Rose glow barberry	Yes	D	3 to 6	Sun, partial shade
Berberis triacanthophora	Threespine barberry	Yes	E	3 to 5	Sun, partial shade
Berberis verruculosa	Warty barberry	Yes	E	3 to 4	Sun, partial shade
Berberis x chenaultii	Chenault barberry	Yes	E	3 to 4	Sun
Berberis x gladwynensis 'William Penn'	William Penn barberry	Yes	E	3 to 4	Sun, partial shade
Berberis x mentorensis	Mentor barberry	Yes	D	5	Sun, partial shade
Buddleia alternifolia	Alternate-leaf butterfly-bush	Yes	D	10 to 20	Sun
Buddleia davidii	Butterfly-bush	Yes	D	10 to 15	Sun
Buddleia golbosa	Orange ball tree	Yes	semi	10 to 15	Sun
Buddleia lindleyana	Lindley butterfly-bush	Yes	E	4 to 6	Sun
Buddleia loricata	Butterfly-bush	Yes	E	4 to 5	Sun
Buxus harlandii	Harland boxwood	Yes	E	4 to 6	Sun
Buxus hybrids	Boxwood cvs: Green Mountain, Green Velvet, Wintergreen	Yes	E	2 to 4	Partial shade
Buxus sempervirens	Common boxwood	Yes	E	15 to 20	Partial shade
Buxus sempervirens 'Suffruticosa'	English boxwood	Yes	E	2 to 4	Partial shade
Buxus sinica var. japonica	Japanese boxwood	Yes	E	3 to 6	Partial shade

Shrubs Continued					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht. (Feet)**	**Exposure**
Buxus sinics (B. microphylla)	Little leaf boxwood	Yes	E	3 to 4	Partial shade
Callicarpa americana	American beautyberry	Yes	D	3 to 8	Sun, partial shade
Callicarpa bodinieri	Bodinier beautyberry	Yes	D	6 to 10	Sun, partial shade
Callicarpa dichotoma	Purple beautyberry	Yes	D	3 to 4	Sun, partial shade
Callicarpa japonica	Japanese beautyberry	Yes	D	4 to 6	Sun, partial shade
Callistemon citrinus	Lemon bottlebrush	Yes	E	10 to 15	Sun
Camellia sasanqua	Sasanqua camellia	Yes	E	6 to 10	Sun, partial shade
Camellia sinensis	Tea camellia	Yes	E	4 to 6	Partial shade
Caryopteris x clandonensis	Blue mist shrub, Blue caryopteris	Yes	D	2 to 3	Sun
Ceanothus americanus	New Jersey tea	Yes	D	3 to 4	Sun, partial shade
Ceanothus x pallidus	Ceonothus	Yes	D	3 to 4	Sun
Cedrus deodara (dwarf cultivars)	Cedar cvs: Snow Sprite, Compacta, etc.	Yes	E	Varies	Sun
Cephalotaxus harringtonia	Japanese plum yew	Yes	E	5 to 10	Partial shade
Cornus sericea; (C. stolonifera)	Redosier dogwood	Yes	D	7 to 9	Sun, partial shade
Cotoneaster apiculatus	Cranberry cotoneaster	Yes	D	3	Sun, partial shade
Cotoneaster dammeri	Bearberry cotoneaster	Yes	E	1 to 2	Sun
Cotoneaster divaricatus	Spreading cotoneaster	Yes	D	5 to 6	Sun
Cotoneaster horizontalis	Rockspray cotoneaster	Yes	E	2 to 3	Sun
Cotoneaster lacteus	Parney cotoneaster	Yes	E	6 to 10	Sun, partial shade
Cotoneaster microphyllus	Little-leaf cotoneaster	Yes	E	2 to 3	Sun, partial shade
Cotoneaster salicifolia	Willowleaf cotoneaster	Yes	E	10 to 15	Sun, partial shade
Cytisus scoparius	Scotch broom	Yes	D	5 to 6	Sun, partial shade
Deutzia gracilis	Slender deutzia	Yes	D	3 to 4	Sun, partial shade
Deutzia hybrids	Deutzia cvs: Pink Minor, Strawberry Fields, Magician, etc.	Yes	D	2 to 4	Sun, partial shade
Diervilla sessilifolia	Southern bush-honeysuckle	Yes	D	3 to 5	Sun, partial shade
Elaeagnus fruitlandi	Elaeagnus	Yes	E	10	Sun, partial shade
Elaeagnus pungens	Thorny elaeagnus	Yes	E	10 to 15	Sun, partial shade
Elaeagnus x ebbingii	Elaeagnus	Yes	E	8 to 10	Sun, partial shade

