

PROPOSED AGENDA

Meeting of the Town of Biltmore Forest  
Planning Commission

To be held Tuesday, October 25, 2022 at 5:30 p.m.

***MEETING OPEN TO THE PUBLIC***

*Viewing Options via Zoom available at Bottom of Page*

- A. Roll Call for Attendance
  - B. Approval of Minutes – September 27, 2022 Meeting
  - C. Tree Ordinances - Discussion
  - D. Adjourn
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<https://us02web.zoom.us/j/83015148121?pwd=aG12eDZFU2RFSWx2Q09NOFFLMFAwQT09>

Meeting ID: 830 1514 8121  
Passcode: 226922

## Planning Commission Meeting Minutes

September 27, 2022

5:30pm

Roll call was taken by Chairman Paul Zimmerman. Those in attendance are Chairman Paul Zimmerman, Mr. Michael Flynn, Mr. Tony Saponaro, Mr. Jonathan Kanipe, Mr. Billy Clarke, Mr. Harry Buckner, and Mr. Mike Dale. A quorum was present for the meeting.

Mr. Zimmerman started the meeting at 5:30pm.

Mr. Zimmerman asked for approval of the minutes from the August 23, 2022 meeting. Mr. Zimmerman had a change and said he would like to clarify that he read through the “Board of Adjustment minutes” to be restated to say he read through the 2014-2019 minutes. The next change was at the end regarding the Biltmore Forest lots which will be edited to the correct language given by Mr. Zimmerman. Mr. Flynn also had a change to the minutes and would like to see, Mr. Flynn asked what the procedure is for the Planning Commission role to “consider” rather than stating “verify.” A motion was made by Mr. Tony Saponaro to approve the minutes as amended. The motion was seconded by Mr. Michael Flynn and unanimously approved.

Mr. Billy Clarke gave the board members a copy of the North Carolina General Statutes regarding Planning Boards. Mr. Clarke said they are doing a good job and doing what they are supposed to be doing.

Mr. Zimmerman asked to discuss roof coverage. This is a change from the way the Town has done this in the past but is the same rules, while introducing some mathematics. Mr. Zimmerman said the roof coverage ordinance is straightforward. Mr. Zimmerman asked the Commission if there was interest in crafting an ordinance that has the acreage broken down into 1/10 acres up to two acres. Mr. Zimmerman showed the Board a chart of the breakdown. Mr. Zimmerman asked for feedback on this. Mr. Clarke said the questions should be asked of why we have a limit on roof coverage. Mr.

Zimmerman used 24 Browntown as an example. Mr. Clarke asked if we have an issue with too little impervious surface on lots in the Town. Impervious surface coverage and maximum roof coverage were discussed.

Mr. Buckner said regarding stormwater issues and impervious surface, if one is interested in regulating runoff, an ordinance that mandated some pre-construction versus post-construction flow will get to the stormwater issue better than a blanket impervious area issue. Mr. Mike Dale said the roof coverage is more related to aesthetics where impervious coverage is more directly related to stormwater. Mr. Dale also said regulating the impervious surface coverage is going to have an effect on stormwater. Mr. Dale encouraged the Board to look at the stormwater ordinances from different areas throughout the State. Mr. Dale said Black Mountain has it down to the residential level where most of the Biltmore Forest ordinances are at a commercial level. Black Mountain is based on the amount of impervious surface on the lot. Mr. Zimmerman asked Mr. Kanipe if the Board could get a copy of what Black Mountain's policy says.

Mr. Drew Stephens supported the conversation deciding what is impervious and what is not.

The next topic of discussion was Tree Protection. Mr. Zimmerman reached out to Public Works to ask if he could tag along when they do a tree inspection. Mr. Zimmerman encouraged Board members to discuss the tree inspection process with Mr. Buckner and Mr. Dale and see what they do when they are implementing this Ordinance. Mr. Zimmerman also asked Mr. Kanipe about buffer screening and landscape Ordinances. Mr. Kanipe said the Tree Protection Ordinance within Chapter 93 is in the Town Code of Ordinances. It is a land use but not it is not in the Zoning Ordinance. The buffering, landscape/screening ordinance is geared to a non-conforming use which are the commercial areas around Hendersonville Road and the houses that abut them. Mr. Kanipe included a PowerPoint presentation which Mr. Mike Dale attended a conference for and describes what Tree Protection Ordinances are versus what Tree Preservation Ordinances are.

Mr. Saponaro advocated for the Board to consider separating and breaking apart the Tree Ordinances. We should also focus on different types of residency and lot sizes.

Mr. Saponaro also discussed streamlining the approval process for projects at Board of Adjustment meetings. Mr. Saponaro suggested a less complicated process for approving projects if a

resident doesn't require a variance at all. He also discussed a preliminary and final landscape plan. Also, a grading plan would be helpful.

Mr. Zimmerman said Pinehurst has a series of tree diagrams in their Tree Ordinance. They specifically call out the areas near the road and around the property.

Mr. Dale explained the Tree City USA recognition program and said the Town of Biltmore Forest meets the guidelines to achieve this.

Ms. Barnes suggested having something written as a buffering plan would be appreciated when presenting to the Board of Adjustment with a Special Use Permit.

Mr. Saponaro moved to have the meeting adjourned, Mr. Flynn seconded the motion and was unanimously approved.

Mr. Zimmerman adjourned the meeting at 6:45 pm.

The next meeting is scheduled for Tuesday, September 27, 2022 at 5:30pm.

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Ms. Laura Jacobs, Town Clerk

Town Clerk

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Mr. Paul Zimmerman

Chair

# PLANNING COMMISSION STAFF MEMORANDUM

October 25, 2022



## Agenda Item - C

### Tree Ordinances

### Review Other Local Government Tree Ordinances

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#### Background

Last month, the Planning Commission discussed the Town's Tree Protection Ordinance and its existence within the Town's Code of Ordinances. Discussion ensued regarding other local government tree protection ordinances and whether the Town's ordinance could be more appropriately included within the Zoning Ordinance.

#### Information Requested

The members of the Planning Commission requested information from other local government jurisdictions that have established tree related ordinances. Specifically, Chair Paul Zimmerman requested that ordinances from the Cities of Asheville and Winston-Salem, Town of Chapel Hill, and Village of Pinehurst be provided to the Commission members. In addition to specific tree preservation or canopy requirements, I have also provided additional guidelines where applicable (Asheville and Winston-Salem) related to new development tree preservation, and the Village of Pinehurst's regulations regarding buffering and screening.

#### Action Items

Mr. Zimmerman has asked that this meeting be devoted solely to the Town's tree protection and preservation ordinance and the evaluation of other local government ordinances. The Commission will discuss these ordinances and what is agreeable or disagreeable, and other thoughts regarding these ordinances and the Town's ordinance.

#### Attachments

1. Tree Preservation Ordinances and Related Ordinances – City of Asheville; Town of Chapel Hill; Village of Pinehurst; and City of Winston-Salem

City of Asheville General Code of Ordinances for Trees

Notes

- 1 Editor's note(s)**—  
Ord. No. 2378, § 1, adopted June 10, 1997, repealed Ch. 20, in its entirety, which pertained to trees. Said section also enacted provisions designated as a new Ch. 20 to read as herein set out. See the Code Comparative Table.  
Cross reference(s)— Asheville Tree/Greenway Commission, § 2-156; buildings and building regulations, ch. 4; cemeteries, ch. 6; historic preservation, ch. 8; parks and recreation, ch. 12; soil erosion and sedimentation control, ch. 14; subdivisions, ch. 17; zoning, app. A.  
State law reference(s)— Damages for unlawful cutting, removal or burning of trees, G.S. 1-539.1; cutting timber on town watershed, G.S. 14-383; permit required for planting or removal of trees on state highway, G.S. 136-93; designation of official state tree, G.S. 145-3.

## ARTICLE I. GENERAL

### Sec. 20-1. Purpose and intent.

The City of Asheville, realizing that trees have a profound effect on the quality of life in the community, deems it necessary and desirable in the interest of public health, safety and welfare to enact an ordinance for the preservation, planting, replacement and removal of trees without denying the reasonable use and enjoyment of real property.

The purpose of this chapter is to regulate the planting of new trees and shrubbery; to vigorously encourage the protection of existing trees and shrubbery, including their root systems; to regulate the preservation, replacement and indiscriminate removal of trees and to establish procedures for fulfilling these purposes.

(Ord. No. 2378, § 1, 6-1-97)

### Sec. 20-2. Applicability.

The terms and provisions of this chapter shall apply to all city property, as well as to private property in the manner specifically described herein.

(Ord. No. 2378, § 1, 6-1-97)

### Sec. 20-3. Urban forestry commission.

The city council may establish an Urban Forestry Commission, made up of citizen volunteers.

The commission may request information on trees located on city property and shall receive in a timely fashion, reports from the director of public works. The commission shall receive regular reports from city staff on landscaping and buffering plans for new developments and alterations to existing developments.

The commission shall consist of seven members appointed by city council to staggered three-year terms. In addition to the seven members appointed by city council, the executive director of Quality Forward, a representative of Progress Energy, and a representative of the Metropolitan Sewerage District shall serve as ex-officio voting members of the commission. Additionally, the director of public works may appoint ex-officio non-voting members.

The commission shall select annually from among its members a chair and vice-chair.

All appointed members shall serve a term of three years. Vacancies resulting from resignation or from a member's failure to attend the required number of meetings shall be filled by city council for the unexpired term upon request by the chairperson.

The commission shall formulate and adopt rules of procedure under which it will operate.

Any and all references to the "Tree Commission" or the "Asheville Tree Commission" elsewhere in the City Code shall be understood to refer to the Urban Forestry Commission.

(Ord. No. 2378, § 1, 6-1-97; Ord. No. 3158, § 1, 9-14-04; Ord. No. 4781, § 2, 11-26-19)

### Sec. 20-4. Definitions

As used in this chapter unless the context otherwise requires, the words listed below shall have the following meaning:

*Caliper*: Diameter measurement of the trunk taken six inches above ground level for trees up to and including four-inch-caliper size. Measurements shall be taken 12 inches above the ground for larger tree.

*City*: The City of Asheville, North Carolina.

*City attorney*: The City Attorney for the City of Asheville or his/her designee.

*City property*: All real property which is owned or leased by the city or which is maintained by it or any part of any city right-of-way.

*Diseased tree:* A process in which fungi, bacteria, mycoplasmas, and viruses are able to invade and infect trees causing poor growth and weak appearance, disruption of plant processes, distortion of certain tree parts and strain or death of the tree.

*DBH (diameter breast height):* The diameter of a tree four and one-half feet above the average ground level.

*Drip line:* A vertical line running through the outermost portions of the tree crown extending to the ground.

*Engineering director:* The head of the City of Asheville Engineering Department or his/her designee.

*Frontage strip:* A continuous planting strip, exclusive of access driveways, abutting a public street.

*Guidelines:* Guidelines and Specifications of Tree Planting on Public and Private Property, published by the planning and development department.

*Historic tree:* A tree that has been specifically designated by the Asheville City Council as historic.

*Impervious cover:* Building and structure footprints, areas of pavement, compacted gravel or other compacted areas which by their dense nature do not allow the passage of sufficient oxygen and moisture to support and sustain healthy root growth.

*Large maturing tree:* Any tree whose height exceeds 35 feet at maturity.

*Maintenance:* Proper cultural practices including pruning, fertilization, pest management, and root system protection. The standards of maintenance are those published by the National Arborists Association.

*Parks and recreation director:* The head of the City of Asheville Parks and Recreation Department or his/her designee.

*Paved area:* Any ground surface covered with concrete, asphalt, stone, compacted gravel, brick or other paving material.

*Person:* A public or private individual, corporation, company, firm, association, trust, estate, commission, board, public or private institution, utility cooperative or other legal entity.

*Planning and development director:* The head of the City of Asheville Planning and Development Department or his/her designee.

*Preservation:* Maintaining a stable environment among mature trees is critical in delaying the transition from maturity to decline and death. (Prevention of construction damage, root system care, proper tree care maintenance, etc.) Tree care preservation should be proactive and then reactive. Treatments should be preventative rather than remedial to maintain tree health once tree decline begins. The periodic inspection of trees for structural defects such as root system damage.

*Private property:* Property that is not owned by a federal, state or local government.

*Public works director:* The head of the City of Asheville Public Works Department or his/her designee.

*Regulated tree:* Trees which are located on private property and are listed as the champion or co-champion of its species, either on the "National Big Tree List" as compiled by the American Forestry Association or the "Champion Big Trees of North Carolina" as compiled by the North Carolina Division of Forestry Resources.

*Replacement:* Replacement of dead, dying, diseased, or removed trees with trees of equal or comparable size, species, vigor and health.

*Removal:* The cutting down of any tree or shrubbery and all other acts which cause the actual removal or the effective removal through damaging, poisoning or other direct or indirect actions resulting in the death of a tree or shrubbery.

*Root protection zone:* Generally, 18 to 24 inches deep and a radius distance from the trunk of the tree equal to one foot for each one inch of trunk diameter or the outermost drip line of the tree, whichever is greater.

*Small maturing tree:* Any tree whose height is less than 35 feet at maturity.

*Topping:* Any pruning practice that results in pruning back the main leader stem of the tree or causes disfigurement of the normal shape of the tree.

*Tree evaluation formula:* A formula for determining the value of ornamental trees and shrubs as published by the International Society of Arboriculture.

*Unsafe tree:* For a tree to be considered unsafe, one of the following criteria must apply:

- (1) A combination of a structural defect and a target.
  - a. A structural defect which predisposes the tree to failure; i.e., dead tree, trunk decay, dead branches, V-crotches; and
  - b. A target such as a structure, road, walkway, campsite or other area where property exists or people reside. In urban areas, target areas are almost always in close proximity to trees; or
- (2) A tree that is otherwise structurally sound trees but which interfere with the routine activities of people. Interferences include obstructions, sight distance problems for motorists, buckling of sidewalks, attracting lightning, or interference with utilities.



(Ord. No. 2378, § 1, 6-1-97; Ord. No. 2411, § 1(a), 10-14-97)

#### **Sec. 20-5. Administration.**

- (a) *Public works director.* For the purpose of carrying out the provisions of this chapter, the public works director shall have responsibility and control over all trees and shrubbery planted or growing in or upon city property. The public works director shall also have responsibility and control over all regulated trees, unsafe and diseased trees located upon private property.
- (b) *Planning and development director.*
- (1) The parks and recreation director shall be responsible for formulating a Master Street Tree Plan (MSTP). The MSTP shall specify the species for tree planting. The MSTP shall also identify all regulated trees by type and location that have been specifically designated by the Asheville City Council as historic trees. Prior to its publication, the MSTP shall be presented to the commission for review and recommendation and for adoption by city council. From and after the effective date of the MSTP or any amendments thereof, the MSTP shall govern the species of trees to be planted. In developing the MSTP, consideration shall be given to the existing and future utility and environmental factors in recommending a specific species for each of the streets and other city property.
  - (2) The engineering director shall have prepared a document entitled, Asheville Standards Specification and Detail Manual, which shall contain the guidelines and specifications for tree planting, care, maintenance, removal and landscape design which shall be adopted by city council and used by developers, landscape architects, designers and the general public in furtherance of the requirements and intent of this chapter. The guidelines shall be reviewed at a minimum, every two years, by the parks and recreation director, engineering director, public works director, and the commission. Major revisions to the guidelines shall be approached by city council.

(Ord. No. 2378, § 1, 6-1-97; Ord. No. 2411, § 1(b), (c), 10-14-97)

#### **Sec. 20-6. Permits and review required.**

- (a) Permits shall be obtained from the public works director for all activity involving the planting, grading, removal and replacement of trees on city property except as noted herein. Permits are also hereby required for all removal and replacement of regulated trees and historic trees.
- (b) The public works director shall review all requests for permits for the planting, grading, removal and replacement of trees and shrubbery on city property and the removal and replacement of regulated and historic trees. If the planting, grading, removal or replacement complies with the guidelines, the public works director shall issue a permit and may attach reasonable conditions to the permit. If the plans do not comply with the guidelines, the permit shall be denied.

(Ord. No. 2378, § 1, 6-1-97)

#### **Secs. 20-7—20-20. Reserved**

## **ARTICLE II. CITY PROPERTY**

#### **Sec. 20-21. Trimming, pruning, planting and removal of trees and shrubbery.**

- (a) No person shall remove, destroy, cut, prune or otherwise treat any tree or shrubbery having its trunk upon any city property or right-of-way or contract with another person to perform such acts without first obtaining a written permit from the public works director except as herein set forth.
- (b) No person shall plant or contract with another to plant any tree or shrubbery on any city property, except as herein noted, without a permit from the public works director.
- (c) Public and private utilities shall submit written specifications for pruning, trenching or grading around trees and shrubbery on city property to the public works director for approval. A utility company shall not be required to obtain a permit for routine maintenance operations affecting trees and shrubbery having their trunks upon city property so long as such work is done in strict accordance with the specifications as approved by the public works director. A utility company is required to obtain a permit to remove any tree or shrubbery on city property. Approved written specifications shall be valid for two years, after which new specifications or a request for an additional two-year extension of the previously approved specifications must be made by the utility company.

(Ord. No. 2378, § 1, 6-1-97)

#### **Sec. 20-22. Injuring trees and shrubbery.**

- (a) No person shall place or maintain upon the ground upon any city property any compacted stone, cement or other impervious matter or substance in such a manner as may obstruct the free access of air and water to the roots of any tree or shrubbery. This provision shall not apply to paving, repairing or altering of city streets, sidewalks and other city property performed by the city.

(b) No person shall perform or contract with another to perform construction work (including the operation or storage of equipment or materials) within the drip line of any tree or shrubbery having its trunk on any city property without first obtaining a permit from the public works director.

(c) No person shall attach any object, including but not limited to, rope, wire, chain or sign, to any tree or shrubbery in or upon any city property or to the guard or stake intended for the protection of such tree or shrubbery except for the purpose of protecting it or the public.

(Ord. No. 2378, § 1, 6-1-97)

**Sec. 20-23. Planting plan required where trees and shrubbery are to be planted.**

(a) Any person subject to the provisions of Article III of this chapter desiring to plant trees and shrubbery in or upon city property or city right-of-way shall, in addition to applying for a permit, submit a planting plan or written statement in triplicate to the public works director who shall return one copy to the applicant and keep two copies on file. All planting plans upon city property shall accurately show the following:

- (1) The proposed street width, together with its subdivision of pavement, curb, and gutter, parking strip and sidewalk areas, to a definite indicated scale.
- (2) The location of underground and overhead utilities, all poles and posts, to a definite indicated scale.
- (3) The proposed location of each and every proposed tree and shrubbery, together with the location of each existing tree, shrubbery, plant, or vine within the proposed street right-of-way in scaled relation to the other features to the plan.
- (4) The variety, height and caliper, where applicable, of each and every tree and shrubbery proposed to be planted and of those already existing within the proposed street lines, either indicated on the plan or referenced with a number to a key list.
- (5) The distance in feet between the tree and shrubbery in any one row.
- (6) The nature of the soil in the planting space to a depth of three feet and all existing and proposed surface and subsurface drainage system.

(b) All written statements filed in lieu of a planting plan shall contain the same information required on the planting plan except in the case of persons not involved in planned development and desires to perform small scale landscape plantings on city property. In such a case, a simple letter of intent outlining the location, method and materials, may be substituted.

(Ord. No. 2378, § 1, 6-1-97)

**Sec. 20-24. Trees and shrubbery abutting city property to be kept trimmed; responsibility of owner.**

(a) Trees, shrubbery, flowers, bushes or vines standing in or upon any lot or land abutting city property and having branches, limbs, trunks, or other parts projecting onto city property shall be maintained by the owner of the property on which such trees, shrubbery, flowers, bushes or vines are growing so as not to interfere with the free and safe passage along the city right-of-way by pedestrians and vehicular traffic.

(b) If the owner of such property does not keep this growth from projecting onto city property, the public works director may order its removal. The order shall be in writing to the owner and shall be acted upon within 30 days from the time of the receipt of the order. If, after 30 days, the owner has not responded or acted to remove the projecting growth from such trees or plants, then the public works director may enter upon the private property to perform the work necessary to correct the condition and bill the owner for the actual costs incurred. In situations deemed by the public works director to constitute an imminent threat to the public health, safety or welfare, the public works director may act without prior notification to the property owner.

(Ord. No. 2378, § 1, 6-1-97)

**Secs. 20-25—20-41. Reserved.**

**ARTICLE III. PRIVATE PROPERTY**

**Sec. 20-42. Removal of regulated and historic trees.**

The public works director may prohibit the removal of a regulated tree or a tree that has been designated by the Asheville City Council as historic. The following factor(s) may be a basis upon which the public works director may deny a permit to remove a regulated tree: (1) there exist no current plan to develop the property; (2) the planned development can be constructed without removing the regulating tree; (3) the purpose for removal can be accomplished with less drastic results; (4) the health of the tree; (5) the proposal for replacement of the regulated tree; and (6) any other factors reasonably related to the tree. The public works director may attach reasonable conditions to the removal. The owner may appeal the director's decision in accordance with section 20-53 of this chapter.

(Ord. No. 2378, § 1, 6-1-97)

#### **Sec. 20-43. Utility responsibility.**

Public and private utility companies which install overhead and underground utilities (including CATV) shall be required to accomplish all work affecting trees and shrubbery located on such private property in accordance with the applicability of this chapter.

(Ord. No. 2378, § 1, 6-1-97)

#### **Sec. 20-44. Unsafe trees.**

(a) The public works director may cause or order to be removed any tree or part thereof on private property which is unsafe, injurious to the public welfare or which, by reason of its nature, is injurious to sewers or other public improvements or is infested with an injurious fungus, insect or other pest.

(b) The public works director may enter upon private property in the city to spray, or otherwise treat or cause or order to be sprayed or otherwise treated, any tree infested or infested by any parasite, insect or pest when it shall be necessary to do so to prevent the breeding or scattering of any parasite or animal pest and to prevent danger therefrom to persons or property or to trees planted on city property.

(c) Whenever, in the opinion of the public works director, the removal of a tree or shrubbery on private property shall be necessary, under the provisions of this section, the public works director shall have the power to remove such tree or shrubbery or cause or order the same to be done upon notice and an opportunity to be heard to the property owner.