Shrubs Continued					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht. (Feet)**	**Exposure**
Euonymus alatus	Winged euonymus	Yes	D	15 to 20	Sun
Euonymus americana	Strawberry bush	Yes	D	4 to 6	Partial shade
Euonymus japonicus	Japanese euonymus	Yes	E	5 to 10	Sun, partial shade
Euonymus kiautschovicus	Spreading euonymus	Yes	E	8 to 10	Sun, partial shade
Fontanesia fortunei	Fortune's fontanesia	Yes	D	10 to 15	Sun, partial shade
Forsythia x hybrids	Forsythia cvs: Beatrix Farrand, Lynwood Gold, Golden Times, Spring Glory, etc.	Yes	D	Varies	Sun, partial shade
Forsythia x intermedia	Border forsythia	Yes	D	8 to 10	Sun, partial shade
Fothergilla gardenii	Dwarf fothergilla	Yes	D	2 to 3	Sun, partial shade
Fothergilla major	Large fothergilla	Yes	D	6 to 12	Partial shade
Gardenia augusta (G. jasminoides)	Gardenia	Yes	E	4 to 6	Sun, partial shade
Genista pilosa	Silky-leaf woadwaxen	Yes	D	1 to 3	Sun
Hamamelis mollis	Chinese witchhazel	Yes	D	10 to 15	Partial shade, shade
Hamamelis vernalis	Vernal witchhazel	Yes	D	6 to 10	Sun, partial shade
Hydrangea quercifolia	Oakleaf hydrangea	Yes	D	4 to 6	Sun, partial shade
Ilex 'China Boy', 'China Girl'	China holly	Yes	E	8 to 10	Sun, partial shade
Ilex cornuta	Holly cvs: Carissa, Burford, Rotunda, Needlepoint, etc.	Yes	E	2 to 15	Sun
Ilex cornuta cvs.	Holly cvs: Burfordii, D'Or, O' Spring	Yes	E	10 to 25	Sun, partial shade
Ilex crenata cvs.	Holly cvs: Hetz, Helleri, etc.	Yes	E	4 to 10	Sun, partial shade
Ilex decidua	Possomhaw holly	Yes	D	7 to 15	Sun, partial shade
Ilex glabra	Inkberry holly	Yes	E	6 to 8	Sun, partial shade
Ilex latifolia	Lusterleaf holly	Yes	E	20 to 25	Sun, partial shade
Ilex vomitoria	Yaupon holly	Yes	E	15 to 20	Sun, partial shade
Ilex vomitoria cvs.	Holly cvs: Nana, Schillings, Katherine, etc.	Yes	E	Varies	Sun, partial shade
Ilex x 'Nellie R. Stevens'	Nellie Stevens holly	Yes	E	15 to 25	Sun, partial shade
Ilex x 'Emily Bruner'	Emily Bruner holly	Yes	E	15 to 20	Sun, partial shade
Ilex x 'Mary Nell'	Mary Nell holly	Yes	E	10 to 20	Sun, partial shade

Shrubs Continued					
Scientific Name	**Common name**	**Water Wise**	**E/D**	**Ht. (Feet)**	**Exposure**
Ilex x koehneana	Koehne holly	Yes	E	Varies	Sun, partial shade
Indigofera amblyantha	Indigofera	Yes	D	4 to 6	Sun
Indigofera heterantha	Himalayan indigo	Yes	D	4 to 6	Sun
Itea virginica	Virginia sweetspire	Yes	D	3 to 5	Sun, partial shade
Jasminum floridum	Showy jasmine	Yes	E	3 to 5	Sun, partial shade
Jasminum humile	Italian yellow jasmine	Yes	E	5 to 7	Partial shade
Jasminum nudiflorum	Winter jasmine	Yes	D	3 to 4	Sun, partial shade
Juniperus chinensis	Chinese juniper cvs: Wintergreen, Spartan, Hooks, etc.	Yes	E	12 to 50	Sun
Juniperus chinensis (dwarf cultivars)	Chinese juniper cvs: Procumbens Nana, Berkshire, Sargenti, Hetzi	Yes	E	3 to 12	Sun
Juniperus communis	Common juniper	Yes	E	5 to 10	Sun
Juniperus conferta cvs.	Juniper cvs: Blue Lagoon, Blue Pacific, Boulevard, etc.	Yes	E	1 to 2	Sun
Juniperus davurica cvs.	Parsons juniper	Yes	E	2 to 3	Sun
Juniperus horizontalis	Juniper cvs: Blue Vase, Blue Chip, Wiltonii, etc.	Yes	E	1 to 2	Sun
Juniperus hybrids	Juniper cvs: Saybrook Gold, etc.	Yes	E	Varies	Sun
Juniperus procumbens	Japanese garden juniper	Yes	E	.5 to 1.5	Sun
Juniperus rigida	Needle juniper	Yes	E	15 to 20	Sun
Juniperus sabina	Savin juniper	Yes	E	4 to 6	Sun
Juniperus scopulorum (dwarf cultivars)	Juniper cvs: Blue Creeper, Skyrocket, etc.	Yes	E	Varies	Sun
Juniperus squamata cvs.	Juniper cvs: Holger, Blue Elf, Calgary Carpet, Blue Satr, etc.	Yes	E	Varies	Sun
Juniperus virginiana cvs.	Juniper cvs: Blue Mountain, Blue Cloud, Grey Owl, etc.	Yes	E	Varies	Sun
Juniperus x media	Juniper cvs: Seagreen, Old Gold, etc.	Yes	E	Varies	Sun
Kalmia latifolia	Mountain laurel	Yes	E	4 to 8	Sun, partial shade
Kolkwitzia amabilis	Beautybush	Yes	D	6 to 10	Sun
Lagerstroemia indica and hybrids	Crapemyrtle cvs: New Orleans, Centennial, Chica, Tonto, Acoma	Yes	D	5 to 15	Sun
Lantana camera	Lantana	Yes	D	1 to 5	Sun
Lavandula angustifolia	Common lavender	Yes	E	1 to 2	Sun
Lavandula x intermedia	Hybrid lavender	Yes	E	1 to 2	Sun

Shrubs Continued					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht. (Feet)**	**Exposure**
Lespedeza thunbergii	Thunberg lespedeza	Yes	D	3 to 6	Sun
Lespedza bicolor	Shrub bushclover	Yes	D	6 to 10	Sun
Lindera benzoin	Spice bush	Yes	D	6 to 12	Sun, partial shade
Lonicera fragrantissima	Winter honeysuckle	Yes	D	6 to 10	Sun, partial shade
Lonicera nitida	Boxleaf honeysuckle	Yes	E	6 to 8	Sun, partial shade
Lonicera pileata	Privet honeysuckle	Yes	E	2 to 3	Sun, partial shade
Loropetalum chinensis	Loropetalum	Yes	E	6 to 12	Sun, partial shade
Loropetalum hybrids	Loropetalum cvs: Plum Delight, Ruby, Fire Dance, etc.	Yes	E	4 to 10	Sun, partial shade
Mahonia aquifolium	Oregon grape holly	Yes	E	3 to 6	Partial shade
Mahonia bealei	Leatherleaf mahonia	Yes	E	6 to 7	Partial shade
Mahonia fortunei	Chinese mahonia	Yes	E	5 to 6	Partial shade
Mahonia x media	Mahonia cvs: Buckland, Charity, Faith, etc.	Yes	E	8 to 15	Partial shade
Michelia figo	Banana shrub	Yes	E	6 to 10	Sun, Partial shade
Myrica cerifera	Southern waxmyrtle	Yes	E	10 to 15	Sun, partial shade
Myrica pensylvanica	Northern bayberry	Yes	E	5 to 12	Sun, partial shade
Nandina domestica	Nandina	Yes	E	6 to 8	Sun, partial shade
Nandina domestica (dwarf cultivars)	Nandina cvs: Wood's Dwarf, Nana, Fire Power, Gulf Stream, etc	Yes	E	2 to 4	Sun, partial shade
Perovskia atriplicifolia	Russian sage	Yes	E	3 to 5	Sun
Photinia serrulata	Chinese photinia	Yes	E	20 to 25	Sun, partial shade
Physocarpus opulifolius	Ninebark	Yes	D	5 to 10	Sun, partial shade
Picea abies (dwarf cultivars)	Spruce cvs: Little Gem, Pendula, etc.	Yes	E	Varies	Sun
Picea glauca (dwarf cultivars)	Spruce cvs: Conica, etc.	Yes	E	Varies	Sun
Picea pungens (dwarf cultivars)	Spruce cvs: Globosa, Montgomery, Bakeri, Fat Albert, Foxtail, etc.	Yes	E	Varies	Sun
Pinus mugo	Mugo pine	Yes	E	15 to 20	Sun, partial shade
Pinus mugo (dwarf cultivars)	Pine cvs: Pumilio, Mughus	Yes	E	Varies	Sun
Pinus nigra cvs.	Pine cvs: Arnold Sentinel, Monstrosa, ec.	Yes	E	3 to 5	Sun
Pinus rigida	Pine cvs: Sherman Eddy, etc	Yes	E	15 to 20	Sun