(d) Prior to exercising the authority conferred by this section, the public works director shall give the owner notice and an opportunity to correct the condition by requesting that corrective action be taken. The request shall be in writing to the owner of the property in question and shall be acted upon within 30 days (or a lesser period of time if an imminent threat to life or property exists, from the date of the receipt of the request.) If, after 30 days or such less time period, the owner has not corrected the condition or undertaken action that would lead to a timely correction of the condition, the public works director may enter upon the property, perform the work necessary to correct the condition and bill the owner for the actual costs incurred. In situations involving an imminent threat to the public health, safety or welfare, the city may act without prior notification to the property owner but notice shall be given within a reasonable period thereafter.

(Ord. No. 2378, § 1, 6-1-97)

#### **Secs. 20-45—20-51. Reserved.**

### **ARTICLE IV. INSPECTION, ENFORCEMENT AND APPEAL**

#### **Sec. 20-52. Inspection of sites.**

(a) The public works director and the director of planning and development may periodically inspect areas subject to the provisions of this chapter.

(b) If through inspection it is determined that a person has failed to comply or is no longer in compliance with the provisions of this chapter, a notice to comply shall be served upon that person by registered mail, returned receipt requested or by hand delivery from the public works director. The notice shall state the violation and describe that which will be necessary to comply with this chapter.

(c) The public works director may conduct such investigations as deemed reasonably necessary to carry out the duties as prescribed in this chapter and may enter at reasonable times upon private property as defined herein, for the purpose of inspecting trees and shrubbery subject to the provisions of this chapter. No person shall refuse entry or access to any authorized representative or agent of the city who request entry for the purposes of inspection and who presents appropriate credentials, nor shall any person obstruct, hamper or interfere with such representative while in the process of carrying out official duties.

(Ord. No. 2378, § 1, 6-1-97)

#### **Sec. 20-53. Enforcement.**

(a) *Notice and appeal.*

(1) Any person who violates any provision of this chapter shall be notified by the public works director of the specific violation by certified or registered mail, return receipt requested, or by hand delivery. The notice shall set forth the nature of the violation, the measures required to comply with this chapter, if compliance is at all practicable, and a reasonable time period within which compliance must be had.

(2) If any aggrieved person disagrees with a decision of the public works director, such person may request a hearing within ten working days of receipt of the violation. The request must be in writing and directed to the tree commission's secretary. The secretary shall immediately assemble an appeals board from among the membership of the tree commission. The chairperson of the Asheville Tree Commission shall always serve on the appeals board as the chairperson and shall not vote except to cast the deciding vote in case of a tie. The members to sit on the board shall be selected on a rotating basis. The owner shall have the right to be

represented by counsel, examine and cross examine witnesses at said hearing. The city attorney shall serve as the appeals board's legal advisor during said hearing. The appeals board shall render its written decision within 30 days after the hearing.

(3) The appeals board may modify, amend or revise the decision appealed from. The decision of the appeals board shall be served upon the appealing party by registered or certified mail, return receipt requested, or by hand delivery.

(4) If any aggrieved party is dissatisfied with the decision of the appeals board, an appeal may be taken to the Buncombe County Superior Court. Notice of the appeal must be filed within ten working days of receipt of the appeals board's decision. The parties may stipulate that the appeal to the Buncombe County Superior Court shall be a review of the record only. In the absence of a mutual stipulation, the review shall be de novo.

(5) Any aggrieved party may request an injunction to preserve the status quo during the pendency of any appeal in accordance with applicable North Carolina law.

(b) *Civil penalty.* Any person who violates any of the provisions of this chapter shall be subject to a civil penalty. The amount of the civil penalty shall be \$100.00 except as hereinafter provided. Each day of a continuing violation shall constitute a separate violation. The appeals board shall determine and assess the civil penalty, if any, at the time of the appeals hearing, if one is requested. In the absence of an appeal, the public works director shall submit a request to the chairperson of the appeals board who shall assemble the appeals board and assess the civil penalty with supporting documentation upon prior notice to the violating party of the date and time of the appeals board hearing. At least ten days notice shall be given to the violating party of the date, time and location whereby the appeals board will consider the request to assess a civil penalty. In determining the amount of the civil penalty, the appeals board shall take into consideration the amount of money that the violator would be required to spend in order to be in compliance with the provisions of this chapter, the amount of money saved by the violator in violating the ordinance, the cost of replacement of any removed tree, shrubbery or regulated tree. In determining the specific amount of the civil penalty for damage or destruction to regulated trees, the appeals board shall use the standard tree evaluation formula provided by the International Society of Arboriculture, as it may be amended from time to time. The standard tree evaluation formula is made a part of this chapter and adopted herein by reference. The appeals board shall have no discretion to vary the cost figures set forth in the formula. The appeals board may however, recommend that the amount of the civil penalty be modified as part of a negotiated settlement with the city. Upon failure of the violator to pay the assessed penalty or reach an equitable settlement within 30 days, an action in the nature of debt in the name of the city in the appropriate division of the general courts of justice may be instituted by the city attorney for recovery of a debt.

(c) *Criminal penalty.* A violation of this Chapter subjects the offender to a civil penalty, pursuant to the authority granted by N.C. Gen. Stat. sec. 160A-175, and does not subject the offender to the criminal penalty provisions of N.C. Gen. Stat. sec. 14-4.

(d) *Injunctive relief.* Whenever there exists reasonable cause to believe that any person is violating this chapter or any standards adopted pursuant to this chapter or any term, condition or provision of an approved permit, the city may, either before or after the institution of any other action or proceeding authorized by this chapter, institute a civil action in the name of the city for a mandatory or prohibitory injunction and an order of abatement demanding the violator to correct the unlawful condition upon or cease the unlawful use of the property.

(Ord. No. 2378, § 1, 6-1-97)

City of Asheville Ordinance Tree Canopy Preservation  
*Amended 2020 - New Development*

## ARTICLE XIX. TREE CANOPY PRESERVATION.

### Sec. 7-19-1. Applicability.

The requirements of this article shall apply to any of the following development activities:

- (1) *Single family residential.*
  - a. Any major or minor subdivision of land.
  - b. Removal of trees within any steep slope zone or an aquatic buffer.
- (2) *Multifamily residential and non-residential.*
  - a. Any major or minor subdivision of land.
  - b. New building construction.
  - c. New open uses of land.
  - d. Expansion of existing buildings by over 1,500 square feet.
  - e. Expansion of open uses of land by over 3,000 square feet.

(Ord. No. 4824, § 1h, 9-8-20)

### Sec. 7-19-2. Tree canopy preservation requirements.

- (a) The tree canopy on a development site shall meet the applicable standards according to the site's Resource Management Overlay District, proposed land use, and the amount of tree canopy preservation, as set forth in Tables 7-19.1, 7-19.2 and 7-19.3 below. (Percentages refer to the relation of tree canopy requirement to gross site area in square feet.)
- (b) Residential subdivisions and multi-lot commercial developments may group trees in clusters throughout the development rather than meeting the canopy requirements on a lot-by-lot basis.
- (c) Trees preserved to satisfy the planting requirements of section 7-11-3 shall be permitted to satisfy the requirements of this section when such trees are existing wholly on the property and not within the public right-of-way.
- (d) All trees used to meet requirements must be healthy, non-hazardous and non-invasive.
- (e) Areas designated as tree canopy protection areas shall remain as such in perpetuity. Tree removal shall be prohibited in these areas unless otherwise permitted.
- (f) Excluded areas: Tree canopy protection areas shall not include any of the following:
  - (1) Drainage easements;
  - (2) Cross access easements;
  - (3) Governmental and utility easements that prohibit trees;
  - (4) Any easement authorizing tree disturbing activities;
  - (5) Areas devoted to future transportation (including greenways) and/or stormwater infrastructure.
- (g) No structures or improvements are permitted to be installed within designated tree canopy preservation areas.

<b>Table 7-19.1 - Tree Canopy Requirement Classification</b>			
<b>Land Use</b>	<b>Resource Management District</b>		
	<b>Downtown</b>	<b>Urban</b>	<b>Suburban</b>
<b>Table 7-19.1 - Tree Canopy Requirement Classification</b>			
<b>Land Use</b>	<b>Resource Management District</b>		
	<b>Downtown</b>	<b>Urban</b>	<b>Suburban</b>
Residential Subdivision	Class A	Class C	Class C
Multi-Family & Office	Class A	Class B	Class C
Institutional	Class A	Class C	Class C
Commercial	Class A	Class B	Class C

Industrial	Class A	Class B	Class C
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**Table 7-19.2 - Class Based Canopy Requirement, Classes A & B\***

<b>Canopy Requirement Class</b>	<b>Existing Tree Canopy Preserved</b>	<b>New Tree Canopy Installation Required</b>	<b>Total Tree Canopy Required</b>
<b>Table 7-19.2 - Class Based Canopy Requirement, Classes A &amp; B*</b>			
<b>Canopy Requirement Class</b>	<b>Existing Tree Canopy Preserved</b>	<b>New Tree Canopy Installation Required</b>	<b>Total Tree Canopy Required</b>
Class A	5%	0%	5%
	4%	2%	6%
	3%	4%	7%
	2%	6%	8%
	1%	8%	9%
	0%	10%	10%
Class B	10%	0%	10%
	8%	3%	11%
	6%	6%	12%
	4%	9%	13%
	2%	12%	14%
	0%	15%	15%

\*Percentages not shown on this table are rounded down to the nearest whole entry.

**Table 7-19.3 - Class Based Canopy Requirement, Class C\*\*\***

<b>Canopy Requirement Class</b>	<b>Existing Tree Canopy Preservation Requirement</b>	<b>New Tree Canopy Installation Requirement</b>	<b>Total Tree Canopy Requirement</b>
<b>Table 7-19.3 - Class Based Canopy Requirement, Class C***</b>			
<b>Canopy Requirement Class</b>	<b>Existing Tree Canopy Preservation Requirement</b>	<b>New Tree Canopy Installation Requirement</b>	<b>Total Tree Canopy Requirement</b>
Class C, Sites with 76-100% existing canopy coverage	15%	0%	15%
	12%	6%	18%
	9%	12%	21%
	6%	18%	24%
	3%	24%	27%
	0%	30%	30%
Class C, Sites with 41-75% existing canopy coverage	15%	0%	15%
	12%	5%	17%
	9%	10%	19%
	6%	15%	21%
	3%	20%	23%
	0%	25%	25%

Class C, Sites with 0%-40% existing canopy coverage	15%	0%	15%
	12%	4%	16%
	9%	8%	17%
	6%	12%	18%
	3%	16%	19%
	0%**	20%	20%**

\*\*\*Percentages not shown on this table are rounded down to the nearest whole entry.

(Ord. No. 4824, § 1h, 9-8-20)

**Sec. 7-19-3. Calculation of tree canopy area.**

(a) Any development site greater than two acres in size shall be permitted to determine the area of existing tree canopy coverage to be preserved by ground checking or aerial analysis according to the most recent data provided by the city. Tree canopy calculated by aerial analysis shall be limited to that within the boundary of the subject property. If ground checking is utilized, credit for existing trees intended to be retained may be calculated in either of two ways:

- (1) Measurement of the trunk of each individual tree (i.e. a tree not grouped with other trees or a part of a tree stand) to determine its DBH and the credit given for that tree shall be in accordance with Table 7- 19.4, below; or
- (2) The dripline may be plotted on the site plan and tree canopy credit given for the square footage of the site within the dripline.

(b) For any development site two acres or less in size the area of tree canopy coverage for any group of trees to be retained in order to meet the tree canopy requirements of this Part shall be determined by ground checking. Credit for existing trees intended to be retained may be calculated in either of two ways:

- (1) Measurement of the trunk to determine its caliper and the credit given for that tree shall be in accordance with Table 7-19.4, below; or
- (2) The dripline may be plotted on the site plan and tree canopy credit given for the square footage of the site within the dripline.

(c) Trees planted within one calendar year of the date of development application shall not be included in the calculation of existing tree canopy.

(d) The calculation must be conducted and certified by a land surveyor, civil engineer, landscape architect licensed by the State of North Carolina or Arborist certified by the International Society of Arboriculture.

<b>Table 7-19.4 - Tree Canopy Credit for Preserved Trees</b>		
<b>DBH</b>	<b>Size Classification*</b>	<b>Canopy Credit</b>
<b>Table 7-19.4 - Tree Canopy Credit for Preserved Trees</b>		
<b>DBH</b>	<b>Size Classification*</b>	<b>Canopy Credit</b>
Over 10 inches	Large	1,600 sq ft
	Medium	900 sq ft
	Small	400 sq ft
3 inches to 9 inches	Large	960 sq ft
	Medium	576 sq ft
	Small	142 sq ft
1 ¼ inches to less than 3 inches	Large	720 sq ft
	Medium	432 sq ft
	Small	106 sq ft

As found in recommended species list



**Table 7-19.5 - Tree Canopy Credit for Newly Installed Trees**

<b>Size Classification*</b>	<b>Canopy Credit</b>
Large	560 sq ft
Medium	315 sq ft
Small	140 sq ft

As found in recommended species list

(Ord. No. 4824, § 1h, 9-8-20)

**Sec. 7-19-4. Documentation and plan review.**

(a) *Tree canopy protection plan.*

- (1) The tree canopy protection plan shall be drawn on a separate plan sheet in addition to all other required submissions.
- (2) The tree canopy protection plan shall show all designated tree canopy protection areas and shall identify the total site acreage as well as the protected tree canopy percentage.
- (3) The tree canopy protection plan shall show all trees on the development site.
  - a. If ground checking is utilized to calculate the tree canopy area, trees shown on the plan shall be labeled as to their diameter at breast height and species.
  - b. If aerial analysis is utilized to calculate the tree canopy area, tree canopy area shall be shown, labeled and described on the plan.
- (4) Plans shall display the following required note: Areas designated as tree canopy protection areas shall remain as such in perpetuity. Tree removal shall be prohibited in these areas unless otherwise permitted.
- (5) The approved tree canopy protection plan must be recorded with the Buncombe County Register of Deeds.
- (6) A copy of the recorded tree canopy protection plan shall be provided to the city prior to the issuance of the certificate of occupancy or certificate of compliance.

(b) *All plats for affected properties:*

- (1) TCPA shall be shown on all subdivision final plats
- (2) Plats shall display the following required note: Areas designated as tree canopy protection areas shall remain as such in perpetuity. Tree removal shall be prohibited in these areas unless otherwise permitted.

(Ord. No. 4824, § 1h, 9-8-20)

**Sec. 7-19-5. Payment in lieu of compliance.**

- (a) Payment may be made in lieu of compliance to fulfill the new tree canopy installation requirements for a site as found in Table 7-19.2 and 7-19.3.
- (b) Payments in lieu of compliance received in relation to properties within a given Resource Management Overlay District shall be used to acquire land and plant or preserve trees within that same Resource Management Overlay District.
- (c) Exclusions: Payment in lieu of compliance shall not be accepted for:
  - (1) Areas containing aquatic buffers.
  - (2) Areas defined as steep slope zone A or B as defined by section 7-12-4.
- (d) Calculation of payment amounts.
  - (1) The payment amount in lieu of planting shall be based on values listed in the current year fees and charges manual.

(Ord. No. 4824, § 1h, 9-8-20)

**Sec. 7-19-6. Permitting.**

(a) *Tree removal permits.*

- (1) A permit shall be required for the following activities

- a. The removal of any trees on properties within any steep slope zone or an aquatic buffer.
- b. The removal of any tree within an established tree canopy protection area.

(2) Fees

- a. Fees for tree removal permit applications shall be established and listed in the current year fees and charges manual.

(b) *Application requirements:*

(1) The applicant for a tree removal permit shall supply, at a minimum:

- a. A photo of the tree to be removed;
- b. A site plan showing the location of the tree to be removed;
- c. Copies of any site plans showing required tree canopy preservation area;
- d. A letter from a certified arborist recommending removal of the tree and the facts supporting that recommendation. Reasons may include but are not limited to:
  1. Trees that are dead, diseased or dying; or
  2. Trees that pose a threat to life or property safety.
- e. A replanting plan showing the installation of tree canopy equivalent to that being removed as defined by Table 7-19.4.

(2) Staff shall either approve or deny the application within ten business days.

(c) *Appeals.*

(1) Appeals of staff decisions will be conducted as detailed in section 7-6-2.

(Ord. No. 4824, § 1h, 9-8-20)

**Sec. 7-19-7. Enforcement.**

- (a) Violations of this article shall be enforced as specified in article 18 of this chapter.
- (b) A violation of section 7-19-3(4) shall be subject to a civil penalty in the amount specified in appendix B.
- (c) Remediation-replanting in addition to fines.

(1) In addition to any fines assessed, the violator shall install a new tree or trees with a canopy area equivalent to that which was removed as defined by Table 7-19.4.

(Ord. No. 4824, § 1h, 9-8-20)

## Town of Chapel Hill Tree Protection Ordinance

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## 5.7. Tree protection.

### 5.7.1 General Provisions.

- (a) *Short title.* This section shall be known and may be cited as the Chapel Hill Tree Protection Ordinance.
- (b) *Purpose.* The intent of this section is to preserve, maintain, and increase tree canopy to protect the public health, safety, and welfare and enhance the quality of life in Chapel Hill.
- (c) *Applicability and permits.* The provisions of this article apply to all land in the town's zoning jurisdiction. For tree canopy coverage standards, see section 5.7.2.
  - (1) *Activities that require a zoning compliance permit:*
    - i. All work impacting trees on lots designated for non-residential, multi-family residential, and mixed use, and
    - ii. All work impacting trees on lots designated for single- and two-family residential use where total land disturbance exceeds five thousand (5,000) square feet.
  - (2) *Activities that require review and approval by the town's urban forester:*
    - i. Private work on public land, and
    - ii. The practice of forestry as defined by North Carolina General Statute 105-277.2-.7 which is permitted only after an applicant submits a plan for harvesting and replanting consistent with the most current Forest Practices Guidelines Related to Water Quality published by the N.C. Department of Natural Resources and Community Development, or its successor agency.
- (d) *Exceptions not subject to the provisions of this article are:*
  - (1) Land in the town's Town Center and Office/Institutional-4 zoning districts, provided, however, that subsection 5.7.4 of this article shall apply;
  - (2) Routine maintenance of existing trees outside the public right-of-way, including pruning done in a manner consistent with established arboricultural standards;
  - (3) The removal of dead, severely damaged or diseased trees that have been diagnosed and, if applicable, determined by a certified arborist to be beyond treatment or recovery, the burden of proof being placed on the remover;
  - (4) Land surveying provided no trees greater than six (6) inches dbh are damaged or removed; and
  - (5) Eradication of exotic, non-native, and invasive or otherwise undesirable species listed in subsection 5.7.6(d).
- (e) *Emergency waiver.* The provisions of this section are waived if compliance would impede the rescue of life or property from immediate danger or the repair of utilities in the event of emergencies such as wind storms, ice storms, or other disasters. Any emergency work shall follow as closely as possible the standards outlined in the town's landscape standards and specifications.

### 5.7.2 Tree Canopy Coverage Standards.

- (a) *Minimum canopy coverage standards.* The town desires to maintain the maximum practical tree canopy cover across all land uses within the town's jurisdiction.

Tree canopy coverage standards are required for applications proposing tree removal that require council approval, including special use permits, and major special use permit modifications, and conditional zoning district rezonings.

For residential Neighborhood Conservation Districts, the district may request from the town council that tree protection regulations apply as per section 5.7 using a canopy coverage standard consistent with the existing neighborhood character.

When tree canopy is subject to the provisions of this section, the following minimum tree canopy coverage percentages are required within the zoning lot boundaries exclusive of public right-of-way:

Table 1: Minimum Tree Canopy Coverage Standards

Land Use	Minimum Canopy Coverage
Multi-Family Residential	30%
Commercial (Use Group C and: Business, Office; Clinic; Funeral Home, and Hotel/Motel)	30%
Institutional (Use Group B)	40%
Mixed Use, Other	40%
All Uses in Innovative, Light Industrial Conditional Zoning District (LI-CZD)	20%

(b) *Modifications to canopy coverage standards.* The town council may allow a modification to these regulations when public purposes are met and canopy removal supports other goals of the town, including but not limited to:

- Goals of the Comprehensive Plan
- LEED or "green" building and low impact development, including solar access and "daylighting"
- Affordable housing
- Stormwater management
- Community character of adjoining property, or established managed landscapes, or established streetscapes

(c) *Implementation of standards.* The highest priority for all projects shall be the maintenance and replacement of canopy on-site. Mitigation payments shall be used when providing canopy on-site is not practicable.

Compliance with canopy protection and replacement standards of subsection 5.7.2 is demonstrated by the following:

- (1) Approval and implementation of a landscape protection plan prepared in accordance with subsection 5.7.3(b).
- (2) Approval and implementation of a planting plan prepared in accordance with landscape architectural standards and the town's design manual.
- (3) Maintenance of protected and planted trees.
- (4) Tree mitigation payments as per subsection 5.7.2(d)3.

Compliance with the canopy coverage standards in Table 1 shall be accomplished by the following methods:

- (1) *Protection of existing tree canopy.* The extent of existing tree canopy coverage retained at the time of permit application may be documented by survey or by using current aerial photographs available on the town's web page or similar resource.

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- i. Required cleared active recreation areas, water bodies, access easements, public and private right-of-way, stormwater and utility easements shall not be included in the total land area used in the canopy coverage calculation.
  - ii. Trees planted in a town right-of-way as part of an approved street tree planting plan may count toward total tree canopy coverage.
- (2) *Replacement of canopy.* If the existing protected tree canopy is less than the minimum standard as shown in Table 1, the required minimum canopy shall be established. The tree canopy deficit is determined by subtracting the area of retained tree canopy as shown on the landscape protection plan from the minimum area of canopy coverage required in Table 1 in subsection 5.7.2.
- i. One (1) replacement tree per five hundred (500) square feet of tree canopy coverage deficit shall be planted in accordance with an approved planting plan.
  - ii. All canopy trees planted in accordance with the town's design manual to meet the town's buffer and parking lot shading standards can all be counted when calculating replacement canopy trees provided.
  - iii. Supplemental canopy trees planted to complete the canopy coverage requirements shall be planted no less than twenty (20) feet from any other proposed or existing canopy tree.
  - iv. Replacement trees that are planted in an adjacent right-of-way may count toward total tree canopy.
  - v. *Installation and maintenance.*

*Plantings.* All required plantings shown on an approved planting plan shall be prepared, installed and maintained according to the town's landscaping standards and specifications and must be planted or an accepted performance guarantee placed with the town in order to satisfy compliance with the requirements of this section.

    - (a) Replacement tree caliper shall be two and one-half (2.5) inches at installation.
    - (b) Upon approval by the town manager, a replacement tree with a caliper of four (4) inches or greater may count for two (2) replacement trees.