Shrubs Continued					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht. (Feet)**	**Exposure**
Pinus sylvestris (dwarf cultivars)	Pine cvs: Nana, Hillside Creeper, etc.	Yes	E	Varies	Sun
Pinus thunbergii (dwarf cultivars)	Pine cvs: Nana, Thunderhead	Yes	E	Varies	Sun
Pittosporum tobira	Japanese pittosporum	Yes	E	10 to 12	Sun, partial shade
Podocarpus macrophyllus var. maki	Shrubby podocarpus	Yes	E	20 to 35	Sun, partial shade
Potentilla fruticosa	Shrubby potentilla	Yes	D	1 to 4	Sun, partial shade
Prunus glandulosa	Flowering almond	Yes	D	4 to 5	Sun, partial shade
Prunus laurocerasus	English laurel	Yes	E	10 to 18	Sun, partial shade
Punica granatum	Pomegranate	Yes	D	12 to 15	Sun, partial shade
Pyracantha coccinea	Scarlet firethorne	Yes	E	6 to 18	Sun
Pyracantha hybrids	Pyracantha cvs: Mohave, Mojave, Red Elf, Tiny Tim, etc.	Yes	E	Varies	Sun
Pyracantha koidzumii	Formosa pyracantha	Yes	E	8 to 12	Sun
Raphiolepis hybrids	Hawthorn cvs: Gulfgreen, Cuppertone	Yes	D	3 to 6	Sun
Rhamnus fragula	Alder buckthorn	Yes	D	10 to 12	Sun, partial shade
Rhaphiolepis x delacourii	Indian hawthorn, Yeddo hawthorn	Yes	E	3 to 4	Sun, partial shade
Rhapidiophyllum hystrix	Needle palm	Yes	E	6 to 8	Sun, partial shade
Rhododendron austrinum	Florida azalea	Yes	D	8 to 10	Partial shade
Rhododendron calendulaceum	Flame azalea	Yes	D	4 to 8	Partial shade
Rhodotypos scandens	Black jetbead	Yes	D	3 to 6	Sun, partial shade
Rhus aromatica	Sumac	Yes	D	2 to 6	Sun, partial shade
Rhus glabra	Smooth sumac	Yes	D	10 to 15	Sun
Rhus michauxii	Michaux's sumac	Yes	D	2 to 3	Sun
Rhus typhina	Staghorn sumac	Yes	D	15 to 25	Sun
Rosa chinensis	China rose	Yes	D	6 to 8	Sun
Rosa 'Knock Out'	Knock Out rose	Yes	D	4 to 5	Sun
Rosa rugosa	Rugosa rose	Yes	D	4 to 6	Sun