*Maintenance.* The property owner is responsible for assuring that the lot in its entirety will continue to meet minimum tree canopy coverage after issuance of a certificate of occupancy.

Trees that are damaged or decline in health during construction shall be assessed for viability and safety.

    - (a) Viable trees shall be treated to promote their continued health and safety.
    - (b) If the town manager determines a protected tree in a required buffer or other required planting is dead or dying at the time of the issuance of a certificate of occupancy, replacement of the tree may be required.
- (3) *Mitigation.* If the applicant chooses not to plant replacement canopy trees, payments to the Town of Chapel Hill Tree Mitigation Fund shall be calculated according to the current development fee schedule approved by the town council.
- (4) *Tree mitigation fund.* A primary objective of the tree mitigation fund is to use payments for the installation and maintenance of trees on public property. The town shall also use all such payments for the cost associated with implementation of this ordinance, for town sponsored tree management programs, and for the study, inventory, maintenance or treatment of public trees requiring the services of a certified arborist or other qualified consultant. Mitigation funds will not be used in lieu of general fund support for the existing urban forest management program.

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5.7.3 *Landscape Protection Plan.*

(a) *Activities requiring a landscape protection plan.*

- (1) Zoning compliance permit applications, required per subsection 5.7.1(c), shall include a landscape protection plan unless otherwise exempted.
- (2) Work limited to the removal of trees may require a landscape protection plan and shall conform to the required tree replacement and mitigation standards as described in subsection 5.7.2.

(b) *Landscape protection plan standards.*

- (1) The town manager shall prescribe the contents of landscape protection plans and the information that may be reasonably required to determine compliance with this article, with sufficient copies for necessary referrals and records. Minimum requirements for the landscape protection plan include the following information:
  - i. The size, location, and type of all existing rare and specimen trees as defined in subsection 5.7.6 within fifty (50) feet of proposed land disturbance.
  - ii. All significant trees stands, as defined in subsection 5.7.5.
  - iii. Areas where trees, vegetation, and soils are to be protected and preserved and areas where trees, vegetation, and soils are to be removed or modified. This includes indicating proposed grading, utilities, and improvements as well as access, staging, and storage areas. The plan shall graphically identify each tree to be saved or removed.
  - iv. The critical root zones (CRZ) of all existing rare and specimen trees within or overlapping the disturbed area, and the measures of tree, vegetation, and soil protection and management that will be used before, during, and after all construction activities to promote the survival or retention of such elements. The CRZ is defined as a circular area surrounding a tree, of which the center is the center of the tree trunk and which has a radius of at least one (1) foot for every inch of trunk diameter (dbh) taken at four and one-half (4.5) feet above grade.  
  
CRZ radius = diameter breast height (inches) × one (1) foot
  - v. The percentage of the property with tree canopy coverage to be protected, if subject to minimum tree canopy standards. The town manager may require that a certified arborist and/or a licensed landscape architect confirm the accuracy of this information.
  - vi. The location of tree protection fencing along the limits of disturbance with a detail of the tree protection fence and a note indicating that a pre-construction meeting with the town's urban forester will be scheduled prior to the start of work.

(c) *Implementation of landscape protection plan.*

- (1) Protective fencing. Fences, or other equally effective measures as determined by the town manager, shall be used to protect areas identified on an approved landscape protection plan during demolition and construction activity. Protective fencing shall be installed according to town standards. Field adjustments may be allowed subject to prior approval by the town manager. All land disturbing activity, storage of equipment, building material, soil, and other debris shall be kept outside the protected areas.
- (2) Landscaping activities taking place after the removal of protective fencing shall be accomplished with light machinery or hand labor and in accordance with the town's landscaping standards and specifications. This requirement should be noted on the plans.
- (3) Pre-construction conference. Prior to the commencement of any activities requiring a zoning compliance permit, a pre-construction conference with the town's urban forester or landscape

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architect shall take place to review procedures for protection and management of all protected landscape elements identified on the landscape protection plan.

- (4) On-site supervision. For all development other than that related to single-family and two-family dwellings on individual zoning lots, the following on-site supervision is required:
- i. The applicant shall designate as landscape protection supervisors one or more persons who have completed instruction in landscape protection procedures with the town.
  - ii. It shall be the duty of the landscape protection supervisor to ensure the protection of new or existing landscape elements, as defined in the landscape protection plan. The approved landscape protection supervisor shall supervise all site work to assure that development activity conforms to provisions of the approved landscape protection plan. At least one (1) identified landscape protection supervisor shall be present on the development site at all times when activity that could damage or disturb soil and adjacent landscape elements occurs such as:
    - Clearing and grubbing;
    - Any excavation, grading, trenching or moving of soil;
    - Removal, installation, or maintenance of all landscape elements and landscape protection devices; or
    - Delivery, transporting, and placement of construction materials and equipment on site.
- (d) *Public hazard.*
- (1) A certificate of occupancy may be denied for any development if the town manager determines that a public hazard as defined in this article exists on said lot, until that public hazard is abated.
  - (2) A street dedicated to the town may not be accepted for maintenance at the end of the warranty period until any public hazard related to a tree in the right-of-way is abated.
- (e) *Enforcement.*
- (1) The town manager shall have development sites inspected frequently to assure that work is conforming to the approved landscape protection plan and the applicable sections of this article.
  - (2) Absence of a landscape protection supervisor(s) from the site at times when development activity is taking place that has the potential to adversely affect trees to be preserved may result in the issuance of a stop-work order until a landscape protection supervisor is present.

#### 5.7.4. *Trees in Public Rights-of-Way.*

- (a) *Tree planting.*
- (1) Trees may be planted on any public street right-of-way provided they are consistent with plans for public landscaping that have been approved and permitted by the State of North Carolina or the Town of Chapel Hill, they will not hinder the repair or construction of public utilities and a permit has been issued by the town manager when required.
  - (2) Trees planted on any public street right-of-way may be of a species and in a location desired by the abutting property owner except that no trees or shrubs shall be planted close enough to any public street intersection to interfere with the sight distance at the intersection or with streets, sidewalks, signs, street lights, or above- and below-ground utility lines as specified in the town's landscaping standards and specifications.
  - (3) All planting of trees and shrubs on public property shall be subject to general considerations of public health, safety and convenience, and the material and aesthetic value accruing to the whole community. Planting shall be restricted to the species known to be suited to the local climate and



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environment and shall be intended to preserve and enhance the beauty and variety of the public landscape as recommended in the town's landscaping standards and specifications.

- (b) *Prohibited trees.* Notwithstanding subsection 5.7.4.a, it shall be unlawful to plant in any public right-of-way any of the following:
- (1) Any trees which by the nature of their fruit, root system, brittleness of wood, or susceptibility to disease are deemed undesirable as specified in the town's landscaping standards and specifications;
  - (2) Any invasive exotic plant materials as identified in the design manual and in subsection 5.7.6(d).
- (c) *Public hazards.*
- (1) It shall be the duty of the owner of the property wherein or whereupon a public hazard exists, to abate the hazard by removing or trimming the growth.
  - (2) Where the roots of a public tree constitute a hazard to private property, or where trees on private property may damage sidewalks, curbs, or public streets or whose roots may enter public sewers or water mains shall be considered a public hazard and shall be pruned or removed by the town's public works department, as deemed necessary by the town manager.
  - (3) If the owner of property, after being notified of the existence of a public hazard on their property, fails to abate the hazard within thirty (30) days, the town manager shall have the hazard abated and assess the exact cost to the owner as provided by law in the case of special assessments or liens.
  - (4) Where the growth and limbs of public trees constitute a hazard to private property, the town, upon notice, shall correct the condition or permit affected property owners to correct the condition using established arboricultural standards.
  - (5) Where the growth of trees interferes with public utilities, such conditions shall be corrected by proper pruning, removal, or replacement of the tree causing the interference. Corrective measures shall be carried out in accordance with the provisions of this article and the town's landscaping standards and specifications.
- (d) *Removal of trees.*
- (1) Private parties shall not remove trees from public property or public street rights-of-way without approval by the town's urban forester.
  - (2) The town may remove dead or diseased trees or trees that interfere with the proper maintenance or improvement of a public street right-of-way, easement owned or maintained by the town or any public street or highway. A tree on the right-of-way line that is half or more than halfway on the right-of-way at its base will be considered to be on the right-of-way and, therefore, a public tree.
  - (3) The town retains the right to remove any tree except that no rare tree shall be removed from land or easements owned by the town unless the town manager determines there is no reasonable way the tree can be saved.

#### 5.7.5 Significant Tree Stands.

- (a) *Significant tree stand defined.* For purposes of this section, a "Significant Tree Stand" means an area of contiguous mature woods greater than five thousand (5,000) square feet in size where over half of the canopy is provided by hardwoods with a diameter breast height (dbh) greater than twenty-four (24) inches.
- (b) *Applicability.* The provisions of this section apply to any application requiring a landscape protection plan.
- (c) *Submittal requirements.* A landscape protection plan shall delineate the boundaries of all significant tree stands and describe their dominant plant species. All plans shall also show the proposed clearing limit lines and calculate the percentage of significant tree stand areas that are proposed to be cleared.

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- (d) *Preservation of significant tree stands.* The significant tree stand delineation shall be used during the design review process to determine the most suitable and practical areas for woodland conservation. To the extent practicable, significant tree stands shall be preserved and incorporated into site design. Areas designated for preservation on approved plans shall be protected during construction.

5.7.6 *Rare and Specimen Trees.*

- (a) *Rare and specimen tree defined.* With the exception of invasive exotic species listed in subsection 5.7.6.(d),

(1) A rare tree is:

- i. Any healthy living pine tree that has a trunk diameter of thirty-six (36) inches or more, or any other species that:
- ii. Has a trunk diameter at breast height (dbh) of twenty-four (24) inches or more; or
- iii. Has a trunk dbh of twelve (12) inches or more in the case of North Carolina native species from the list of genera in this section; or
- iv. Is listed as a State or National Champion by the North Carolina Forest Service or the American Forestry Association; or
- v. Provides unique habitat for any endangered or threatened wildlife species protected by federal law; or
- vi. Has been cited by the town council as being historically significant; or
- vii. Represents an uncommon species, such as Long Leaf Pine, Live Oak, or Sequoia Redwood, that the town manager considers to be desirable and not to pose a threat to the local ecological balance.

(2) A specimen tree is:

- i. Any healthy living pine tree that has a trunk diameter of eighteen (18) inches or more, or any other species that:
- ii. Has a trunk diameter at breast height (dbh) of twelve (12) inches or more; or
- iii. A trunk dbh of six (6) inches or more in the case of the North Carolina native species from a following list of genera:

(3) North Carolina Native Genera:

Aesculus (Buckeye)  
Amelanchier (Serviceberry)  
Asimina (Pawpaw)  
Carpinus (Hornbeam)  
Cercis (Redbud)  
Chionanthus (Fringetree)  
Cornus (Dogwood)  
Crataegus (Hawthorn)  
Diospyros (Persimmon)  
Fagus (Beech)  
Halesia (Silverbell)

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Hamamelis (Witch-hazel)

Ilex (Holly)

Juniperus (Cedar)

Ostrya (Hophornbeam)

Oxydendrum (Sourwood)

Sassafras (Sassafras)

Tsuga (Hemlock)

(b) *Rare and specimen trees on developing land.*

- (1) Rare and specimen trees shall be shown on all landscape protection plans if such trees are within fifty (50) feet of areas of proposed soil disturbance or construction activity. These trees shall be identified and located by survey on the approved landscape protection plan if such trees are located on the development site or adjacent public property. The town urban forester may visit the site to determine the accuracy of identification.
- (2) Proposed development should maximize the preservation of rare and specimen trees. Flexible approaches such as adjustments to lot layout, placement of buildings and paved surfaces and location of utilities should be pursued in order to save rare and specimen trees.
- (3) Notwithstanding any provision of the Land Use Management Ordinance to the contrary, saving of a rare or specimen tree shall constitute sufficient evidence that subsections 4.12.2(a)—(e) have been met in any variance application.
- (4) No rare tree shall be removed unless the town manager determines there is no reasonable way the property can be otherwise developed, improved or properly maintained, and the tree saved.

(c) *Voluntary protection of rare trees on private land.*

- (1) Rare trees shall be protected if voluntarily registered by the property owner.
- (2) Registration of such trees shall survive transfer of ownership if language is contained in the document transferring ownership and shall extend the coverage hereof and render the owner of the lot subject to the following privileges:
  - i. The owner shall be entitled to consultation with the town urban forester concerning proper care of the tree at no charge.
  - ii. If a permitted auxiliary structure or addition to a house is being planned, notwithstanding any provision of the Land Use Management Ordinance to the contrary, saving of a rare or specimen tree shall constitute sufficient evidence that subsection 4.12.2 of the Land Use Management Ordinance has been met in any variance application.
  - iii. Subject to approval by the town manager, the voluntary listing and protection of rare trees on a site may be considered in lieu of all or a portion of the tree canopy mitigation requirements included in this section of the ordinance that may otherwise be required on that site.
- (3) Once so registered, trees may be removed from the register at a later date at the request of the property owner.

(d) *Invasive exotic species.* The following invasive exotic species are not required to be shown on proposed landscape protection plans, regardless of size. These species cannot be planted in a public right-of-way or to satisfy any town landscaping requirements and are recommended for removal and replacement, should they be identified on developing property:

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Acer platanoides (Norway Maple)  
Alianthus altissima (Tree of Heaven)  
Albizia julibrissin (Mimosa)  
Broussonetia papyrifera (Paper Mulberry)  
Melia azadarach (Chinaberry)  
Morus alba (White Mulberry)  
Paulownia tomentosa (Princess Tree)  
Populus alba (White Poplar)  
Pyrus calleryana (Callery/Bradford Pear)  
Quercus accutissima (Sawtooth Oak)  
Ulmus pumilia (Siberian Elm)

*5.7.7 Administrative Mechanisms.*

- (a) *Fees.* Reasonable fees sufficient to cover the costs of administration, inspection, appraisal, and publication of notice shall be charged to applicants for zoning compliance permits established by this article. The amount of such fees shall be fixed by the town council.
- (b) *Penalties.*
- (1) In the event that other mitigation measures contained herein are determined by the town manager to be insufficient, any act constituting a violation of this article resulting in the loss or destruction of trees may subject the landowner to a civil penalty up to one and one-half (1.5) times the monetary value of the trees removed or destroyed up to a maximum of twenty thousand dollars (\$20,000.00). For purposes of such determination, the town manager shall apply the most current formula of the council of tree and landscape appraisers, or a similar method in common use and accepted by courts of law.
  - (2) Development activity which has taken place in compliance with conditions of the zoning compliance permit issued for that activity shall establish a presumption that the property owner has met the requirements of this section. It shall be the duty of the permit holder to demonstrate that the activity was in compliance with the issued permit.
  - (3) Unless otherwise specified in this article, the Town of Chapel Hill shall enforce the provisions of this article in accordance with procedures, penalties, and remedies described in article 4 of the Land Use Management Ordinance.
- (c) *Appeals.* Unless otherwise specified in this appendix, determinations, appeals, and variances of or from provisions of this article shall be pursuant to the provisions of article 4 of this appendix.

(Ord. No. 2007-06-11/O-7, §§ 1, 2; Ord. No. 2010-12-06/O-9, § 1; Ord. No. 2017-04-05/O-7, § 15; Ord. No. 2021-05-19/O-1, § 89)

## Village of Pinehurst Buffering and Landscaping Requirements

## Section 9.5 Landscaping and Buffering Requirements

### Part 1. General Standards

#### 9.5.1. Purpose and Scope

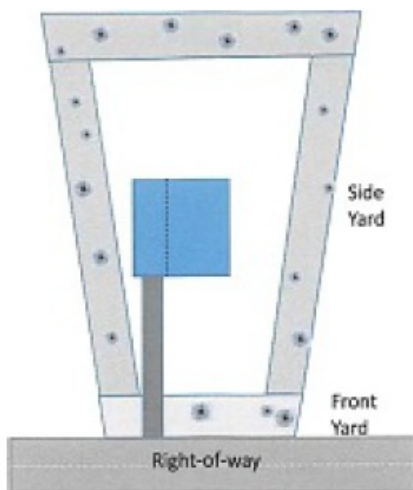
The regulations of this Section are intended to establish buffer yards associated with development activity within the Village of Pinehurst and its ETJ. Buffer yards help to moderate visual contact, create spatial separation, and minimize adverse impacts on adjacent properties resulting from development. Buffer yards also help to reduce the visual effects and the impacts of traffic, noise, dust, and odor as well as to protect the privacy of neighbors. The Village values its existing tree canopy, and these regulations also provide incentives that allow existing qualifying trees to be used as part of the buffers required by this Section. By doing so, these regulations will preserve and enhance the visual character of Village and the ETJ and lessen the impacts of the development.

(Ord. 21-06, passed - -)

#### 9.5.1.1 Buffer Yards Established

Buffer Yards: for the purposes of Sections 9.5 and 9.14.6, buffer yards are established and defined as follows. Yard lengths are based on the most interior length of the setback line.

- (A) Front Buffer: is equal to the depth of the front yard setback of the zoning district extended to the side property lines.
- (B) Rear Buffer: is equal to the depth of the rear yard setback of the zoning district extended to the side property lines.
- (C) Side Buffer: is equal to the width of the side yard setback from where it intersects both the front and the rear yard.
- (D) Side Street Buffer: is equal to the width of the side street setback from where it intersects both the front and the rear yard.



*Figure 1. Standard Lot Yards*

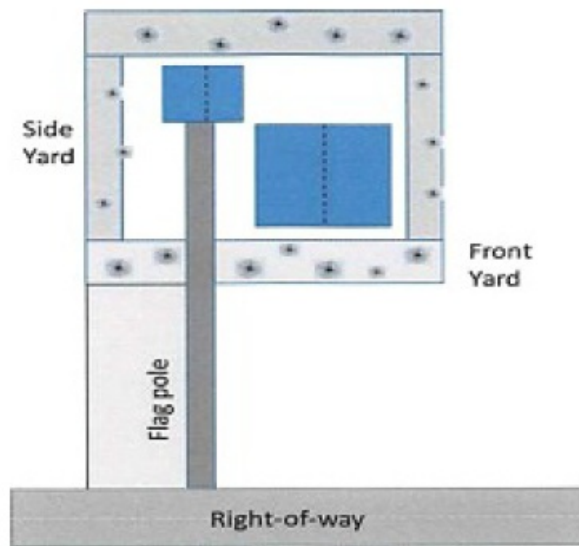


Figure 2. Flag Lot Yards

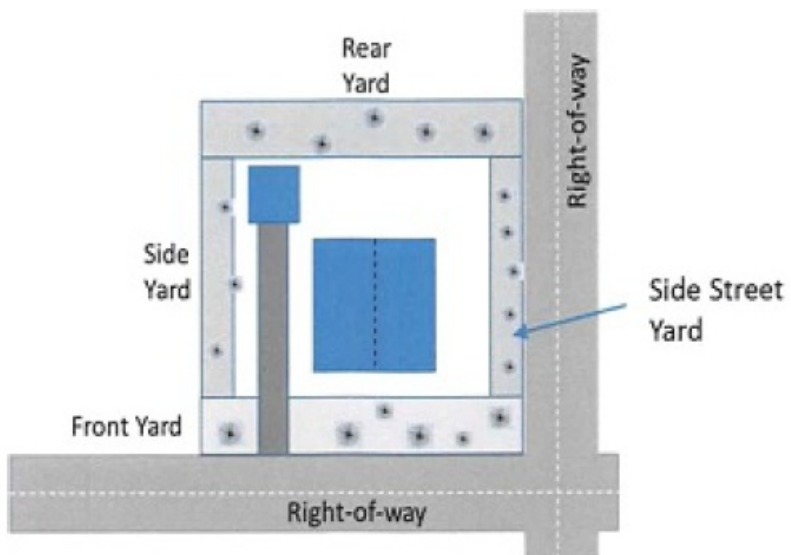
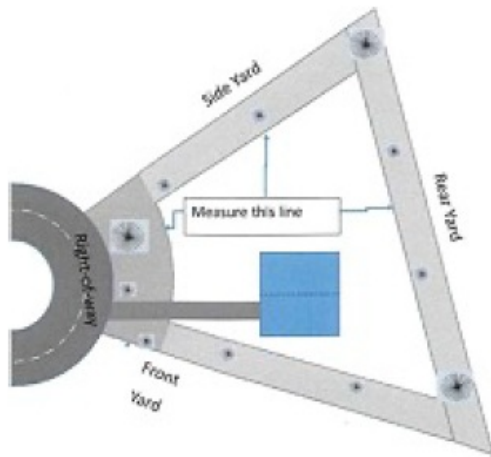


Figure 3. Side Street Buffer Yard



*Figure 4. Where to Take Linear Measurements.*

(Ord. 21-06, passed - -)

#### **9.5.1.2 Development Permit for Land Disturbing Activity**

A development permit is required prior to land disturbing activity when there is no other active development application in process pursuant to this Ordinance (e.g. Major or Minor Site Plan, Major or Minor Subdivision, Single Family Development). The development permit application shall be accompanied by a landscape plan when the applicant intends to plant the required buffer yard trees or a tree survey if the applicant proposes to use qualifying trees to meet the buffer yard requirements.

(Ord. 21-06, passed - -)

#### **9.5.1.3 Landscape Plans and Tree Surveys**

(A) Landscape plans shall contain the following information:

- (1) Dimensions of the property lines;
- (2) Location and dimensions of all required buffer yards;
- (3) Location of construction access/driveways;
- (4) Location of trees to be planted;
- (5) Types of trees to be planted;
- (6) Size and caliper of trees to be planted;
- (7) Tree spacing; and
- (8) Summary calculation table of required plantings by buffer yard.

(B) Tree surveys shall be prepared by a surveyor licensed in the state of North Carolina Tree surveys shall include the following:

- (1) Dimensions of the property lines;
- (2) Location and dimensions of all required buffer yards;
- (3) Location of construction access/driveways;
- (4) Location, diameter breast height, and species of all trees to be retained within required buffer yards; and
- (5) Summary calculation table of required plantings by buffer yard.

(Ord. 21-06, passed - -)

#### **9.5.1.4 Buffer Yard Standards**

(A) When a land disturbing activity requires issuance of a Development Permit, and there is no other active development application in process pursuant to this Ordinance (e.g. Major or Minor Site Plan, Major or Minor Subdivision, Single Family Development) perimeter buffer yards must be established per this Section. Planting credits may be used to satisfy buffer yard requirements per 9.5.1.4(D) using existing qualifying trees.



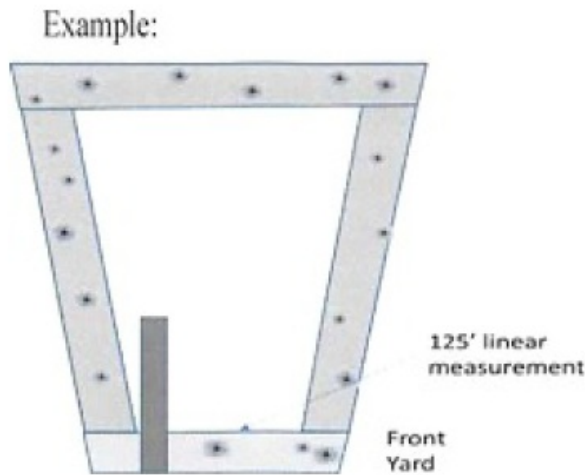
**Table 9.5.1.4 Buffer Yard Standards**

Location	Number of Required Trees
Front Buffer Yard	1 qualifying tree per 25 linear feet of street frontage
Side Street Buffer Yard	1 qualifying tree per 25 linear feet of street frontage
Side Buffer Yard	1 qualifying tree per 35 linear feet
Rear Buffer Yard	1 qualifying tree per 25 linear feet

Planted Tree Type	Minimum Planting Height	Minimum Planting Caliper
Evergreen Trees	6 feet	2 inches
Tall Trees from Appendix F	8 feet	2 inches
Short Trees from Appendix F	6 feet	1.25 inches

(B) The number of required trees shall be measured in whole numbers The applicant may round down when calculating the number of trees.

(C) Driveway Allowance. Each parcel shall be provided a deduction for one (1) 20 (twenty) foot wide driveway connection. In the event a driveway intersects two different yards, the property owner shall select which yard receives the credit. This deduction shall be applied by subtracting twenty (20) feet from the linear foot calculation for number of required trees as shown in Table 9.5.1.4 for the yard through which the connection is made.



$$125' - 20' = 105'$$

$$105'/25' = 4 \text{ trees required for Front Buffer Yard}$$

(D) Tree Planting Credits. To promote maintenance of the existing tree canopy and preservation of specimen trees, planting credits may be provided toward the requirements of Table 9.5.1.4 for qualifying trees as follows:

- (1) Tree planting credits apply to the buffer yard in which the tree is located.
- (2) One additional tree planting credit may be granted for every four (4) inch increase in tree girth above twelve inches (12") DBH in the buffer yard where the tree is located.

Example: The front buffer yard is one hundred twenty-five (125) feet in length and requires five (5) trees to comply with buffer yard planting requirement. The front buffer yard contains a healthy twenty-four inches (24") oak tree that will be retained per the landscape plan. Preservation of this tree grants four (4) planting credits of the five (5) required trees. Note: Maximum spacing requirements still apply within the front and side street buffer yards.

(3) Trees subject to the planting credit may be grouped and are not required to meet spacing requirements in the side and rear yards. In order to ensure adequate street yard buffer and to maintain street tree canopy, trees may be grouped in the front and side street buffer yards, however, there shall be no distance less than one tree per every fifty (50) linear feet across the frontage of the buffer yard.

(E) Planting Credit for Trees Less than eight (8) inches DBH. Where there are insufficient trees present on the property to

meet the requirements of Table 9.5.1.4, planting credit may be provided for trees smaller than eight (8) inches DBH but not less than three (3) inches DBH.

(F) Minor Modifications for Alternate Spacing and Grouping. The Village Planner may authorize modifications to encourage preservation of existing trees in lieu of planting subject to the following standards:

(1) To satisfy tree credits described in 9.5.1.1(D).

(2) To allow preservation of trees within a building envelope within a distance no greater than the required buffer yard depth when insufficient trees are available for preservation.

(Ord. 21-06, passed - -)

#### **9.5.1.5 Exemptions from Buffer Yard Planting Requirements**

(A) This article shall not restrict public utilities and electric suppliers from maintaining safe clearance around existing utility lines, and existing easements in accordance with applicable state laws.

(B) Dead, diseased or naturally fallen or severely damaged trees or vegetation, or trees or vegetation that are a threat to the public health, safety, or welfare based on photographic documentation, observation by the Village Planner, or by the submittal of a report prepared by an arborist or other landscape professional, should be removed. Replacement of the tree(s) would only be subject to buffer requirements to maintain compliance with a required landscape plan.

(C) Bona fide agricultural and forestry operations shall be exempt from the provisions of this Article. This exemption applies to forestry activity on forestland that is taxed on the basis of its present-use value as forestland under G.S. Chapter 105, Article 12 and activities conducted in accordance with an approved forestry management plan subject G.S. Chapter 89B and extends to any activity defined as a bona fide farm operation in G.S. 160D-903 within the extraterritorial jurisdiction of the Village.

(D) The North Carolina Department of Transportation (NCDOT) shall be exempt from buffer requirements of this Ordinance within NCDOT rights-of-way. Tree removal in the Village rights-of-way must be approved by the Village Manager or designee.

(E) All real properties owned by the Village of Pinehurst.

(Ord. 21-06, passed - -)

#### **9.5.1.6 Noncompliance with Buffer Yard Standards**

(A) On properties where land disturbing activity has occurred without a development permit, buffer yards shall be established pursuant to this Section. A landscape plan and development permit shall be submitted demonstrating compliance with this Section.

(B) In addition, other remedies up to and including penalties may apply in accordance with Chapter 7 of this Ordinance.

(Ord. 21-06, passed - -)

## **Part 2. Landscaping Requirements for All Development Requiring**

### **a Permit Other than Single-Family Residential**

#### **9.5.2.1 Purpose and Scope**

The natural landscape conditions within the Village of Pinehurst and its extraterritorial jurisdiction typifies the North Carolina Sandhills and Longleaf Pine Ecosystems. These natural conditions (topography, vegetation, and wildlife) are unique within North Carolina and are the strongest visual aspects defining the character of the Village. The purpose of the landscaping standards in this Section shall be to create an appearance in which manmade development is situated within a forest or naturalized setting all zoning districts. All size standards in this section shall conform to the American Standards for Nursery Stock.

(Ord. 21-06, passed - -)

#### **9.5.2.2 Landscape Plan Required**

A landscape plan shall be submitted to the Village Planner and its approval is a prerequisite for the issuance of a development permit where required.

(Ord. 21-06, passed - -)

#### **9.5.2.3 Planted Buffers**

(A) Permitted Uses Within Planted Buffer Areas Planted buffers should be left in an undisturbed natural vegetative state and provided with supplemental plantings. Selective thinning of vegetation and removal of dead vegetation may be permitted as long as the intent of the planted buffer requirement is maintained. Driveways and utilities may cross a planted buffer at or as near a perpendicular angle as practical. Paths and walkways may pass through the planted buffer and pedestrian walkways (greenways) may be installed within the buffer area. Grading in the designated planted buffer may be allowed with site plan approval, if the re-vegetation plan is determined to meet the intent of this Section;

(B) Location of Planted Buffers: Required planted buffers shall be provided along the perimeter of development unless alternate locations are approved by the Village Planner. Planted buffers shall be designated and dimensioned on all site plans and subdivisions plans, where applicable;

(C) Public Pedestrian Easement Required: The full width of all buffer areas shall be designated as a public pedestrian easement and shown on a recorded plat;

(D) Application:

(1) These standards apply to all non-residential and multi-family uses (including townhouse unit development) located within the Village of Pinehurst and its extraterritorial jurisdiction except for properties containing only museums and/or libraries as the primary use and located within the PC Zoning District. Additionally, the Village Council may waive some or all of these standards for developments and uses located within the VC, VMU, VCP and VR Zoning Districts when determined to be in the best interest of the public. In waiving these standards, the Village Council may require an alternate means of buffering if agreed upon by the property owner. When nonresidential and multi-family uses submit a site plan for locations next to property zoned for primarily residential use, planted buffers shall be provided near the perimeter of the nonresidential or multi-family property. One half of the planted buffers requirements shall apply when a public street or railroad right-of-way separates a nonresidential or multi-family uses from a residential property. If a greenway passes through a landscape buffer the area of the greenway shall be subtracted from the total buffer area for plant count purposes.

(2) The required planted buffer width is based on the classification shown on Table 9.5.1.2;

(3) If said project is adjacent to property that is zoned non-residential or multi-family but is used for single family purposes, half the required planted buffer width along the perimeter of the property adjoining that property shall be required;

(4) A class 3 planted buffer shall be installed along and adjacent to NC 2, Midland Road east of the traffic circle to the zoning jurisdictional boundary of Pinehurst, on the west side of Hwy. 15/501 from the northern extent of the zoning jurisdictional boundary of Pinehurst southward to the western extent of the traffic circle and the intersection with Hwy. 211, Hwy. 211 from the intersection of McKenzie Rd. to the western extent of the zoning jurisdictional boundary of Pinehurst, Murdockville Rd. from the intersection of Hwy. 211 to the northern extent of the zoning jurisdictional boundary of Pinehurst and on the west side of Hwy. 5 from the intersection of Lake Hills Rd. south to the intersection with Trotter Hills for all non-single family residential uses.

(5) If the adjacent property is zoned for residential use but is vacant at the time of the proposed development, the full required planted buffer width shall be provided;

(6) If the proposed development is non-residential and the adjacent property is zoned or used for multi-family dwellings, one-half of the planted buffer width shall be provided, but not less than ten (10) feet;

(7) If the proposed development is for multi-family dwellings adjacent to property zoned or used for multi-family dwellings, one-half of the planted buffer width shall be provided, whether the property is occupied or not.

(E) Planted Buffer Classifications and Width:

(1) Planted buffer width is based on uses in the following classifications:

(a) Class 1-10 feet: Cemeteries, golf courses, passive recreational areas;

(b) Class 2-20 feet: Offices, churches, schools, public facilities including playgrounds, ball fields, community swimming pools, and similar facilities, day care facilities, multi-family, residential, hotels;

(c) Class 3-30 feet: Neighborhood commercial and service activities including, but not limited to, retail operations, funeral homes, restaurants, banks, convenience stores; and

(d) Class 4-50 feet: Commercial activities with higher vehicle activities including, but not limited to, vehicle repair, theatres, outdoor recreation centers, and outdoor storage.

**Table 9.5.2.3**

<b>REQUIRED PLANTED BUFFER WIDTH IN FEET BASED ON BUFFER CLASSIFICATION AND ADJACENT PROPERTY USE AND ZONE</b>				
<b>ADJACENT PROPERTY USE AND ZONE</b>				
<b>Planted Buffer Class</b>	<b>Developed Residential Zone</b>	<b>Principal Residential Use in Nonresidential Zone</b>	<b>Developed Multi-Family Zone</b>	<b>Vacant Multi-Family Zone</b>
Class 1	10 feet	10 feet	10 feet	10 feet
Class 2	20 feet	20 feet	10 feet	10 feet
Class 3	30 feet	30 feet	15 feet	15 feet
Class 4	50 feet	50 feet	25 feet	25 feet

(2) The required setbacks may be used to meet landscape planted buffer width requirements in all districts. When planted buffers are required for residential uses, the planted buffer requirements shall be designated open space, or common area;

(3) Planted buffer widths and required plantings may be reduced by thirty percent (30%) if the site plan indicates a berm, alternate landscaping, walls, opaque fencing in combination with landscaping or topographic features which will, in the opinion of the Village Planner, achieve the intent of this Section as outlined in Section 9.5.1 and result in equal or better performance. In no case shall a buffer width be less than ten (10) feet. Berms may not have a slope steeper than two (2) horizontal to one (1) vertical and must have a crown width of at least two (2) feet and a minimum height of two (2) feet.

(F) Requirements for Planted Buffer Areas:

(1) Existing Vegetation. Existing vegetation, regardless of species, shall be used to meet all or part of the requirements of this Section wherever possible, if it provides the same level of obscurity as the planted buffer required below. Vegetation to be saved shall be identified on site plans, along with protection measures to be used during grading and construction. (See Section 9.5.2.8 for protection measures and calculation of credits for existing trees);

(2) Planting requirements: Planting requirements for planted buffers include both trees (large and small) and shrubs as described below. (See Appendix F for a listing of native/water conserving trees and shrubs.) In calculating buffer planting requirements, areas of driveways are excluded.

(a) Tree Standards: This requirement may be satisfied as follows:

1. One longleaf pine tree with a minimum size of three (3) inch caliper at planting are required per two hundred (200) square feet of buffer area.

2. Two understory trees a minimum of two-inch caliper are required per five hundred (500) square feet of buffer area, one of which is to be an evergreen species that is not a pine tree.

3. Trees shall be distributed along the entire length and width of the planted buffer. Due to unique characteristics of a site, or design objectives, alternative plant mixes and spacing may be approved by the Village Planner.

(b) Shrub Standards: Shrubs, a minimum of twenty-four (24) inches in height, of a variety that can be expected to reach four (4) to five (5) feet in height and three (3) feet in width within three (3) years of planting, shall be provided. Shrubs shall not be planted closer than six (6) feet to newly planted trees, nor within the drip line of existing hardwood trees. Shrubs shall be distributed along the entire length and width of the planted buffer, preferably in naturalistic groupings so as not to create a hedge-like condition. Shrubs shall be provided at one per seventy-five (75) square feet of buffer area.

(Ord. 21-06, passed - -)

#### **9.5.2.4 Landscape Screens**

(A) The purpose of a screen is to use plants and/or other landscape or architectural elements to obscure views from all corridors or adjacent properties.

(1) Structures such as loading docks, mini-warehouses, service courts, dumpster areas, mechanical equipment, and outside storage of material stocks or equipment, either for sale or not for sale on the premises, such as, but not limited to, motor vehicles, equipment, or construction equipment shall be screened from unobstructed off-site views. Uses requiring screening as noted in this Ordinance shall be screened according to the requirements of this Section. This screening requirement does not pertain to outdoor display of merchandise located within the Historic Preservation Overlay District that complies with the regulations and design guidelines of that district.

(2) Landscape Screen Standards: Features and uses specified above and/or others requiring screens shall provide a visual obstruction from all corridor and adjacent properties in conformance with the following standards: The screen may be composed of view obscuring vegetation, wall, fence, or berm. The items may be used individually or in combination. The minimum result shall be a semi-opaque seventy-five percent (75%) screen that obscures views from the ground to a height of the object being screened. Evergreen screening plants shall be at least five (5) feet tall at the time of installation and reach the desired height within three (3) years of planting. Additionally, screen areas shall be sufficient size to allow for the mature growth of plant materials when used.

(Ord. 21-12, passed 07-27-2021; Ord. 21-06, passed - -)

#### **9.5.2.5 Parking Area Landscaping**

(A) Purpose: In order to reduce reflected sunlight and headlight glare from parked vehicles, as well as to maintain a separation between vehicles and other uses and to reduce the effects on the environment of vehicle parking facilities, the following standards apply.

(B) Required Perimeter Landscape Plants:

(1) Large trees (unless subject to overhead power lines): Longleaf pines shall be planted at the rate of one three (3) inch caliper tree per twenty (20) linear feet of property line abutting a street and/or adjoining property, less driveways and sight distance triangles. Trees must be a minimum of five (5) feet and a maximum of twenty (20) feet from the parking lot edge to meet this requirement. Credit given for existing, healthy, protected trees, regardless of species, shall be according to

9.5.2.8 of this Section;

(2) Evergreen shrubs at the rate of one (1) 24-inch height minimum shrub per three (3) linear feet of parking lot edge abutting streets and adjoining property, less driveways, of a species expected to reach a minimum height of thirty-six (36) inches and a minimum spread of thirty (30) inches within three (3) years of planting. This rate may be varied based upon size of installed plant materials. Shrubs must be a minimum of five (5) feet and a maximum of ten (10) feet from the parking lot edge to meet this requirement.

(a) Shrubs shall be planted such that no less than seventy-five percent (75%) of the length of the parking lot edge, to a height of thirty-six (36) inches, is obscured from view after three (3) years of growth. Shrubs planted within sight distance triangles shall be of a type with a maximum mature height of eighteen (18) inches.

(b) Additionally, shrubs shall not be planted within six (6) feet of the trunk of a tree;

(3) A brick or stone wall, or fence, at least thirty-six (36) inches tall and of a material compatible with the building, may be substituted for the requirements of shrubs.

(4) Berms may be installed within the highway (front) or interior (side or rear) yards with a minimum two (2) foot height, two (2) foot minimum crown width, and side slopes of not steeper than two horizontal to one vertical. Berms shall be planted with live vegetation, and may be used with smaller plants to meet the required screening area, provided that the combination of the berm and the shrubs obscures no less than seventy-five percent (75%) of the length of the parking area, to a minimum height of thirty-six (36) inches after three (3) years of growth;

(5) Areas used for vehicle sales and/or service, parking, and business transactions such as areas adjacent to gasoline pumps (even if under a canopy) and areas for drive-up service, shall be considered parking areas and shall comply with the requirements of this Section.

(C) Landscaping Within Parking Areas:

(1) Location: Parking areas shall provide and maintain landscaped areas based upon the parking area. Areas under canopies, loading and service areas, and portions of drives with no parking on either side for a distance longer than twenty-five (25) feet and/or used exclusively as access to loading or service areas, are exempt from this requirement. The landscaping within parking areas shall be provided in addition to planted buffer requirements of this Ordinance.

(a) Areas used for landscaping shall be provided in the amount equivalent to at least ten (10) percent of the parking area, and shall be used for planting either trees and/or shrubs according to the requirements below. Tree planting areas shall be located such that no parking space is farther than seventy-five (75) feet from a tree trunk.

(2) Required Landscape Plants: Trees shall be used at the following rates, either in combinations of small and large trees, or with large trees only, to add up to the required landscape area:

(a) One three (3) inch caliper, large hardwood or pine tree per two hundred fifty (250) square feet of required landscaped area. Each large tree shall be located within a minimum growing area of two hundred fifty (250) square feet un-encroached upon by shrubs or impervious pavement, with a minimum dimension of ten (10) feet;

(b) One understory tree less than three (3) inch caliper at the rate of one eight (8) foot tall tree per one hundred twenty-five (125) square feet of required landscaped area. Understory and evergreen trees shall be located within a minimum growing area of one hundred twenty-five (125) square feet, with a minimum dimension of seven and one half (7 1/2) feet, un-encroached upon by shrubs or impervious pavement. Understory trees may be used to fulfill up to one third (1/3) of the required trees.

(3) Islands and Medians:

(a) Minimum curb radii of five (5) feet are required on the corners of all tree islands and medians to allow for free movement of motor vehicles around planting materials. (See the Village of Pinehurst Engineering Standards and Specifications Manual). All islands shall have raised curbing around them meeting the Village of Pinehurst Engineering Standards and Specifications Manual to further protect plants from being run over by motor vehicles. Medians without curbing shall include devices to stop vehicles from driving into the planted areas;

(b) No more than one tree may be provided per island, unless there is at least the minimum growing area per tree as required above. Large trees shall not normally be planted less than eighteen (18) feet apart, and small trees/large shrubs shall not normally be planted less than twelve (12) feet apart.

(4) Existing Trees:

(a) Credit given for existing, healthy, protected trees shall be according to 9.5.2.8 of this Section. Trees used to meet other requirements of this Ordinance may not be used to meet the requirements of this Section.

(b) Sight Distances: To facilitate safer vehicle circulation within parking lots, shrubs shall be pruned to a maximum height of forty-two (42) inches. Tree limbs shall be pruned to no lower than seventy-two (72) inches from the ground.

(D) Parking Area Landscaped Yards: Any new or expanded off-street parking areas shall provide landscaped areas meeting the requirements below:

(1) New or expanded parking areas shall provide a landscaped area, adjacent to and outside of the street right-of-way, and/or adjacent residential property line edge, less driveways, of a minimum of ten (10) feet in width and adjacent non-

residential property line edge, less driveways, of a minimum of five (5) feet. Proposed locations of plants and parking spaces shall be arranged to protect plants from vehicles;

(2) Planted buffers and/or screens provided adjacent to right-of-way, as required under Sections 9.5.2.3 and/or 9.5.2.4 of this Section, and located between parking lots and streets and/or adjoining residential property may be considered in fulfilling these requirements.

(E) Street Trees Required. For all non-single-family developments one three (3) inch caliper, large hardwood or pine tree per forty (40) lineal feet of street frontage minus driveways shall be planted in the road right of way. These street trees shall be approved by the Village Engineer as being acceptable street trees. These trees shall be planted outside of site triangles and not conflict with any utilities. Alternate type and size trees may be approved by the village engineer based on existing site conditions and constraints.

(Ord. 21-06, passed - -)

#### **9.5.2.6 Maintenance Responsibility**

Unless otherwise stated, the owner of any property where landscaping is required shall be responsible for the maintenance of all required plant material and continued compliance with this Section.

(Ord. 21-06, passed - -)

#### **9.5.2.7 Request for Extension of Compliance**

(A) A letter of request for extension of compliance with landscaping requirements may be filed with the Village Planner that states the reasons why the request is being made. If the Village Planner finds that there are unfavorable conditions for planting, an extension of compliance with landscaping requirements may be allowed for a period not longer than ninety (90) days. The letter shall also acknowledge that the property owner is aware of all landscaping and screening requirements, and will comply with those requirements within ninety (90) days, or discontinue use of the property;

(B) If an extension is allowed by the Village Planner, the applicant shall provide to the village a financial guarantee as set forth in Section 9.17.1.26 sufficient to cover one hundred twenty-five percent (125%) of the installed landscaping costs based on an estimate from a nursery or qualified landscape professional;

(C) If the initial letter of request for extension of compliance with landscaping requirements has expired and conditions are still deemed unsuitable for planting, the applicant may request one (1) additional extension of up to ninety (90) days. Failure to comply with the provisions of this Section within the time noted in the letter of request for the extension of compliance with landscaping requirements shall be deemed a violation of this Ordinance. In addition, failure to perform in accordance with this Section shall result in default and the forfeiture of the financial guarantee as set forth in Section 9.17.1.26.

(Ord. 21-06, passed - -)

#### **9.5.2.8 Existing Vegetation Credits**

(A) Existing healthy trees and shrubs may be credited toward landscape requirements. Vegetation to be saved shall be identified on submitted plans. Protection measures shall be installed to maintain tree health and such protective measures shall be shown on the submitted plan.

(B) Credit shall be given for existing, healthy, protected trees shall be on a tree-for-tree basis, for planted buffer areas, and on the basis of fulfilling the requirements for parking areas. When trees exceed twelve (12) inches in diameter, credit may be granted in accordance with Section 9.5.1.4(C). Existing trees will not be allowed to be counted towards landscape screen requirements. Trees so credited must be at least three (3) inch caliper.