Shrubs Continued					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht. (Feet)**	**Exposure**
Rosmarinus officinalis	Rosemary	Yes	E	2 to 4	Sun
Ruscus aculeatus	Butcher's broom	Yes	E	1.5 to 3	Partial shade
Sabal minor	Dwarf palmeto	Yes	E	3 to 5	Sun
Santolina chamaecyparissus	Santolina, Lavender cotton	Yes	E	1 to 2	Sun
Sarcococca confusa	Sweet Box	Yes	E	3 to 5	Partial shade
Sarcococca hookeriana	Himalayan sarcococca	Yes	E	4 to 6	Partial shade
Sarcococca orientalis	Oriental sweetbox	Yes	E	2 to 3	Partial shade
Sarcococca ruscifolia	Fragrant sarcococca	Yes	E	2 to 3	Partial shade
Sinojackia rehderiana	Jacktree	Yes	D	15 to 20	Sun, partial shade
Spiraea cantoniensis	Double Reeves spirea	Yes	D	4 to 6	Sun, partial shade
Spiraea japonica	Japanese spirea	Yes	D	4 to 5	Sun, partial shade
Spiraea nipponica 'Snowmound'	Snowmound spirea	Yes	D	3 to 5	Sun, partial shade
Spiraea prunifolia	Bridalwreath spirea	Yes	D	4 to 9	Sun, partial shade
Spiraea thunbergii	Thunberg spirea	Yes	D	3 to 5	Sun, partial shade
Spiraea x bumalda	Bumalda spirea	Yes	D	2 to 3	Sun, partial shade
Spiraea x vanhouttei	Vanhoutte spirea	Yes	D	6 to 8	Sun, partial shade
Syringa pekinensis	Peking lilac	Yes	D	15	Sun
Taxus chinensis	Chinese yew	Yes	E	5 to 10	Sun, partial shade
Teucrium chamaedrys	Wall germander	Yes	E	1 to 1.5	Sun
Ulmus galbra 'Horizontalis'	Tabletop scotch elm	Yes	D	15	Sun
Viburnum acerifolium	Maple-leaf viburnum	Yes	D	4 to 6	Partial shade
Viburnum awabuki	Chindo Viburnum	Yes	E	10 to 15	Sun, partial shade
Viburnum pilcatum var tomentosum	Doublefile viburnum	Yes	E	8 to 10	Sun, partial shade
Viburnum tinus	Laurustinus	Yes	E	6 to 12	Sun, partial shade
Viburnum x pragense	Pragense viburnum	Yes	E	8 to 10	Sun, partial shade
Vitex agnus castus	Chastetree	Yes	D	15 to 20	Sun
Vitex negundo	Chastetree	Yes	D	10 to 20	Sun

Shrubs Continued					
Scientific Name	**Common Name**	**Water Wise**	**E/D**	**Ht. (Feet)**	**Exposure**
Xanthorhiza simplicissima	Yellowroot	Yes	D	2 to 3	Sun, partial shade
Yucca filamentosa	Adam's needle yucca	Yes	E	2 to 4	Sun
Yucca flaccida	Weakleak yucca	Yes	E	1 to 2	Sun
Yucca gloriosa	Soanish dagger yucca	Yes	E	6 to 8	Sun

Standard Tree Conservation Notes

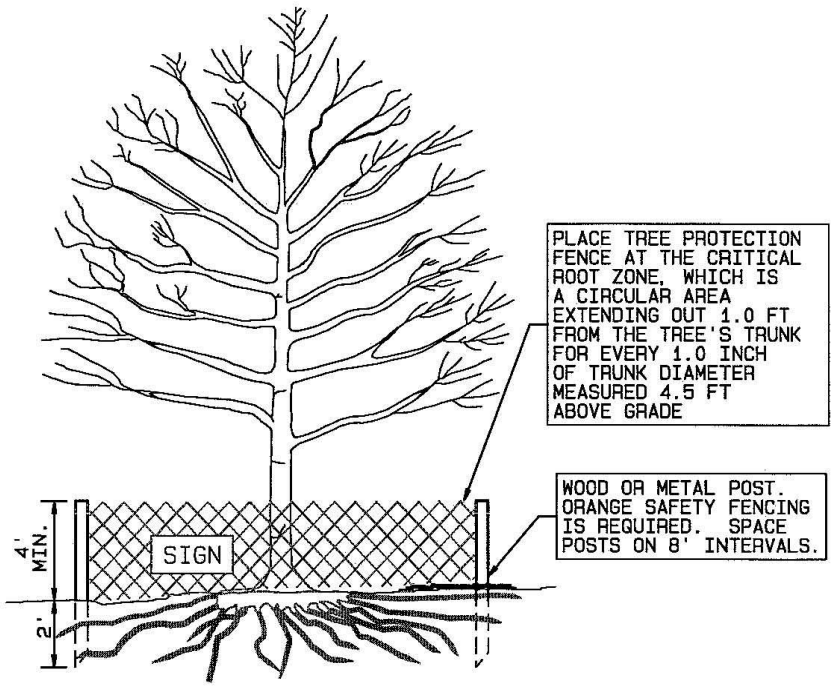
Tree Conservation Notes:

1. Contact the Planning Director to schedule a pre-construction meeting before any tree disturbance, except as noted in Sec. 30-4-26.3(C)(5), occurs on this site.