(Ord. 21-06, passed - -)

#### **9.5.2.9 Specimen Trees**

A specimen tree is any healthy, living tree and includes all of the following:

(A) Has a trunk diameter at breast height (DBH) of twenty-four (24) inches or more;

(B) A trunk DBH of twelve (12) inches or more in the case of the following species:

(1) Ilex species (holly);

(2) Magnolia species;

(3) Longleaf Pine species.

(C) Is listed as a State or National Champion by the North Carolina Forest Service or the American Forestry Association;

(D) Provides unique habitat for any endangered or threatened wildlife species protected by Federal law; or

(E) Has been cited by the Village Council as being historically significant.

(Ord. 21-06, passed - -)

### 9.5.2.10 Preservation and Removal on Private Property

#### (A) Specimen Trees on Private Land:

(1) Specimen trees shall be shown on all preliminary commercial and residential site plans submittals and located by survey on final site or Landscape Protection Plans. The Village Planner may inspect the site to determine the accuracy of identification. The location and identification of specimen trees shall be required if such trees are within one hundred (100) feet of areas of a development site where soil disturbance or construction activity is proposed;

(2) Proposed development shall be designed to maximize the preservation of specimen trees. Where specimen trees exist, flexible approaches such as adjustments to lot layout, placement of buildings and paved surfaces and location of utilities shall be pursued in order to save them;

(3) Notwithstanding any provision of this Ordinance to the contrary, saving of a specimen tree shall constitute evidence that the requirements for a case have been met for a variance application;

(4) No soil disturbance from construction, trenching or grading, or paving, or storage of equipment or materials shall take place within the critical root zone of any specimen tree to be preserved unless during the review of the site and/or Landscape Protection Plan it is determined there is no reasonable way the property can be developed without such disturbance.

#### (B) Voluntary Protection of Specimen Trees On Existing Residential Lots

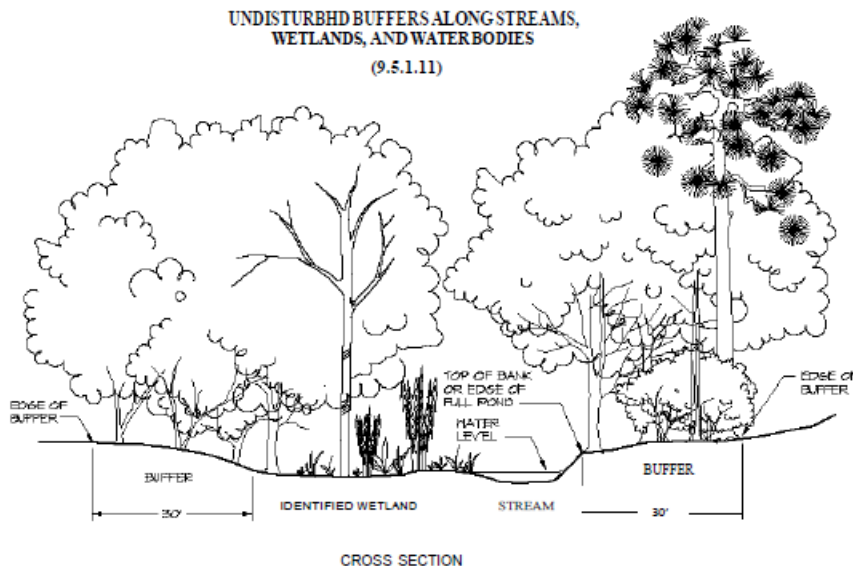
(1) Specimen trees which are located on individual lots with single homes shall be protected if voluntarily registered by the property owner;

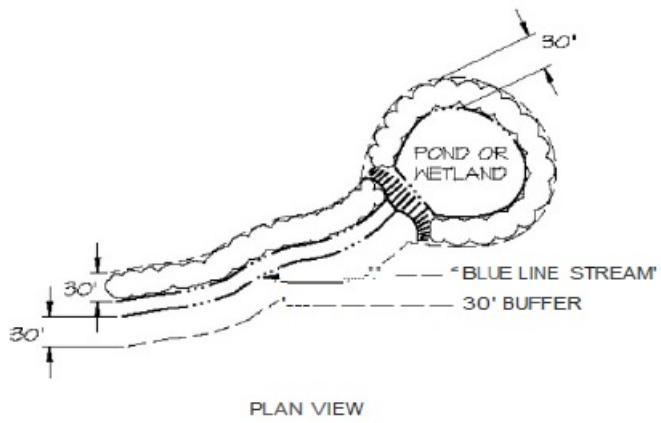
(2) Registration of such trees shall render the owner of the lot the following privileges: If a permitted accessory structure or addition to a house is being planned, notwithstanding any provision of the Ordinance to the contrary, saving of a specimen tree may constitute evidence that requirements for a case have been met for a variance application.

(Ord. 21-06, passed - -)

### 9.5.2.11 Undisturbed Buffers Along Streams, Wetlands, and Water Bodies

(A) Notwithstanding any other provisions of this Ordinance regarding buffers, landscaping or setbacks, all development, other than development of existing single family lots shall maintain a thirty (30) foot undisturbed buffer measured from the top of the bank along all streams that are shown as "blue lines" on the most recent versions of U.S. Geologic Survey 1:24,000 scale topographical maps; along the edge of identified wetlands as established by the North Carolina Department of Environmental Resources as defined by G.S. § 143.212(6); and along the edge of the full pond of any water body that is fed by or connected to a "blue-line" stream, other setbacks such as wetland and watershed (Section 8.3.3) may also apply;





(B) The Village Council may permit as a special exception water dependent structures, pedestrian facilities and other similar structures where the Council finds that only minimal disturbance will result. In permitting such facilities, the Council may attach such reasonable conditions as the Council deems appropriate.

(Ord. 14-35, passed 09-24-2014; Ord. 21-06, passed - -)



City of Winston-Salem General Ordinance related to Trees

## **ARTICLE XI. TREES**

### **Sec. 74-300. General.**

(a) *Purpose.* The purpose of this article is:

- (1) To promote and protect the public health and safety by providing for the regulation of the planting, maintenance, and removal of trees, shrubs, and other plants within the City of Winston-Salem rights-of-way or on any City of Winston-Salem property;
- (2) To encourage protection of existing trees on the streets and public grounds within the city, including their root systems extending onto private property; and
- (3) To establish procedures for abating situations where trees growing on private property constitute a public nuisance so as to affect the health and safety of the general public.

(b) *Definitions.* As used in this article, unless the context otherwise requires, the words listed below shall have the following meanings:

*Drip line* means a vertical line running through the outermost portions of the tree crown extending to the ground.

*Impervious surface(s)* means buildings, structures and other paved, compacted gravel or compacted areas which by their dense nature, do not allow the passage of sufficient oxygen and moisture to support and sustain healthy root growth.

*Owner or property owner* includes any person who is part owner, joint owner, tenant in common, tenant in partnership, joint tenant or tenant by the entirety of the whole or part of any building or land, as determined from the public records of Forsyth County, or any other person who is a tenant, occupant or otherwise has control over such building or land.

*Public property* means property owned or controlled by the City of Winston-Salem, including rights-of-way.

*Public utility company* means a railroad company, pipeline company, gas company, electric power company, telephone company, cable television company or any other company that performs a public service and is regulated by a public authority such as, but not limited to, the North Carolina Utilities Commission or the city as franchiser.

*Right(s)-of-way* means property upon which the city has the right to construct a street, sidewalk, bicycle path, or to use said property for public utilities, landscaping or other public purpose.

*Top(ping)* means the severe cutting back of limbs to stubs larger than three inches in diameter within the tree's crown so as to remove the normal canopy or disfigure the shape of the tree.

*Tree* means a self-supported woody plant having a well-defined stem or trunk, or the capability of having a single stem through trained growth, a more or less definite crown, a height at maturity of at least eight feet, and a trunk caliper at maturity of five inches or greater at a height six inches above the ground, as determined by the assistant city manager/public works or his designee.

(Ord. No. 4382, § 4, 12-18-00)

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### **Sec. 74-301. Trees on private property.**

- (a) No owner of private property shall maintain or allow to remain on his premises any tree or part thereof which is in an unsafe condition so as to affect the health or safety of the general public, or which may be injurious to public improvements, or is infected with a fungus, insect or other pest, or otherwise constitutes a hazard to public property or to the health or safety of the general public. The assistant city manager/public works or his designee may require the owner to treat or remove from his premises any such tree or part thereof.
- (b) The assistant city manager/public works or his designee, shall have the authority to enter upon private property to spray or otherwise treat any tree infested with any parasite, fungus, or other pest when treatment is required to prevent the spread or breeding of such parasite, fungus or other pest and to prevent damage from such pests to the general public, property, or trees planted on public property.

(Ord. No. 4382, § 4, 12-18-00)

### **Sec. 74-302. Same—Public property.**

- (a) *Permit requirements.*

- (1) *General.*

- a. No person shall plant, prune, spray, cable, brace, remove or otherwise maintain any tree on any public property without first filing for and obtaining a permit from the assistant city manager/public works or designee. Public utility companies may be eligible for a master permit for jobs requiring maintenance of trees, or excavation affecting trees on public property on a continuous basis. The holder of the permit shall abide by the assistant city manager/public works or designee's specifications and conditions and industry standards of practice.
- b. The assistant city manager/public works or designee shall issue a permit if, in his judgment, the work to be done is consistent with the department of public work's policies and objectives with respect to roadway appearance, the work does not threaten public health and/or safety and the methods and materials used in such work meet industry accepted specifications. Any permit issued shall have an expiration date, and no work may be done after this date unless otherwise extended. Master permits will be issued on an annual basis. All work shall be performed in the manner specified by the permit, or the assistant city manager/public works or his designee may revoke the permit. The assistant city manager/public works or his designee may declare any permit void if any conditions or specifications of the permit are violated. The assistant city manager/public works or his designee may inspect work at any time to determine compliance with the permit.
- c. All applications for permits must be made to the assistant city manager/public works or his designee not less than 48 hours prior to the time the work is to be begun.

- (2) *Planting trees on public property.*

- a. No person shall plant a tree on public property without first obtaining a permit from the assistant city manager/public works or his designee. A permit application to plant trees on public property must be filed with the assistant city manager/public works or designee and shall include the number of trees to be planted, the species to be planted, the method of planting to be used, and any other such information that may be helpful or requested by the assistant city manager/public works or his designee in determining the issuance of a permit.

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- b. When a tree is planted in violation of the conditions of the permit, the assistant city manager/public works or his designee may remove, or cause to be removed, such trees. The costs of removal shall be charged to the permit-holder.
- (3) *Maintaining trees on public property.* No person shall maintain trees on public property without first obtaining a permit from the assistant city manager/public works or his designee. A permit application to maintain trees on public property must be filed with the assistant city manager/public works or his designee and shall include the number and types of trees to be pruned, sprayed, cabled, braced, or otherwise treated or maintained; the type of treatment or maintenance to be carried out; the composition of any chemical used as a treatment; and any other such information that may be helpful to or requested by the assistant city manager/public works or his designee in determining the issuance of a permit.
- (4) *Removing trees on public property.* No person shall remove a tree from public property without first obtaining a permit from the assistant city manager/public works or his designee. A permit application to remove trees from public property must be filed with the assistant city manager/public works or his designee and shall include the number, species, and reason(s) for removal. The assistant city manager/public works or his designee may require that the tree or trees to be removed be replaced with a tree or trees of species, size, and placement specified by the assistant city manager/public works or his designee in accordance with the city's tree replacement policy. The permit-holder shall bear the full and complete costs of removing both the tree(s) and the stump(s), as well as the cost of the replacement(s). In cases where a tree located on public rights-of-way or public property is dead or hazardous and a citizen requests removal, the city will remove the tree at no charge to the citizen.
- (5) *Working within the dripline of trees on public property.* No person shall build, excavate, ditch, trench, tunnel, or place materials including, but not limited to, stone, sand, soil, concrete, or impervious surfaces within the dripline of any tree on public property without first obtaining a permit from the assistant city manager/public works or his designee. Street work by city departments shall be exempt from permitting requirements. A permit application must be filed with the assistant city manager/public works or his designee and shall include the number and types of trees affected by the proposed building, excavation, ditching, trenching, tunneling, or having materials placed within the dripline; the type and methods of work occurring; the composition of materials to be placed within the dripline; and any other such information that may be helpful to or requested by the assistant city manager/public works or his designee in determining the issuance of a permit.
- (6) *Public utility companies.* No public utility company shall perform tree pruning or other maintenance or excavation affecting trees on public property without first obtaining, from the assistant city manager/public works or his designee, either a permit for specific tasks, as provided in subsections (2) through (5) above, or a master permit for work to be done on a continuous basis. Such master permit shall be valid for a period no greater than one year from the date of issuance. Any permit authorizing trimming or other operations affecting trees on public property shall be in accordance with industry specifications or other agreed upon conditions set forth in the permit. Applications for a master permit shall include a description of the treatment or maintenance to be carried out, the composition of any chemical used as a treatment, and any other such information that may be helpful to or requested by the assistant city manager/public works or his designee in determining the issuance of a permit.
- (b) *Injuring trees.*
- (1) No person shall attach any object including, but not limited to, rope, wire, chain, nail, or sign to any tree or shrub on public property, or to any guard or stake intended for the protection of such tree without a prior written permit from the assistant city manager/public works or his designee.

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- (2) No person shall be allowed to cut, carve, break, transplant, remove, climb with spikes, kill, or cause to be killed, any tree on public property, without a prior written permit from the assistant city manager/public works or his designee.
  - (3) No person shall cut, disturb, or otherwise damage any root within the dripline of any tree on public property, without a prior written permit from the assistant city manager/public works or his designee.
  - (4) No person shall store, spray, or otherwise place any solid, liquid, or gaseous substance or chemical which may harm any tree public property, without a prior written permit from the assistant city manager/public works or his designee.
  - (5) No person shall change, damage or remove any guards, stakes, or other devices intended for the protection of any tree, or materials otherwise placed or maintained by the city on any tree located on public property, without a prior written permit from the assistant city manager/public works or his designee.
  - (6) No person shall set fire to or permit any fire to burn where the fire, or the heat or smoke from said fire, may injure any portion of any tree on public property, without a prior written permit from the assistant city manager/public works or his designee.
- (c) *Tree topping.* No person shall top a tree on public property without a prior written permit from the assistant city manager/public works or his designee, except in emergency situations where trees severely damaged by storms or other causes interfere with or threaten damage to utility wires, street lights, traffic signals, etc. and pruning practices are impractical.

(Ord. No. 4382, § 4, 12-18-00)

### **Sec. 74-303. Inspection.**

- (a) The assistant city manager/public works or his designee may periodically inspect any private or public property subject to the provisions of this article.
- (b) If, through inspection, it is determined that a person has failed to comply or is no longer in compliance with the provisions of this article, the person so in violation shall be sent written notification by the assistant city manager/public works or his designee informing him of said violations.
- (c) No person shall refuse entry or access to any authorized representative or agent of the city who requests entry for the purpose of inspection, and who presents appropriate credentials, nor shall any person obstruct, hamper, or interfere with such representative while in the process of carrying out official duties.

(Ord. No. 4382, § 4, 12-18-00)

### **Sec. 74-304. Penalties.**

- (a) No person shall fail, neglect, or refuse to comply with any permit, notice or order from the assistant city manager/public works or his designee or with any provision of this article.

Upon the occurrence of any such violation, except violations of section 74-301 or section 74-303 of this article, the assistant city manager/public works or his designee may issue a notice of violation, which shall describe the violation or violations which have occurred, and an order to correct the violation. Following the expiration of an order to correct the violation or violations, a civil penalty will be assessed in the amount of \$50.00 for each violation remaining uncorrected. Each day a violation continues shall be considered a separate violation.

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- (b) If payment of assessed penalties is not received, or an equitable settlement reached, within 30 days after demand for payment is made, the city may institute a civil action for recovery of the penalty, pursuant to G.S. 160A-175(c).
  - (c) Property owners in violation of section 74-301 of this article shall be sent written notification by the assistant city manager/public works or his designee informing them of said violations. The property owner shall have ten days from the date of notice to correct the violation. If, after ten days, the property owner has not corrected the violation, the assistant city manager or his designee shall have authority to remove or correct the violation, and assess the owner the cost thereof. If unpaid, the cost shall be a lien upon the land or premises where the violation arose. A lien established pursuant to this subsection shall have the same priority and be collected as unpaid ad valorem taxes. The expense of the action is also a lien on any other real property owned by the person in default within the city limits or within one mile of the city limits, except for the person's primary residence. The additional lien established pursuant to this subsection is inferior to all prior liens and shall be collected as a money judgment. This subsection, as it relates to the additional lien, shall not apply if the person in default can show that the nuisance was created solely by the actions of another. In situations where the assistant city manager/public works or his designee determines there is imminent danger to the public, the city shall have the authority to remove the dangerous tree(s) or part(s) thereof without prior notification.
  - (d) If, as a result of the violation of any provision of this article, the injury, mutilation, or death of a tree located on public property is caused, the cost of repair or replacement of such tree shall be borne by the person in violation, in addition to any civil penalties assessed. The replacement value of trees and shrubs shall be determined in accordance with the latest revision of "Valuation of Landscape Trees, Shrubs and Other Plants," as published by the International Society of Arboriculture.

(Ord. No. 4382, § 4, 12-18-00; Ord. No. 4434, § 3, 9-16-02)

### **Sec. 74-305. Appeal right.**

- (a) In the event any person is dissatisfied with a decision of the designee of the assistant city manager/public works which affects such person and involves the application of this article, such person may request in writing a hearing within five working days of the receipt of notification of a violation. The request must be made to the assistant city manager/public works, and must clearly state the applicant's reasons for dissatisfaction, and shall be accompanied by such supplementary data to substantiate such reasons. The assistant city manager/public works may approve, modify or deny his designee's decision based upon the public interest, the intent of this article, and any reasonable hardship likely to result. The assistant city manager/public works shall mail written notice of his decision to the appellant at his last known address no later than 30 days after the appeal is received.
- (b) In the event any person is dissatisfied with a decision originating from the assistant city manager/public works, which affects such person and involves the application of this article, or any person is dissatisfied with the assistant city manager/public works' decision on appeal, as provided in subsection (a) hereinabove, such person may within five days of notification of an original decision or within 15 days after the notification of the decision on appeal, but not thereafter, appeal any such decision of the assistant city manager/public works. The request must be made to the city manager in writing, and must clearly state the applicant's reasons for dissatisfaction, and shall be accompanied by such supplementary data to substantiate such reasons. The city manager, or his designee, may approve, modify or deny the assistant city manager/public works' decision based upon the public interest, the intent of this article, and any reasonable hardship likely to result. The city manager shall mail written notice of his decision to the appellant at his last known address no later than 30 days after the appeal is received. The city manager's decision shall be final.

(Ord. No. 4382, § 4, 12-18-00)

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**Sec. 74-306. Severability.**

Should any section, clause or provision of this article be declared by a court of competent jurisdiction to be invalid, the same shall not affect the validity of any other provision of this article.

(Ord. No. 4382, § 4, 12-18-00)

**Secs. 74-307—74-399. Reserved.**

City of Winston-Salem Landscaping and Tree Preservation  
Ordinances  
*New Development*



## 6.2 LANDSCAPING AND TREE PRESERVATION

### 6.2.1 LANDSCAPING AND TREE PRESERVATION STANDARDS – WINSTON-SALEM

#### A. GENERAL REQUIREMENTS

##### 1. PURPOSE

*It is the intent of this section to enhance the appearance and environmental quality of development sites in Winston-Salem and Forsyth County by requiring the planting of new trees and the preservation and maintenance of high-quality existing trees in order to:*

**a. APPEARANCE OF AREAS NEAR RIGHTS-OF-WAY**

*Improve the appearance of motor vehicle use areas within close proximity of vehicular rights-of-way;*

**b. APPEARANCE OF LARGE AREAS**

*Break the visual blight created by large expanses of unvegetated areas;*

**c. PROPERTY VALUE AND INVESTMENTS**

*Enhance property values and protect public and private investments by emphasizing the importance of trees and vegetation as visual and physical bufferyards to protect property values on adjacent properties;*

**d. WATER AND EROSION CONTROL**

*Increase site stormwater infiltration capacity, improve groundwater recharge, and reduce erosion and urban runoff pollution hazards by preserving vegetated areas to slow and absorb stormwater runoff;*

**e. COMFORT**

*Improve human comfort and moderate the climate by providing shade and reducing noise levels;*

**f. ENVIRONMENTAL SENSITIVITY**

*Encourage environmental sensitivity to natural features in design and construction;*

**g. GLARE**

*Filter and reduce reflected sunlight and headlight glare from parked vehicles onto street rights-of-way;*

**h. AIR**

*Filter and reduce motor vehicle fumes and dust; and*

**i. PUBLIC PROPERTIES**

*Improve the appearance of public properties.*

##### 2. APPLICABILITY

**a. LANDSCAPING STANDARDS**

*i. Unless otherwise provided in this section, an occupancy permit shall not be issued until all required planting and landscaping materials are installed.*

*ii. The following areas are required to be landscaped:*

- 1. Motor vehicle surface areas;*
- 2. Motor vehicle display areas;*
- 3. Outdoor storage areas;*
- 4. Utility service areas;*
- 5. Parking buildings or structures; and*
- 6. Public or private schools.*

**b. TREE PRESERVATION AND PLANTING STANDARDS**

*The applicability of the tree preservation and planting standards is referenced in **Section 6.2.1A.2.b, Tree Preservation and Planting Standards**.*

##### 3. EXCLUSIONS

*The following uses shall be exempt from the landscaping requirements of **Section 6.2.1A.2, Applicability**:*

- a. *A single family detached dwelling on its own lot;*
- b. *An attached dwelling unit which possesses an individually separated driveway and/or garage; and*
- c. *Fire hydrants and other utility devices whose visibility is vital to public safety.*

**B. APPLICATION PROCEDURES AND GENERAL REQUIREMENTS**

**1. APPLICATION**

*When an application is made for a building permit or a land disturbing permit, whichever is necessary, on any land where the landscaping and tree preservation requirements of this section are applicable, such building or land disturbing permit application shall be accompanied by the information cited in **6.2.1B.1, Application**, and **Section 6.2.1C, Tree Preservation and Planting**. Additional information to be submitted with the application for a building or land disturbing permit includes:*