2. All tree conservation devices must be installed before inspection by the Planning Director and before any tree disturbance activities, except as noted in Sec. 30-4-26.3(C)(5), occur.

3. Removal of or damage to trees in the tree conservation area will be subject to all available remedies and penalties under the city's development ordinance.

4. No parking, storage, dirt stockpiling, concrete washout or any other activities is permitted in the tree conservation area.



NOTES:

1. *SEE PLANS FOR LOCATION OF ALL TREE PROTECTION FENCES.*
2. *ALL TREE PROTECTION DEVICES MUST BE INSTALLED PRIOR TO LAND DISTURBANCE, INCLUDING THE CUTTING OF ANY TREES, AND MUST BE INSPECTED BY THE URBAN FORESTER OR HIS DESIGNEE.*
3. *NO GRADING, TRENCHING, FILLING OR STORING OF MATERIALS IS TO OCCUR IN THE TREE PROTECTION AREA.*
4. *TREE PROTECTION FENCE MAY NOT BE REMOVED WITHOUT THE APPROVAL OF THE URBAN FORESTER OR HIS DESIGNEE.*
5. *THE TREE CONSERVATION AREA SHOULD BE DESIGNATED WITH "TREE CONSERVATION AREA" SIGNS POSTED VISIBLY ON THE OUTSIDE OF THE FENCED-IN AREA. SIGNS MAY NOT BE POSTED ON THE TREES. SEE EXAMPLE BELOW.*

TREE CONSERVATION AREA

ZONA DE CONSERVACION DE ARBOL

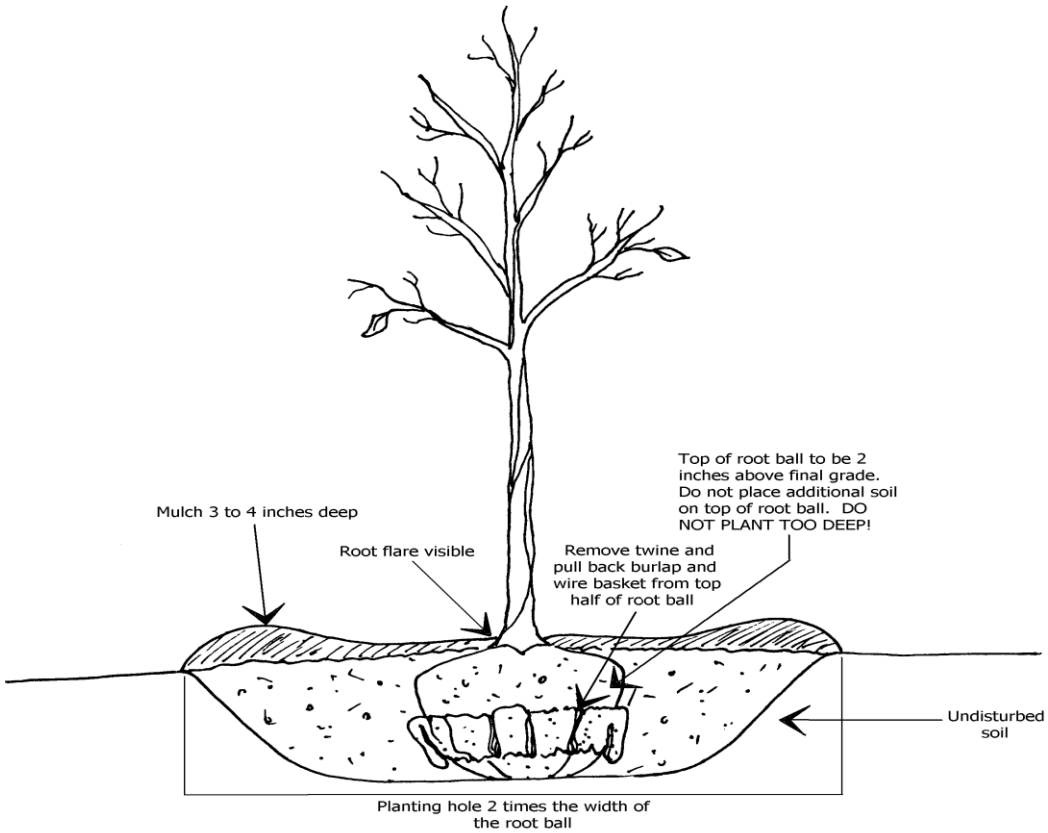
EXAMPLE SIGN

16" X 12" SIGN
1" BLOCK LETTERS
BLACK LETTERS ON WHITE BACKGROUND
1/4" BLACK BORDER
ALL WEATHER MEDIA
100' SUGGESTED SPACING BETWEEN SIGNS

C I T Y O F G R E E N S B O R O

STANDARD TREE PROTECTION DETAIL	STD. NO.	REV.
	448	03-08 06-08 03-10

* DIGITAL FILE 15 Apr 2008
G:\Standard Drawings\Roadway\COG448.pro



NOTES:

1. *ALL TREES ARE TO BE NURSERY GROWN AND LOCALLY ADAPTED, BALL AND BURLAP (B&B) PREFERRED. MINIMUM TREE SIZE IS 2" CALIPER*
2. *REMOVE ALL TREATED OR PLASTIC-COATED BURLAP, STRAPPING, WIRE OR TWINE FROM ROOT BALL.*
3. *FOR CONTAINER GROWN TREES, CAREFULLY REMOVE THE PLANT FROM THE CONTAINER AND CUT ANY MATTED OR CIRCLING ROOTS.*
4. *WATER TREE AFTER PLANTING. FOR MULCH, USE PINE NEEDLES OR SEASONED MULCH AND USE NO MORE THAN 3 TO 4 INCHES DEEP.*
5. *TREE WRAP IS OPTIONAL.*
6. *STAKING IS OPTIONAL. RUBBER HOSE AND ROPE OR WIRE FOR STAKING IS NOT RECOMMENDED. 3/4" NYLON STRAP OR TREE BRACE STRAP IS PREFERRED. STAKING SHOULD BE REMOVED AFTER ONE GROWING SEASON.*

C I T Y O F G R E E N S B O R O

	STD. NO.	REV.
STANDARD TREE PLANTING DETAIL		

Example Planting Rate Chart

PLANT LIST				
Quantity	Symbol	Description	Size	Height
18		Existing Trees	NA	NA
9		Shumard Oak	2"	8'
5		Crape Myrtle	2"	4'
80		Nellie Stevens	3 gallon	18"

City of Greensboro
North Carolina

TREE DISTURBANCE PERMIT APPLICATION

Tree Disturbance Permit is an official authorization which shall be issued by the City simultaneous to the issuance of a grading permit and prior to any tree disturbing activities. Tree disturbing activities include cutting and/or damage to the Critical Root Zone of live trees four (4) inches DBH or greater on sites not accompanied by a development plan, except as stated in 30-12-1.3 (Exemptions).

Date:

Applicant Information

Name:

Business Name:

Address:

Telephone:

E-Mail:

Property Owner Information

Name:

Business Name:

Address:

Telephone:

E-Mail:

Property Information

Address or Location:

Size (Ac.):

Area of Disturbance (Ac.):

(Property Information Cont.)

Zoning:

Current Land Use:

Watershed:

Watershed Critical Area:

General Watershed Area:

Stream Buffer Requirements:

SCOD Overlay District Requirements:

NCO Overlay District Requirements:

PED Overlay District requirements:

Tree Conservation and/or Landscape Plan (To be completed by the Urban Forester/Enforcement Officer)

I, the undersigned, verify that the above information is accurate to the best of my knowledge. I also understand that the Land Disturbance Permit is an official authorization by the City, valid for one year, to perform the work listed above. I also understand that failure to disclose additional land disturbing activities will render this Permit null and void and that civil penalties may be assessed as provided in Section 30-5-5.5 of the City of Greensboro Development Ordinance. Further, I have read and fully understand the requirements and obligations of the approved plan, listed above, and agree to comply with all terms and provisions contained therein.

_____ _____

Signature of Applicant Owner Date

_____ _____

Signature of Property Owner Date

I have reviewed this application and found it to be complete and in compliance with the provisions of Section 30-4-26.3 of the City of Greensboro Development Ordinance and therefore, by my signature below do hereby authorize the work described in the approved plan listed above.

_____ _____

Signature of the Urban Forester/Enforcement Officer Date