**a. STORAGE, SURFACE, AND SERVICE AREAS**

*A site plan indicating the location, dimensions, and square footages of:*

- i. *Motor vehicle surface areas;*
- ii. *Motor vehicle display areas;*
- iii. *Outdoor storage areas;*
- iv. *Private utility service areas;*
- v. *Proposed parking space striping;*
- vi. *Overhead utility lines;*

**b. LANDSCAPING**

*A site plan indicating existing and proposed landscaping used to satisfy the requirements of this section, including:*

- i. *The number, species, location, and heights of trees, shrubs, and groundcover;*
- ii. *The location and dimensions of planting areas and streetyards;*
- iii. *The location and size of earthen berms;*
- iv. *The location, size, and construction material of fences, walls, and wall planters;*

**c. EXISTING TREES TO BE PRESERVED**

*i. The number, location, species, height, and diameter at breast height (DBH) of existing trees to be preserved for credit as per **Section 6.2.1, Landscaping and Tree Preservation Standards – Winston-Salem**, where individual trees are being preserved;*

*ii. A general description of the character, species mixture, health, and age of trees present in tree stands where tree stands are being preserved for credit; and*

**d. BARRIERS**

*Refer to **Section 6.2.1C.3.f, Tree Protection During Construction**.*

**2. DELAY OF LANDSCAPING**

*If the required landscaping has not been installed at the time of a request for an occupancy permit, and the Director of Inspections determines that the unavailability of plant materials or adverse weather conditions prohibit the timely completion of planting, an occupancy permit may be issued prior to installation of required landscaping, subject to the following:*

**a. COMPLETION SCHEDULE**

*The applicant shall sign a contract specifying that the work shall be completed within the six (6) months immediately following the date of application for an occupancy permit; and*

**b. SECURITY**

*i. An improvement security in the form of an escrow account or other instrument shall be required prior to issuance of an occupancy permit.*

ii. *The improvement security shall be in an amount deemed sufficient by the Director of Inspections to cover all costs of required landscaping or screening which has not been installed. Such security shall be valid until the work is completed in accordance with the permit.*

iii. *The security shall be forfeited upon violation of this section and shall be used toward completion of all planned improvements.*

iv. *Any moneys in excess of the cost of installing required landscaping shall be refunded to the applicant.*

v. *The security shall be released when the Director of Inspections certifies that all requirements of this Ordinance have been met.*

**3. COMPLIANCE WITH SIGHT EASEMENT REQUIREMENTS**

*Landscaping required by this section shall comply with the minimum State or local sight easement requirements for street intersections and driveways.*

**4. OBSTRUCTION OF PEDESTRIAN ROUTES**

*Required landscaping shall not obstruct or impede public pedestrian routes including sidewalks and greenway trails.*

**5. PROTECTION OF PLANTING AREAS**

*Whenever any planting areas required by this section are adjacent to motor vehicle surface areas, motor vehicle display areas, or outdoor storage areas, the planting areas shall be protected from motor vehicle intrusion, and damage from excessive motor vehicle lubricants or fuels.*

**6. STABILIZATION OF SOIL SURFACE**

a. *The soil surface of all planting areas required by this section shall be stabilized to prevent erosion.*

b. *In addition to required interior trees and shrubs, the soil surfaces of planting areas shall contain live groundcover, mulch, live shrubs, permeable pedestrian paver blocks, or a combination thereof.*

**7. PLANTING AND MAINTENANCE**

*The following planting and maintenance provisions of this Ordinance shall apply to new trees and existing trees planted after June 5, 1988.*

**a. GENERAL STANDARDS**

*The use of American National Standards Institute (ANSI) A300 standards shall be required for the planting and maintenance of all required landscaping.*

**b. TREE TOPPING**

*Topping of any tree required by this Ordinance as defined by the ANSI A300 standards shall be prohibited.*

**c. MAINTENANCE OF PLANTINGS REQUIRED BY THESE STANDARDS**

i. *The landowner is responsible for maintaining all required plant materials in good health.*

ii. *Any dead or missing plants must be replaced with new planting which meets the minimum installation dimension standards of this section.*

iii. *Plant replacement shall take place within one month of written notification by the Director of Inspections.*

iv. *In the event that plant material is severely damaged due to an unusual weather occurrence or other act of nature, or if replacement plantings are unavailable within one month of written notification, the land owner will have six (6) months from the date of written notification to replace plantings.*

v. *Requirements for the maintenance of existing or newly planted trees required by the tree preservation and planting standards of this Ordinance, and located on individual lots within residential subdivisions, are in **Section 6.2.1C.6, Tree Maintenance Requirements.***

**8. ENFORCEMENT AND PENALTIES**

**a. ENFORCEMENT**

The Director of Inspections or designee shall conduct site inspections to ensure compliance with the provisions of this Ordinance prior to the issuance of grading permits as well as prior to the issuance of a Certificate of Occupancy (CO), except where existing trees in residential subdivisions are preserved in accordance with **Section 6.2.1C, Tree Preservation and Planting**, compliance shall only be ensured prior to plat approval.

**b. RESERVED**

**9. COMBINING PLANTING AREA AND BUFFERYARD REQUIREMENTS**

**a.** Where motor vehicle surface area plant materials and bufferyard plant materials are required on the same property, trees may be located in such a manner as to simultaneously satisfy both requirements.

**b.** Required planting areas shall not be cumulative; however, the greater of the planting areas specified in **Section 6.3, Bufferyard Standards**, or this section shall be the required planting area.

**10. OVERHEAD UTILITY LINES**

The location of overhead utility lines shall be considered during the placement or preservation of required trees. The maximum mature height of required trees shall be determined as follows: (Suggested plant materials are listed in **Section 6.2.1J, Suggested Plant Materials List**.)

**a. SMALL VARIETIES**

Small variety trees shall be used when located within twenty-five (25) feet, measured horizontally, from the nearest overhead utility lines(s).

**b. SMALL OR MEDIUM VARIETIES**

Small or medium variety trees shall be used when located twenty-five (25) to thirty-five (35) feet, measured horizontally, from the nearest overhead utility line(s).

**c. SMALL, MEDIUM, OR LARGE VARIETIES**

Small, medium, or large variety trees may be used when located more than thirty-five (35) feet, measured horizontally, from the nearest overhead utility line(s).

**11. SAFETY AND SECURITY**

Safety and security concerns should receive prominent consideration during the selection and placement of landscape materials.

**12. FIRE PROTECTION EQUIPMENT**

**a.** A minimum five (5) foot radius containing no plant materials or structural elements other than groundcover plants shall be maintained around all fire protection equipment, including:

- i.** Fire hydrants;
- ii.** Post indicator valves; and
- iii.** Siamese connectors.

**b.** Obvious sight lines to the fire protection equipment shall be maintained at all times.

**13. OFF-STREET PARKING REDUCTION**

A reduction in the amount of required off-street parking is permitted in accordance with the alternatives and incentives provisions of the parking requirements in **Section 6.1.5H, Parking Reduction for Required Landscaping in Motor Vehicle Use Areas**, for the installation of landscaping required by the landscaping standards of this Ordinance.

**C. TREE PRESERVATION AND PLANTING**

**1. EXEMPTIONS FROM TREE PRESERVATION AND PLANTING REQUIREMENTS**

The following are exempt from the tree preservation and planting requirements of this Ordinance:

- a.** Development sites located in areas zoned CB, CI, sites zoned PB in Growth Management Area (GMA) 1, and all sites in GMA 5.
- b.** Individual residential lots platted prior to the adoption of this Ordinance.
- c.** Farm use activities and structures on bona-fide farms.

- d. *Minor subdivisions.*
- e. *Redevelopment of sites zoned PB, GB, MU-S, and C which demonstrate a pedestrian-oriented urban form in accordance with **Section 4.8.3B.2, District Objectives**. Redevelopment of sites zoned PB, GB, MU-S, and C shall be exempt from the requirements of **Section 6.2.1C, Tree Preservation and Planting**.*
- f. *Instead, such development shall include one large variety street tree per fifty (50) feet of street frontage. These trees shall be spaced forty (40) to sixty (60) feet apart and shall be located within the street right-of-way.*
- g. *Existing development and all development with plans or applications approved or accepted into the review process prior to the effective date of this Ordinance.*

**2. REQUIREMENTS IN TYPE 1 AREAS**

**a. TYPE 1 AREAS DEFINED**

*Type 1 Areas include the following locations and types of development:*

- i. *Proposals where a grading permit is required for development of five (5) acres or less;*
- ii. *Land in the PB district;*
- iii. *Development entirely within activity centers designated in Legacy or adopted area plans;*
- iv. *Redevelopment of already-developed non-residentially zoned sites containing existing nonresidential structures; and*
- v. *Qualifying residential development zoned RS or RM-5.*

**b. TREE SAVE AREA DEFINED**

- i. *Tree save area(s) (TSA) shall be one or more areas where existing trees, along with their critical root zones (CRZ), shall be preserved and maintained.*
- ii. *The purpose of the TSA is to encourage the preservation of individual healthy trees that are six (6) inches or greater in diameter at breast height (DBH)(4.5 feet above ground), and/or healthy stands of trees containing a variety of tree species with trees of various ages, including mature and maturing trees, meeting the requirements of this Ordinance.*
- iii. *In determining the extent of a tree stand area, trees four (4) inches or greater DBH may be considered within the tree save area boundaries.*
- iv. *Tree save area(s) may also include new trees which satisfy the requirements of **Section 6.2.1C.2.e, Tree Planting Requirements for Multifamily and Nonresidential Development**.*

**c. CALCULATION OF REQUIRED TREE SAVE AREA**

- i. *Calculations for tree save areas (TSA) shall exclude the following:*
  - 1. *Square footage areas for existing and proposed public street rights-of-way;*
  - 2. *Existing utility easements;*
  - 3. *Existing water bodies; and*
  - 4. *New water bodies required to satisfy the stormwater management requirements otherwise required by law or ordinance.*
- ii. *The combined square footage of these areas shall be deleted from the total parcel area for new development and from the limits of disturbed areas for additional development to an already developed site before the required percentage of TSA is calculated.*
- iii. *Tree save area shall be calculated as follows:*

**1. STANDS OF TREES**

- 1.01. *The tree save area for a stand of trees shall be calculated as the acreage that stand of trees occupies.*
- 1.02. *Stands of trees shall be exempt from the species requirements of this Ordinance (**Section 6.2.1J, Suggested Plant Materials List**) as long as a stand of trees is determined to meet the intent of the tree save area requirements of this Ordinance.*

**1.03.** *However, no stand consisting primarily of species prohibited from ordinance credit in accordance with **Section 6.2.1J.5**, shall be counted towards the tree save area requirements.*

**2. INDIVIDUAL TREES**

*The tree save area for an individual existing tree shall be defined as the critical root zone for that individual tree or the sum of the critical root zones of multiple individual trees.*

**2.01.** *Each large variety tree 6"—9" inches in caliper shall equal five hundred (500) square feet of TSA credit;*

**2.02.** *Each large variety tree 9.01"—12" in caliper shall equal seven hundred fifty (750) square feet of TSA credit;*

**2.03.** *Each large variety tree 12.01"—24" in caliper shall equal one thousand eight hundred (1,800) square feet of TSA credit;*

**2.04.** *Each large variety tree 24.01"—36" in caliper shall equal three thousand (3,000) square feet of TSA credit; and*

**2.05.** *Each large variety tree greater than 36.01" in caliper shall equal four thousand (4,000) square feet of TSA credit.*

**iv.** *Either method of calculation listed above, or a combination of both methods, may be used to satisfy the tree save area requirements of this Ordinance.*

**d. REQUIRED TYPE 1 TREE SAVE AREA IN LOCATIONS OFF-LIMITS TO DEVELOPMENT**

**i.** *The minimum tree save area for new residential subdivisions, multifamily development, and nonresidential development which requires a grading permit shall be ten percent (10%) of the development site, except where less than ten percent (10%) of the development site exists in trees all existing trees must be saved.*

**ii.** *Ten percent (10%) of any existing developed area being redeveloped shall be saved for TSA credit. This tree save area shall be in the form of areas off-limits to development.*

**iii.** *Development projects are only required to save existing trees for TSA credit in the following areas, which are considered off-limits to development by the governmental authority:*

- 1.** *Floodplains;*
- 2.** *Undisturbed stream buffers; and*
- 3.** *Wetlands.*

**iv.** *In addition, RS and RM-5 zoned sites greater than five (5) acres shall have a minimum tree save area of twelve percent (12%) of the development site, to be determined as follows:*

- 1.** *Existing trees shall be saved in the areas specified in paragraph **ii** above up to the twelve percent (12%) of site requirement.*
- 2.** *If insufficient trees exist in the areas covered by **1** above to meet the twelve percent (12%) requirement, then existing trees anywhere on the site may be saved to meet the twelve percent (12%) of site requirement; or*
- 3.** *If the site plan otherwise fails to save a minimum of twelve percent (12%) of the site in existing trees, then it shall at a minimum in addition to the trees saved under **1** and **2** above, also save the existing trees in a forty (40) foot deep streetyard across the full length of adjoining major and minor thoroughfares, and the existing trees in a thirty (30) foot deep zone along the remainder of the site perimeter, excluding any perimeter adjoining existing local or connector streets (except where site plan identified public right-of-way or utility easements, development signage and access to the development are located).*
- 4.** *If a minimum of twelve percent (12%) of the site is not saved in existing trees under **1** through **3** above, then the difference shall be met through new tree planting meeting the standards of **Section 6.2.1C.2.e, Tree Planting Requirements for Multifamily and Nonresidential Development.***

v. *Alternative compliance or removing existing trees for recreational purposes in floodplains: Refer to **Section 6.2.1C.4, Alternative Compliance for Determination of Tree Save Area.***

e. **TREE PLANTING REQUIREMENTS FOR MULTIFAMILY AND NONRESIDENTIAL DEVELOPMENT**

i. *On multifamily and nonresidential development sites where less than ten percent (10%) of a development site contains trees preserved in accordance with **Section 6.2.1C.2.d, Required Type 1 Tree Save Area in Locations Off-Limits to Development**, supplementary new large variety tree plantings in accordance with **Section 6.2.1J, Suggested Plant Materials List**, and **Section 6.2.1D.2.c, Number and Spacing of Trees**, shall be required until the minimum tree save area requirements of the development site have been met.*

ii. *Each new large variety tree planted shall be equal to seven hundred fifty (750) square feet of required tree save area. Alternatively, trees existing outside of areas defined as off-limits to development in **Section 6.2.1C.2.d, Required Type 1 Tree Save Area in Locations Off-Limits to Development**, may be saved for credit in accordance with **Section 6.2.1C.2.c, Calculation of Required Tree Save Area.***

f. **TREE PROTECTION DURING CONSTRUCTION**

*To receive credit for existing trees proposed for preservation, the TSA must be protected from direct and indirect root damage, and trunk and crown disturbance. The following standards shall apply:*

- i. *The tree save area (TSA) shall include all area located within the critical root zone.*
- ii. *Construction site activities, such as parking, material storage, dirt stockpiling, concrete washout, and other similar activities, shall not be permitted within a tree save area (TSA).*
- iii. *Protective barriers shall be installed around the tree save area (TSA) as necessary prior to the issuance of a grading permit.*

**3. REQUIREMENTS IN TYPE 2 AREAS**

a. **TYPE 2 AREAS DEFINED**

*Type 2 Areas include the following locations and types of development:*

- i. *Proposals where a grading permit is required for development greater than five (5) acres;*
- ii. *Development which is not zoned PB; and*
- iii. *Development which is not located within activity centers as designated in Legacy or adopted area plans.*

b. **TREE SAVE AREA DEFINED**

i. *Tree save area(s) (TSA) shall be one or more areas where existing trees, along with their critical root zones (CRZ), shall be preserved and maintained.*

ii. *The purpose of the TSA is to encourage the preservation of individual healthy trees that are six (6) inches or greater in diameter at breast height (DBH)(4.5 feet above ground), and/or healthy stands of trees containing a variety of tree species with trees of various ages, including mature and maturing trees, meeting the requirements of this Ordinance.*

iii. *In determining the extent of a tree stand area, trees four (4) inches or greater DBH may be considered within the tree save area boundaries.*

iv. *Tree save area(s) may also include new trees which satisfy the requirements of **Section 6.2.1C.3.e, Requirements for Sites Without Adequate Existing Trees.***

c. **CALCULATION OF REQUIRED TREE SAVE AREA**

i. *Calculations for tree save areas (TSA) shall exclude the following:*

- 1. *Square footage areas for existing and proposed public street rights-of-way;*
- 2. *Existing utility easements;*
- 3. *Existing water bodies; and*
- 4. *New water bodies required to satisfy the stormwater management requirements otherwise required by law or ordinance.*

ii. *The combined square footage of these areas shall be deleted from the total parcel area for new development and from the limits of disturbed areas for additional development to an already developed site before the required percentage of TSA is calculated.*

iii. *Tree save area shall be calculated as follows:*

**1. STANDS OF TREES**

1.01. *The Tree Save Area for a stand of trees shall be calculated as the acreage that stand of trees occupies.*

1.02. *Stands of trees shall be exempt from the species requirements of this Ordinance (**Section 6.2.1J, Suggested Plant Materials List**), as long as a stand of trees is determined to meet the intent of the Tree Save Area requirements of this Ordinance.*

1.03. *However, no stand consisting primarily of species prohibited from ordinance credit in accordance with **Section 6.2.1J.5** shall be counted towards the Tree Save Area requirements of the Ordinance.*

1.04. *Where a development exclusively uses the tree stand method of TSA calculation, it shall receive a reduction in the required TSA of one percent (1%) of the development site; alternatively, a residential development may elect to receive a ten percent (10%) bonus in allowed density.*

**2. INDIVIDUAL TREES**

2.01. *The tree save area for an individual existing tree shall be defined as the critical root zone for that individual tree or the sum of the critical root zones of multiple individual trees.*

2.02. *Each large variety tree 6"—9" in caliper shall equal five hundred (500) square feet of TSA credit;*

2.03. *Each large variety tree 9.01"—12" in caliper shall equal seven hundred fifty (750) square feet of TSA credit;*

2.04. *Each large variety tree 12.01"—24" in caliper shall equal one thousand eight hundred (1,800) square feet of TSA credit;*

2.05. *Each large variety tree 24.01"—36" in caliper shall equal three thousand (3,000) square feet of TSA credit; and*

2.06. *Each large variety tree greater than 36.01" in caliper shall equal four thousand (4,000) square feet of TSA credit.*

iv. *Either method of calculation listed above, or a combination of both methods, may be used to satisfy the tree save area requirements of this Ordinance.*

**d. REQUIRED TREE SAVE AREA**

**i. MULTIFAMILY DEVELOPMENT, EXCLUDING RM-5**

1. *The minimum tree save area for new multifamily development, excluding RM-5, shall be twelve percent (12%) of the development site.*

2. *TSA requirements may be fulfilled by trees on commonly owned land or trees on privately owned individual residential lots.*

**ii. NEW NONRESIDENTIAL DEVELOPMENT WHICH REQUIRES A GRADING PERMIT**

*The minimum tree save area for nonresidential development requiring a grading permit shall be ten percent (10%) of the development site.*

**iii. NEW DEVELOPMENT ZONED MU-S**

*The minimum tree save area for development zoned MU-S shall be determined on an individual basis through the special use district zoning process.*

**iv. ALTERNATIVE COMPLIANCE**



Refer to **Section 6.2.1C.4, Alternative Compliance for Determination of Tree Save Area.**

**e. REQUIREMENTS FOR SITES WITHOUT ADEQUATE EXISTING TREES**

**i.** On development sites containing less than the minimum tree coverage required by **Section 6.2.1C.2.c, Calculation of Required Tree Save Area**, supplementary new large variety tree plantings in accordance with **Section 6.2.1J, Suggested Plant Materials List**, shall be required until the minimum tree save area requirements of the development site have been met.

**ii.** Each new large variety tree planted shall be equal to seven hundred fifty (750) square feet of required tree save area.

**f. TREE PROTECTION DURING CONSTRUCTION**

To receive credit for existing trees proposed for preservation, the TSA must be protected from direct and indirect root damage, and trunk and crown disturbance. The following standards shall apply:

**i.** The tree save area (TSA) shall include all area located within the critical root zone.

**ii.** Construction site activities, such as parking, material storage, dirt stockpiling, concrete washout, and other similar activities, shall not be permitted within a tree save area (TSA).

**iii.** Protective barriers shall be installed around the tree save area (TSA) as necessary prior to the issuance of a grading permit.

**4. ALTERNATIVE COMPLIANCE FOR DETERMINATION OF TREE SAVE AREA**

**a. ALTERNATIVE COMPLIANCE FOR REMOVING EXISTING REQUIRED TREES**

**i.** In situations where the preservation of some or all of the required trees on site would prevent the reasonable development of a site, the Inspections Director or designee may waive some or all of the tree preservation requirements of this section. In making his decision, the Inspections Director may consider the following factors:

1. Site layout, including whether there are reasonable site layout options available that would further minimize the need to waive or reduce the tree preservation requirements.
2. Conformance of the proposed development with the Legacy recommendations of balancing open space preservation with encouraging an urban form of development.
3. Conformance of the proposed development with the recommendations of area plans and other adopted documents relating to or affecting the planned uses of land for the site in question.
4. Topography.
5. Surrounding development patterns.
6. The size, health, and species of existing trees proposed to be removed.
7. Other site development issues not identified above.

**ii.** Where existing trees are not preserved, the replanting requirements of **Section 6.2.1C.3.e, Requirements for Sites Without Adequate Existing Trees**, shall be met. Alternatively, qualifying existing trees on contiguous parcels may also be preserved for alternative compliance credit. TSA credit may also be provided through the acquisition, donation, and acceptance of forested parkland by the governmental jurisdiction which holds zoning authority for the jurisdiction in which the development takes place.

**iii.** Appeals of the decision of the Inspections Director may be made to the Elected Body.

**b. ALTERNATIVE COMPLIANCE FOR REMOVING TREES IN FLOODPLAINS**

**i.** Development proposals for recreational purposes which remove existing trees in floodplains that would otherwise be required to be saved in accordance with **Section 6.2.1C.2.d, Required Type 1 Tree Save Area in Locations Off-Limits to Development**, may be approved where existing trees meeting the requirements of **Section 6.2.1C, Tree Preservation and Planting**, are preserved elsewhere on site.

**ii.** Alternatively, development proposals may be approved through special use district zoning.

**5. INCENTIVES FOR INCREASED TREE SAVE AREA**

**a. SETBACK REDUCTION FOR INCREASED TREE SAVE AREA**

*Developments which set aside twenty percent (20%) or more of a site as tree save area in common open space shall receive reduced internal and sideyard setbacks of up to thirty-five percent (35%) of requirements.*

**b. RIBBON PAVING FOR INCREASED TREE SAVE AREA**

*i. Developments which set aside thirty percent (30%) or more of a site as tree save area in common open space may utilize ribbon paving and reduced pavement widths for internal streets with the approval of the Assistant City Manager of Public Works.*

*ii. Additionally, such development may use gravel or other improved soft surface as a substitute for paved sidewalks which are internal to the development.*

**6. TREE MAINTENANCE REQUIREMENTS**

**a. MAINTENANCE OF TREES SATISFYING THE TREE PRESERVATION REQUIREMENTS**

**i. RESIDENTIAL SUBDIVISIONS**

*1. The landowner is responsible for maintaining all new trees on individual lots within residential subdivisions which satisfy the requirements of **Section 6.2.1C, Tree Preservation and Planting**, until a certificate of occupancy (CO) has been issued.*

*2. All existing trees on individual lots and common open space within residential subdivisions shall be maintained until plat approval.*

**ii. MULTIFAMILY AND NONRESIDENTIAL DEVELOPMENT**

*1. New and existing trees which meet the tree preservation requirements in multifamily developments and nonresidential developments shall be maintained in accordance with the requirements of **Section 6.2.1B.7, Planting and Maintenance**.*

*2. Existing or newly planted trees also used to satisfy the requirements of **Section 6.2.1A.2, Applicability**, of this Ordinance shall also be maintained according to **Section 6.2.1B.7, Planting and Maintenance**.*

**D. MOTOR VEHICLE SURFACE AREA LANDSCAPING STANDARDS**

**1. GENERAL REQUIREMENTS**

**a. EXEMPTION**

*This section shall not apply to single family residential buildings.*

**b. APPLICABILITY**

*This section shall apply to any motor vehicle surface area or portions thereof built after March 7, 1988, except where otherwise specified.*

**c. EXPANSION OF PREEXISTING MOTOR VEHICLE SURFACE AREAS**

*When preexisting motor vehicle surface areas are expanded:*

**i. REQUIRED INTERIOR PLANTINGS**

*Required interior plantings may be dispersed throughout the entire motor vehicle surface area in accordance with **Section 6.2.1D.3, Interior Motor Vehicle Surface Area Plantings**.*

**ii. STREETYARD WIDTH**

*Streetyard width may be reduced to a minimum of fifty percent (50%) of the required width, provided the minimum required streetyard area and plant quantities for the expansion are installed; and provided such streetyard trees shall be provided a planting area with a minimum radius of seven (7) feet.*

**d. EXPANSION, REDEVELOPMENT OR REPLACEMENT OF EXISTING BUILDINGS**

*i. When fifty percent (50%) or less of the original gross floor area of an existing building is expanded, or replaced, the developer shall install motor vehicle surface area plantings at a rate corresponding to the area of the expansion, redevelopment, or replacement.*

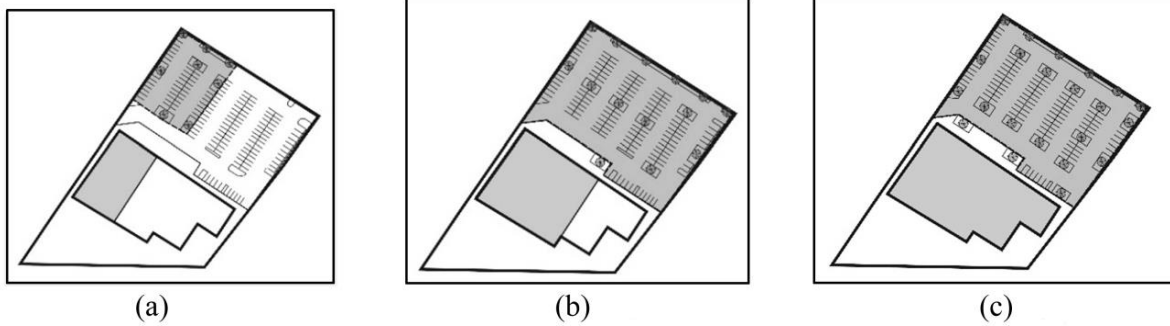
*ii. One (1) large variety tree shall be required in all cases.*

*iii. For expansion or redevelopment areas between fifty-one percent (51%) and eighty percent (80%) of the original gross floor area of an existing building, the developer shall install fifty percent (50%) of required motor*

vehicle surface area plantings in accordance with **Section 6.2.1D.3, Interior Motor Vehicle Surface Area Plantings.**

iv. For expansion or redevelopment areas greater than eighty percent (80%) of the original gross floor area of an existing building, the developer shall fully install required motor vehicle surface area plantings in accordance with **Section 6.2.1D.3, Interior Motor Vehicle Surface Area Plantings.**

**FIGURE 6.2.1.D: LANDSCAPING REQUIREMENTS FOR EXPANSIONS**



v. Plantings for the above requirements may be dispersed throughout the entire motor vehicle surface area.

vi. The provisions of this section shall preempt the spacing requirement contained in **Section 6.2.1D.3.e, Distance of Parking Spaces to Trees.**

**e. ALTERNATIVE COMPLIANCE**

i. An applicant may propose a landscaping plan which varies from the strict application of the provisions of this section in order to accommodate unique characteristics of the site or to utilize innovative design.

ii. Application for alternative compliance shall include a site plan following the requirements specified in **Section 3.2.11, Site Plan**, and shall be approved by the Planning Board only upon a finding that the proposed landscaping plan fulfills the intent and purposes of this section as well as or better than would strict conformance with the requirements of this section.

**2. STREETYARDS**

A landscaped streetyard shall be required for all motor vehicle surface areas located within one hundred (100) feet of a street right-of-way or vehicular right-of-way, including controlled access highways, whether or not it may provide access to the site, unless separated by an intervening building.

**a. WIDTH**

i. Minimum streetyard width is ten (10) feet, and shall be measured perpendicular to the street right-of-way.

ii. The streetyard shall be positioned between the motor vehicle surface area and street right-of-way.

iii. Minimum streetyard width for new motor vehicle surface areas installed in conjunction with the expansion or redevelopment of existing non-residentially zoned sites in GMA 2 smaller than one acre in size shall be five (5) feet.

iv. Minimum streetyard width shall also be five (5) feet for new nonresidential development in GMA 2 on sites of any size, regardless of zoning district, that meet the requirements of **Section 4.6.6C, Supplementary District Standards.**

**b. IMPERVIOUS SURFACE COVER**

*A maximum of fifteen percent (15%) of the required streetyard may be covered with impervious surface cover which may be used for walkways, fountains, walls, wall planters, or utility meters and vaults, but may not be used for motor vehicle surface or display, outdoor storage, private utility service, or service areas.*

**c. NUMBER AND SPACING OF TREES**

- i. Each streetyard shall contain a minimum of two (2) deciduous or evergreen large variety trees per one hundred (100) linear feet, excluding points of motor vehicle ingress or egress.*
- ii. In no case shall any streetyard contain less than one tree.*
- iii. Required trees must be a minimum of eight (8) feet in height at installation and shall be at least two (2) inches in diameter measured six (6) inches above ground level.*
- iv. Where two (2) or more streetyard trees are required, all trees shall be planted with the center of the main trunks twenty (20) to seventy-five (75) feet apart.*
- v. Existing deciduous trees located in the abutting street right-of-way may be used to satisfy the distribution requirements in this section.*
- vi. Small or medium variety trees may be used where overhead utility lines exist in accordance with **Section 6.2.1B.10, Overhead Utility Lines.***

**d. OTHER STREETYARD COMPONENTS**

*In addition to required trees, the landowner or developer shall use one of the following, or a combination thereof, to satisfy streetyard requirements:*

**i. NATURAL SHRUBS**

- 1. Streetyard shrubs must be a minimum of eighteen (18) inches in height at installation, with a minimum height of thirty-six (36) inches within three (3) years after installation.*
- 2. Shrubs must be a locally adapted species which retain foliage to within six (6) inches above ground level.*
- 3. Shrubs shall be spaced no more than eighteen (18) inches, edge to edge.*
- 4. No more than thirty percent (30%) of streetyard shrubs shall be deciduous.*

**ii. FENCES AND WALLS**

*A streetyard fence or wall shall be a minimum of thirty-six (36) inches in height, opaque, and shall be constructed of masonry, stone, or wooden material, or of the same material as that of the principal building.*

**iii. WALL PLANTERS**

- 1. A streetyard wall planter shall be constructed of masonry, stone, or other permanent material.*
- 2. At installation, the minimum combined height of wall planters and shrubs shall be twenty-four (24) inches.*
- 3. Within three (3) years after installation, the combined height of wall planters and shrubs shall be no less than thirty-six (36) inches.*
- 4. The effective planting width of a streetyard wall planter shall be no less than thirty-six (36) inches; however, where required streetyard trees are installed in wall planters, the effective planting width of the wall planters shall be no less than seven (7) feet.*
- 5. A minimum of one shrub shall be required for every five (5) square feet of wall planter area.*

**iv. EARTHEN BERMS**

- 1. At installation, streetyard berms shall have a minimum height of eighteen (18) inches, a minimum crown width of two (2) feet, and a side slope with a width to height ratio of no greater than two (2) to one (2:1).*
- 2. The entire berm shall be planted and covered with live vegetation.*
- 3. Berm shrubs shall be a minimum of one foot in height at installation and shall be spaced no greater than eighteen (18) inches, edge to edge.*

4. *Within three (3) years after installation, the combined height of berm and shrubs must be at least thirty-six (36) inches.*
5. *Streetyard berms which are thirty-six (36) inches or greater in height at installation shall not be required to contain shrubs; however, streetyard trees shall still be required as specified in this section.*

**e. CB AND CI DISTRICTS**

- i. *In the CB and CI Districts, a minimum two (2) foot wide strip planted with trees and shrubs in accordance with this section or a three (3) foot high masonry wall shall be provided.*
- ii. *Unfinished concrete masonry unit (CMU) walls shall be prohibited. Split face CMU is permitted.*
- iii. *In the CI District where the amount of off-street surface parking exceeds twenty-five (25) spaces between the building wall and the street, the minimum streetyard width requirements of **Section 6.2.1D.2.a, Width**, shall be met.*

**f. PB DISTRICT**

1. *In the PB District within GMA 1, a minimum two (2) foot wide strip planted with trees and shrubs in accordance with this section shall be provided.*
2. *Any required or provided trees within the streetyard shall be located within a minimum seven (7) foot wide, fifty (50) square foot planting area.*

**3. INTERIOR MOTOR VEHICLE SURFACE AREA PLANTINGS**

*In addition to the required streetyard, all motor vehicle surface areas shall contain landscaped planting areas, as follows:*

**a. LOCATION OF PLANTINGS**

*Interior planting areas shall be located adjacent to motor vehicle surface area edges or within the interior as islands or medians, and may contain berms of the minimum dimensions specified in **Section 6.2.1D.2.d.iv, Earthen Berms**.*

**b. SIZE**

- i. *Each planting area shall allocate a minimum of one hundred fifty (150) square feet per tree, with a minimum radius of seven (7) feet for small or medium variety trees.*
- ii. *A minimum planting area of six hundred (600) square feet shall be required for each large variety tree.*
- iii. *Each large variety tree planted shall provide a seven hundred fifty (750) square foot credit towards the requirements of **Section 6.2.1C, Tree Preservation and Planting**.*

**c. REQUIRED TREES IN PLANTING AREA**

- i. *Each planting area shall contain at least one deciduous or evergreen large variety tree with a minimum height of eight (8) feet at the time of installation, and a minimum diameter of two (2) inches measured six (6) inches above ground level.*
- ii. *Small or medium variety trees may be used where overhead utility lines exist in accordance with **Section 6.2.1B.10, Overhead Utility Lines**.*

**d. RATIO**

- i. *One large variety tree shall be used for every five thousand (5,000) square feet of motor vehicle surface area.*
- ii. *One small or medium variety deciduous or evergreen tree shall be required for every two thousand five hundred (2,500) square feet of motor vehicle surface area where overhead utility lines exist in accordance with **Section 6.2.1B.10, Overhead Utility Lines**.*
- iii. *The aforementioned ratio requirement shall not apply to the expansion or redevelopment of existing non-residentially zoned sites in GMA 2 which are smaller than one (1) acre in size, or change of use to a high intensity use as identified in **Table 5.1.1, Principal Use Table**.*

iv. For these sites, a landscaping area(s) totaling at least one hundred (100) square feet shall be required for every ten thousand (10,000) square feet of motor vehicle surface area.

v. One small variety tree with a minimum height of eight (8) feet at the time of installation and a minimum diameter of two (2) inches measured six (6) inches above ground level, and four (4) natural shrubs meeting the standards of **Section 6.2.1D.2.d.i, Natural Shrubs**, shall be required for every one hundred (100) square feet of planting area.

vi. Planting areas shall be at least five (5) feet wide, unless otherwise approved by the Director of Planning and Development Services, or a designee.

vii. Existing parking spaces removed to accommodate this landscaping requirement shall not be required to be replaced elsewhere on site.

**e. DISTANCE OF PARKING SPACES TO TREES**

i. No parking space shall be located more than seventy-five (75) feet from the trunk of a required large variety tree, except where overhead utility lines exist in accordance with **Section 6.2.1B.10, Overhead Utility Lines** no parking space shall be located more than fifty (50) feet from the trunk of a required small or medium variety tree, unless otherwise authorized in this Ordinance.

ii. When parking spaces exceed the maximum allowance listed in **Table 6.1.2A., Motor Vehicle and Bicycle Parking Space Requirements**, supplemental landscaping shall be provided so that no parking space shall be more than fifty (50) feet from the trunk of a required large variety tree located within a minimum planting area of six hundred (600) square feet.

iii. For the redevelopment of existing non-residentially zoned sites in GMA 2 which are smaller than one (1) acre in size, or change of use to a high intensity use as identified in **Table 5.1.1, Principal Use Table**, the aforementioned minimum distance requirement shall not apply. Instead, the maximum distance between a parking space and a required landscaping area shall be seventy-five (75) feet.

**f. LOADING/MANEUVERING AREAS**

For loading docks or other maneuvering areas where placement of trees in the interior of the site is impractical, the required number of trees may be clustered around the edge of such areas, with the approval of the Director of Planning and Development Services, or a designee.

**g. CREDIT FOR STREETYARD OR BUFFERYARD TREES**

Deciduous or broadleaf evergreen trees used as streetyard or bufferyard plantings may be used as credit toward interior planting area requirements, provided that streetyard or bufferyard plantings meet the size requirements of **Section 6.3.3B, Design Requirements**, and the distance requirements of **Section 6.2.1D.3.e, Distance of Parking Spaces to Trees**.

**h. CREDIT FOR BUFFERYARD AREA**

The landscaped bufferyard area provided to meet the requirements of **Section 6.3, Bufferyard Standards**, and located adjacent to a motor vehicle use area may be counted toward the interior planting requirement.

**i. ALTERNATIVE COMPLIANCE FOR LARGE PARKING LOTS**

i. An applicant whose contiguous parking area exceeds five hundred (500) spaces may propose a landscaping plan which varies from the strict application of the provisions of this section in order to accommodate unique characteristics of the site or to utilize innovative design.

ii. Application for alternative compliance shall include a site plan following the requirements specified in **Section 3.2.11, Site Plan**, and shall be approved by the Planning Board only upon a finding that the proposed landscaping plan fulfills the intent and purposes of this section as well as or better than would strict conformance with the requirements of this section.

**E. MOTOR VEHICLE DISPLAY AREA LANDSCAPING STANDARDS**

**1. GENERAL REQUIREMENTS**

**a. APPLICABILITY**

This section shall apply to any motor vehicle display area, or portions thereof, built after March 7, 1988.

**b. EXPANSION OF PREEXISTING MOTOR VEHICLE SURFACE AREAS**

*When preexisting motor vehicle display areas are expanded, streetyard width may be reduced to a minimum of five (5) feet, provided the minimum required streetyard area and plant quantities for the expansion are installed, and provided each streetyard tree shall be provided a planting area with a minimum radius of seven (7) feet.*

**c. LANDSCAPING REQUIREMENTS**

*Motor vehicle display areas shall comply with the general landscaping requirements of **Section 6.2.1D, Motor Vehicle Surface Area Landscaping Standards**.*

**2. STREETYARDS**

*A landscaped streetyard shall be required as specified in **Section 6.2.1D.2, Streetyards**, except:*

**a. NATURAL SHRUBS**

*Any streetyard shrubs, wall planters, earthen berms, or combinations thereof, shall be installed at a minimum height of eighteen (18) inches, and shall reach a minimum height of thirty (30) inches within three (3) years after installation.*

**b. FENCES AND WALLS**

*Closed fences or walls shall be installed at a minimum height of thirty (30) inches.*

**F. OUTDOOR STORAGE AREA SCREENING STANDARDS**

**1. APPLICABILITY**

**a.** *Any outdoor storage area not screened from any public or private street by an intervening building built after the adoption of this Ordinance with a linear dimension of fifteen (15) feet or greater, or any dumpster with a linear dimension of five (5) feet or greater and not screened by an intervening building shall be screened from view from any street right-of-way or vehicular right-of-way including controlled access highways, whether or not it may provide access to the site, for its entire length except for necessary access.*

**b.** *For nonresidential development in GMA 2, outdoor storage area screening shall be required for new development, additions of any size to existing buildings, or a change of use to a high intensity use as identified in **Table 5.1.1, Principal Use Table**.*

**2. SCREENING**

*Outdoor storage area screening shall be provided as specified in either of the conditions in **Section 6.2.1F, Outdoor Storage Area Screening Standards**, or as a combination of the two (2) conditions:*

**a. FENCING**

- i.** *A fence or wall may be used to screen an outdoor storage area.*
- ii.** *The fence or wall shall be at least six (6) feet in height, opaque and of masonry, stone or wooden material, or of the same material as that of the principal building.*

**b. PLANTINGS**

*Natural evergreen plant materials may also be used to screen an outdoor storage area as follows: (Suggested plant materials are listed in **Section 6.2.1J, Suggested Plant Materials List**)*

**i. MINIMUM HEIGHT**

*The minimum height of the plant material shall be six (6) feet at installation; and*

**ii. SPACING**

*The spacing of the planting shall be in a double-row configuration, staggered, with five (5) foot spacing between the centers of the main trunks.*

**G. UTILITY SERVICE AREA SCREENING STANDARDS**

**1. APPLICABILITY**

*Utility service area structures built after the adoption of this Ordinance shall meet the following screening requirements:*

**a. INDIVIDUAL STRUCTURES**

Individual utility service area structures shall be exempt from screening requirements.

**b. MULTIPLE STRUCTURES/GROUPINGS OF STRUCTURES IN GMA 1**

i. Two (2) or more utility service area structures located/grouped within ten (10) feet of each other (measured structure-to-structure), located within GMA 1, and located less than one hundred (100) feet from the nearest street right-of-way shall be exempt from the screening requirements of **Section 6.2.1G, Utility Service Area Screening Standards**.

ii. However, a row of evergreen shrubs which have a minimum installation height of eighteen (18) inches and shall be spaced no more than thirty-six (36) inches, edge to edge shall be planted around the sides of the structure that are not used to access the inside of the structure.

iii. Groupings of utility service area structures that adjoin a building shall not be required to provide plantings between said utility service area and the building.

**c. MULTIPLE STRUCTURES/GROUPINGS OF STRUCTURES IN GMAS 2, 3, 4 AND 5**

Two (2) or more utility service area structures located grouped within ten (10) feet of each other (measured structure-to-structure), located within GMAs 2, 3, 4, and 5, and located less than one hundred (100) feet from the nearest street right-of-way shall meet the screening requirements of **Section 6.2.1G, Utility Service Area Screening Standards**.

**2. SCREENING**

Where screening for utility service areas is not provided by an intervening building, said screening may be accomplished by locally adapted evergreen or deciduous plantings or an opaque fence or wall.

**a. INSTALLATION HEIGHT**

Plantings shall have a minimum installation height of eighteen (18) inches, be spaced no more than eighteen (18) inches, edge to edge, and be expected to reach a height and width equal to or greater than the utility service structures that are being screened.

**b. FENCES OR WALLS**

Fences or walls shall be opaque, of masonry, stone, or wooden material, or of the same material as that of the principal building, if applicable, and of a height and width equal to or greater than the utility service structures that are being screened.

**3. RESPONSIBLE PARTY**

a. Screening for utility service areas in a street right-of-way is to be installed by the utility or party who installed the service; in all other instances the property owners shall install required screening.

b. Where screening for public utility service areas is to be provided by private property owners, such screening shall be installed only after consultation with the utility who owns the device to be concealed.

c. No screening shall be installed that would impair the safe operations, maintenance, or function of the utility equipment.

**H. PARKING STRUCTURES OR BUILDINGS**

1. Any parking structure or building, or expansion thereof, built after the adoption of this Ordinance that exceeds two thousand five hundred (2,500) square feet in gross floor area shall be provided with a landscaped streetyard as specified in **Section 6.2.1D.2, Streetyards**.

2. This provision shall apply only to structures whose principal use is parking, and shall not apply to vertical expansion of preexisting parking structures.

**I. VARIANCE**

1. Applications for variances from the requirements of the landscaping and screening standards may be approved by the Board of Adjustment after such Board of Adjustment holds a duly advertised public hearing in each case.

2. Said application for a variance will be governed by the procedures set forth in **Section 3.2.16G, BOA Procedure for Variances**.

**J. SUGGESTED PLANT MATERIALS LIST**



## Chapter 6 Development Standards

### Section 6.2 Landscaping and Tree Preservation

1. The suggested plant materials list includes common trees and shrubs suitable for use in the Forsyth County area.
2. Due to individual site soil, moisture, and microclimate conditions, professional expertise should be sought to determine the appropriate plant materials for any particular development project.
3. The use of native plants is recommended where possible.
4. Other appropriate plants not included in this list may also be used with the approval of the Director of Inspections or designee.
5. The following trees shall not be credited toward the requirements of **Section 6.2.1, Landscaping and Tree Preservation Standards – Winston-Salem:**
  - a. *Acer saccharinum* Silver Maple;
  - b. *Ailanthus altissima* Tree of Heaven;
  - c. *Albizia julibrissin* Mimosa;
  - d. *Paulownia tomentosa* Royal Paulownia;
  - e. *Pinus strobus* White Pine;
  - f. *Pinus virginiana* Virginia Pine;
  - g. *Populus* spp. Hybrid Poplars; or
  - h. *Pyrus calleryana* cultivars Bradford and Chanticleer Pear and other Cultivars.

**TABLE 6.2.1.J.1: SUGGESTED PLANT MATERIALS LIST**

PLANT NAME	HEIGHT	SPREAD	GROWTH RATE	LIGHT NEEDS	COMMENTS
<b>S = SLOW; M = MODERATE; R = RAPID; S = SUN; SH = SHADE; PS = PARTIAL SUN; D = DECIDUOUS; E = EVERGREEN</b>					
<b>(A) LARGE VARIETY TREES (MATURE HEIGHT: THIRTY-FIVE (35) FEET OR GREATER)</b>					
<b>(1) Native Evergreen</b>					
<i>Ilex opaca</i> American Holly	40—60'	20—30'	S	S-SH	<i>Tolerates a variety of conditions, male and female plants needed for fruit, pyramidal form</i>
<i>Juniperus virginiana</i> Eastern Red Cedar	40—50'	15—25'	M	S-PS	<i>Tolerates a variety of conditions, pyramidal form, male and female plants needed for fruit</i>
<i>Magnolia grandiflora</i> Southern Magnolia	60—80'	30—40'	R	S-PS	<i>Less shade tolerant with age, attracts wildlife, fragrant spring and summer flowers</i>
<i>Pinus taeda</i> Loblolly Pine	90— 120'	30—40'	R	S	<i>Tolerates flooding and drought, critical to Brown-headed Nuthatch</i>
<i>Quercus laurifolia</i> or <i>hemisphaerica</i> Laurel Oak	60—80'	30—40'	R	S-SH	<i>Shade tolerant, good for moist sites</i>
<b>(2) Native Deciduous</b>					
<i>Acer barbatum</i> or <i>floridanum</i> Southern Sugar Maple	50—60'	20—35'	M	S-PS	<i>Heat tolerant, dislikes dry, compact soil</i>
<i>Acer rubrum</i> Red Maple	60—90'	30—50'	R-M	S-SH	<i>Tolerates a variety of conditions, including wet soil, fall color</i>
<i>Acer saccharum</i> Sugar Maple	90— 120'	40—60'	S	S-PS	<i>Extensive root system, fall color, shade tolerant</i>

**TABLE 6.2.1.J.1: SUGGESTED PLANT MATERIALS LIST**

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<b>S = SLOW; M = MODERATE; R = RAPID; S = SUN; SH = SHADE; PS = PARTIAL SUN; D = DECIDUOUS; E = EVERGREEN</b>					
<i>Betula nigra</i> River Birch	60—80'	30—50'	R	S-PS	Lacy texture, tolerates a variety of conditions, including wet soil, tends to drop small limbs, cultivars available
<i>Celtis laevigata</i> Southern Hackberry or Sugarberry	70—80'	30—50'	R	S-PS	Tolerates a variety of conditions
<i>Cladrastis kentukea</i> Yellow-wood	40—50'	40—45'	M	S	Tolerates a variety of conditions, fragrant white blooms in alternate years
<i>Diospyros virginiana</i> American Persimmon	30—60'	20—25'	S-M	S-PS	Tolerates dry soil, good fall color, fruit attracts wildlife. Separate male and female plants.
<i>Fraxinus pennsylvanica</i> Green Ash	50—120'	40—50'	R	S-PS	Tolerates a variety of conditions. Separate male and female plants. Many cultivars available.
<i>Gymnocladus dioica</i> Kentucky Coffee-tree	60—75'	40—50'		S	Tolerant of air pollution and drought, fall color
<i>Liquidambar styraciflua</i> Sweet Gum	80—120'	40—60'	R	S	Fall color, best in natural areas due to fruit drop
<i>Liquidambar styraciflua</i> 'Rotundiloba' Fruitless Sweet Gum	60—70'	20—30'	R	S	Pyramidal in form, does not set much fruit, tolerates clay soil
<i>Liriodendron tulipifera</i> Tulip-Tree or Yellow Poplar	90—120'	60—80'	R	S	Tolerates a variety of conditions, drops limbs, best in natural areas, host for N.C. State butterfly
<i>Nyssa sylvatica</i> Black Gum	50—80'	30—50'	M	S-PS	Fall color, pyramidal when young
<i>Platanus occidentalis</i> Sycamore	80—120'	40—60'	R	S-PS	Showy bark, tolerates a variety of conditions but needs water, best in natural areas
<i>Prunus serotina</i> Wild Black Cherry	60—80'	30—50'	R	S-PS	Tolerates a variety of conditions, seeds heavily, best in natural areas
<i>Quercus alba</i> White Oak	80—100'	40—60'	S-M	S-PS	Sensitive to construction damage, good fall color
<i>Quercus bicolor</i> Swamp White Oak	50—60'	50—60'	M-R	S	Needs acidic soil, drought resistant, intolerant of salt and air pollution
<i>Quercus coccinea</i> Scarlet Oak	50—80'	40—50'	R	S	Good fall color, tolerates dry, sandy soil
<i>Quercus falcata</i> Southern Red Oak	70—80'	30—40'	R	S-PS	Tolerates drought
<i>Quercus imbricaria</i> Shingle Oak	50—60'	50—60'	S-M	S	Tolerates a variety of conditions
<i>Quercus lyrata</i> Overcup Oak	35—45'	35—40'	M	S	Tolerates a variety of conditions
<i>Quercus macrocarpa</i> Bur Oak	60—80'	60—80'	S	S	Tolerant of city conditions
<i>Quercus nigra</i> Water Oak	70—90'	30—50'	R	S	May retain some leaves through the winter, tolerates a variety of conditions

**TABLE 6.2.1.J.1: SUGGESTED PLANT MATERIALS LIST**

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<i>Quercus palustris</i> Pin Oak	60—80'	40—50'	R	S	Tolerates a variety of conditions, pyramidal form, good fall color
<i>Quercus phellos</i> Willow Oak	80—100'	40—50'	R	S-PS	Tolerates a variety of conditions, golden fall color
<i>Quercus rubra</i> Red Oak	80—90'	30—50'	R-M	S-PS	Needs moist soils, good fall color
<i>Quercus shumardii</i> Shumard Oak	90—100'	40—50'	R-M	S	Tolerates a variety of conditions
<i>Quercus texana</i> or <i>nuttallii</i> Nuttall Oak	60—80'	30—40'	R	S-PS	Tolerates poorly drained soils, drought tolerant
<i>Taxodium distichum</i> Bald-cypress	100—120'	30—40'	R	S	Pyramidal when young, tolerates wet and dry soils, fall color, attractive trunk
<i>Tilia americana</i> Southern Basswood or American Linden	50—70'	30—45'	M	S-PS	Tolerates drought and clay soil, intolerant of air pollution, consider 'Redmond' cultivar
<b>(3) Non-Native Evergreen</b>					
<i>Cedrus deodara</i> Deodar Cedar	40—70'	30—40'	M	S-PS	Tolerates drought and hot, dry summers, likes acidic soil
<i>Cryptomeria japonica</i> Japanese Cryptomeria	50—60'	25—30'	M	S-PS	Tolerates a variety of conditions, pyramidal shape, many cultivars available
<i>Thuja</i> 'Green Giant' Green Giant Arborvitae	40—50'	15—20'	R	S-PS	Tolerates a variety of conditions, may need some wind protection, bronzes in winter
<b>(4) Non-Native Deciduous</b>					
<i>Acer</i> × <i>freemanii</i> Freeman Maple	Gen. 40—70'	Gen. 15—40'	M	S-PS	A hybrid of red maple and silver maple, cultivars vary in size and characteristics
<i>Cercidiphyllum japonicum</i> Katsura Tree	40—60'	20—40'	M-R	S	Intolerant of hot, dry sites, fall color
<i>Ginkgo biloba</i> Ginkgo	50—80'	30—40'	S	S	Plant male trees to avoid messy, smelly fruit, tolerates a variety of conditions, bright yellow fall color
<i>Metasequoia glyptostroboides</i> Dawn Redwood	70—100'	15—25'	R	S	Tolerates a variety of conditions, tolerates wet soils, attractive trunk
<i>Platanus</i> × <i>acerifolia</i> London Planetree	65—80'	75—100'	M	S-PS	Good street tree, light brown exfoliating bark
<i>Quercus robur</i> 'Fastigata' Upright English Oak	50—60'	10—20'	S	S	Tolerates drought and air pollution, narrow, upright form
<i>Sophora japonica</i> or <i>Styphnolobium japonicum</i> Japanese Scholartree or Japanese Pagodatree	50—70'	50'	M-R	S-PS	Resistant to air pollution and drought, but marginally heat hardy in Piedmont N.C.
<i>Tilia cordata</i> 'Greenspire' Greenspire Littleleaf Linden	30—40'	25—35'	S-M	S	Piedmont N.C. is at southern extreme of range, air pollution tolerant, cultivars available
<i>Tilia tomentosa</i> Silver Linden	40—70'	25—45'	R	S-PS	Tolerates drought and air pollution and a variety of soil conditions
<i>Ulmus parvifolia</i> Lacebark or Chinese Elm	40—50'	40—50'	M-R	S	Tolerates a variety of conditions, attractive bark, a tough and durable tree

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<i>Ulmus hybrida</i> Hybrid Elm	75—125'	60—120'	M-R	S-PS	Tolerates a variety of conditions; Dutch Elm disease resistant varieties available
<i>Zelkova serrata</i> Japanese Zelkova	50—80'	40—50'	M	S-PS	Good street tree; tolerates urban conditions well, cultivars available
<b>(B) MEDIUM VARIETY TREES (MATURE HEIGHT: TWENTY-FIVE (25) TO THIRTY-FIVE (35) FEET)</b>					
<b>(1) Native Evergreen</b>					
<i>Ilex × attenuata</i> 'Fosteri' Foster's Holly	20—30'	10—20'	R	S-PS	Red fruits, male plants not needed for fruiting, best berry production in full sun
<i>Magnolia virginiana</i> Sweet Bay Magnolia	20—30'	10—15'	M	S-PS	Tolerates some shade, good for wet sites, cultivars provide evergreen and deciduous options
<i>Pinus virginiana</i> 'Wate's Golden' Wate's Golden Virginia Pine	15—30'	10—20'	S-M	S	Grows in poor soils, turns golden in winter, seeds eaten by birds, especially Brown-headed Nuthatch
<i>Prunus caroliniana</i> Carolina Laurel Cherry	20—40'	15—20'	M-R	S-PS	Tolerates a variety of conditions, colonizes
<b>(2) Native Deciduous</b>					
<i>Carpinus caroliniana</i> American Hornbeam or Ironwood	20—30'	20—30'	S	S-PS	Does well in moist to wet soil, attractive trunk, interesting fruit
<i>Cercis canadensis</i> Eastern Redbud	20—30'	25—35'	M	S-PS	Tolerates a variety of conditions, many cultivars available, early spring purple/pink blooms
<i>Cornus florida</i> Flowering Dogwood	15—30'	15—20'	S-M	PS	Best in part shade, many cultivars available, flowers in spring, fall color and red fruit
<i>Gleditsia triacanthos</i> var. <i>inermis</i> Thornless Honeylocust	30—70'	30—40'	R	S	Range of soil types, drought tolerant;
<i>Halesia tetraptera</i> Common Silverbell	20—40'	20—35'	M	S-PS	Tolerates a variety of conditions, showy white blooms in spring, cultivars available
<i>Ostrya virginiana</i> Eastern Hop-hornbeam	20—30'	20—30'	S	S-PS	Tolerates a variety of conditions, interesting fruit
<i>Oxydendrum arboreum</i> Sourwood	20—30'	10—15'	S	S-PS	Tolerates a variety of conditions, white summer flowers, fall color, source of sourwood honey
<b>(3) Non-Native Evergreen</b>					
<i>Ilex × 'Nellie R. Stevens'</i> Nellie Stevens Holly	30—40'	10—15'	R	S-PS	Red fruit, drought and heat tolerant, male and female plants ( <i>I. cornuta</i> ) needed for best fruiting, also used as a large shrub
<i>Pinus thunbergii</i> Japanese Black Pine	20'	20'	S-M	S	Select small tree cultivar from among dwarf cultivars, heat and drought tolerant
<b>(4) Non-Native Deciduous</b>					
<i>Acer buergerianum</i> Trident Maple	25—35'	20—30'	M	S-PS	Tolerates a variety of conditions; good fall color
<i>Acer campestre</i> Hedge Maple	25—35'	25—35'	S	S	Tolerates drought and air pollution; shallow root system

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<i>Carpinus betulus</i> 'Fastigata' <i>Pyramidal European Hornbeam</i>	30—40'	20—30'	S-M	S-PS	Pyramidal when young, tolerates a range of conditions
<i>Koelreuteria paniculata</i> <i>Goldenrain Tree</i>	20—40'	15—35'	M-R	S-PS	Tolerates drought and air pollution, yellow flowers in June
<i>Magnolia</i> × <i>soulangiana</i> or <i>soulangeana</i> <i>Saucer Magnolia</i>	15—25'	15—25'	M	S-PS	Late flowering cultivars avoid frost damage to blooms
<i>Pistacia chinensis</i> <i>Chinese Pistachio</i>	25—35'	20—30'	M-R	S	Drought tolerant, male and female plants needed for fruit, fall color
<i>Prunus</i> 'Kwanzan' <i>Kwanzan Cherry</i>	20—30'	15—25'	M	S-PS	Pink blooms in April, may be short-lived, good fall color, no fruit
<i>Prunus</i> 'Okame' <i>Okame Cherry</i>	15—30'	20—30'	M-R	S	Tolerates a variety of conditions, pink blooms in late winter lasting longer than most cherries
<i>Prunus subhirtella</i> 'Autumnalis' <i>Fall Blooming Cherry</i>	20—30'	15—25'	R	S-PS	Flowers best in full sun, flowers both in fall and late winter, may be short lived
<i>Prunus subhirtella</i> 'Pendula' <i>Weeping Cherry</i>	20—40'	15—30'	M	S	Tolerant of heat and clay soil; white to pinkish flowers in early spring; relatively long lived
<i>Prunus</i> × <i>yedoensis</i> <i>Yoshino Cherry</i>	30—40'	30—50'	R	S	Tolerates a variety of conditions, pale pink to white flowers in early spring, many cultivars available
<b>(C) SMALL VARIETY TREES (MATURE HEIGHT: LESS THAN TWENTY-FIVE (25) FEET)</b>					
<b>(1) Native Evergreen</b>					
<i>Ilex vomitoria</i> <i>Yaupon Holly</i>	15—20'	10—20'	S-M	S-SH	Tolerates a variety of conditions, male and female plants needed for fruit, many cultivars available in many sizes
<i>Magnolia grandiflora</i> 'Little Gem' <i>Little Gem Magnolia</i>	15—20'	8—10'	R	S-PS	Dwarf cultivar of <i>Magnolia grandiflora</i>
<i>Morella</i> or <i>Myrica cerifera</i> <i>Wax-myrtle</i>	10—15'	8—10'	R	S-PS	Tolerates wet to dry soils, can colonize, many cultivars available, male and female plants needed for fruit, also can be used in shrub form
<b>(2) Native Deciduous</b>					
<i>Aesculus pavia</i> <i>Red Buckeye</i>	10—20'	10—20'	M	S-PS	Especially attracts hummingbirds and pollinators, red flowers in spring, leaf scorch may develop in dry soils
<i>Amelanchier</i> × 'Autumn Brilliance' <i>Autumn Brilliance Serviceberry</i>	25—40'	20—30'	S	S-PS	Tolerates a variety of conditions, rust fungus can attack fruit, early spring white blooms, fall color, other cultivars available
<i>Chionanthus virginicus</i> <i>Fringe-tree or Old Man's Beard</i>	12—20'	12—20'	S-M	S-PS	Tolerates a variety of conditions, male and female plants needed for fruit, fragrant white flowers in spring

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<i>Crataegus viridis</i> 'Winter King' <i>Winter King Green Hawthorn</i>	15—30'	10—20'	S	S-PS	Drought tolerant, has thorns, other native species available, white flowers in spring, fall color, interesting bark
<b>(3) Non-Native Evergreen</b>					
<i>Ilex cornuta</i> 'Burfordii' <i>Burford Holly</i>	8—20'	5—10'	S-M	S-PS	Drought and heat tolerant, red fruit produced without pollinator, dwarf cultivar available
<b>(4) Non-Native Deciduous</b>					
<i>Acer palmatum</i> <i>Japanese Maple</i>	15—25'	10—25'	S-M	S-PS	Avoid hot, dry and windy sites; many cultivars available
<i>Chionanthus retusus</i> <i>Chinese Fringe-tree</i>	15—25'	10—25'	M	S-PS	Tolerates a variety of conditions, showy white flowers in spring
<i>Cornus kousa</i> <i>Kousa Dogwood</i>	15—30'	15—30'	S	S-PS	Resistant to anthracnose, white flowers in May, fall color
<i>Lagerstroemia indica</i> cvs. <i>Crapemyrtle</i>	15—30'	6—15'	R	S	Summer blooms, attractive bark, overused, many cultivars (including dwarfs) available, do not top
<i>Magnolia stellata</i> <i>Star Magnolia</i>	10—15'	6—10'	S-M	S-PS	Blooms best in full sun, late winter white flowers
<i>Malus hybrida</i> <i>Hybrid Crabapple</i>	15—25'	10—20'	M	S	Plant only disease resistant cultivars, many cultivars available, showy spring flowers and fall fruit
<i>Prunus sargentii</i> <i>Sargent Cherry</i>	20—40'	20—40'	R	S	One of the hardiest cherries; pink flowers; sensitive to air pollution; reddish bark
<i>Prunus serrulata</i> 'Snowgoose' <i>Snowgoose Japanese Cherry</i>	15—25'	15—20'	M	S-PS	White sprung flowers; reddish bark; may be short-lived
<i>Syringa reticulata</i> <i>Japanese Tree Lilac</i>	20—30'	15—20'	M	S	Tolerates a variety of conditions; creamy white flowers in mid-summer
<b>(D) STREETYARD AND INTERIOR SHRUBS (MATURE HEIGHT THIRTY-SIX (36) INCHES OR MORE)</b>					
<b>(1) Native Evergreen</b>					
<i>Agarista populifolia</i> <i>Florida Leucothoe</i> or <i>Agarista</i>	8—12'	8—12'	R	PS	Tolerates a variety of conditions, but prefers moist soil
<i>Ilex glabra</i> <i>Inkberry Holly</i>	5—9'	5—10'	S-M	S-PS	Drought tolerant but prefers moist soil, many cultivars available, male and female plants needed for fruit
<i>Ilex vomitoria</i> <i>Yaupon Holly</i>	10—20'	8—12'	M-R	S-PS	Tolerates wet to dry soils, male and female plants needed for fruit, dwarf and other cultivars available
<i>Illicium floridanum</i> <i>Florida Star-anise</i>	5—8'	6—8'	M	PS-SH	Prefers moist, well-drained soil high in organic matter, many cultivars available, showy spring flowers
<i>Illicium parviflorum</i> <i>Yellow Anise-tree</i>	7—10'	8—10'	M	S-PS	Tolerates a variety of conditions, drought tolerant, can colonize, some cultivars available

**TABLE 6.2.1.J.1: SUGGESTED PLANT MATERIALS LIST**

PLANT NAME	HEIGHT	SPREAD	GROWTH RATE	LIGHT NEEDS	COMMENTS
<b>S = SLOW; M = MODERATE; R = RAPID; S = SUN; SH = SHADE; PS = PARTIAL SUN; D = DECIDUOUS; E = EVERGREEN</b>					
<i>Morella</i> or <i>Myrica cerifera</i> <i>Wax-myrtle</i>	10—15'	8—10'	R	S-PS	Tolerates wet to dry soils, can colonize, many cultivars available, male and female plants needed for fruit, can reach small tree size
<i>Rhododendron catawbiense</i> <i>Catawba Rhododendron</i>	6—12'	6—10'	M	PS	Showy flowers, needs excellent drainage and organic soil, many cultivars available
<i>Thuja occidentalis</i> 'Emerald' <i>Emerald American Arborvitae</i>	6—10'	3—6'	M	S-PS	Tolerates a range of soils and conditions; good screening plant
<b>(2) Native Deciduous</b>					
<i>Calycanthus floridus</i> <i>Sweet-shrub</i> or <i>Carolina Allspice</i>	6—9'	6—12'	S-M	S-PS	Tolerates a range of conditions, drought tolerant, fragrant maroon flowers in early spring, fall color, cultivars available
<i>Callicarpa americana</i> <i>American Beautyberry</i>	3—4'	4—5'	R	S-PS	Prefers moist soil, showy purplish berries in fall
<i>Ceanothus americanus</i> <i>New Jersey Tea</i>	3—4'	3—5'	S-M	S-PS	Easy to grow in a wide range of conditions, drought tolerant, early summer flowers
<i>Clethra alnifolia</i> <i>Sweet-pepperbush</i>	4—8'	4—6'	S-M	S-PS	Needs moist soil, fragrant white summer flowers, may colonize, fall color
<i>Fothergilla gardenii</i> <i>Witch-alder</i> or <i>Fothergilla</i>	3—5'	3—4'	S	S-PS	Drought tolerant, fall color, may colonize, fragrant white spring flowers
<i>Fothergilla major</i> <i>Large Witch-alder</i>	6—10'	5—9'	S	PS	Drought tolerant, cultivars include 'Mt. Airy,' white spring flowers
<i>Hamamelis virginiana</i> <i>Witch-hazel</i>	15—30'	15—25'	S-M	S-PS	Multi-stemmed, yellow fall flowers and leaf color, tolerates heavy clay soil
<i>Hydrangea arborescens</i> <i>Smooth Hydrangea</i>	3—5'	3—5'	R	PS	Suffers in full sun and with drought, likes moist well-drained soil, attracts bees, prune in early spring, cultivars available, including 'Annabelle,' long bloom period
<i>Hydrangea quercifolia</i> <i>Oakleaf Hydrangea</i>	4—8'	3—8'	R	PS-S	Somewhat drought tolerant, attractive bark, needs mulch to keep roots cool, long bloom period in spring and summer, fall color, dwarf cultivars available
<i>Ilex decidua</i> <i>Possum-haw</i>	6—7'	6'	M	PS	Prefers moist, well-drained soil, male and female plants needed for fruit
<i>Ilex verticillata</i> <i>Winterberry</i>	6—15'	6—10'	S-M	S-PS	Tolerates a range of conditions, but prefers moist soil, male and female plants needed for fruit, dwarf cultivars available
<i>Itea virginica</i> <i>Sweetspire</i>	3—6'	4—6'	M	S-PS	Tolerates wide range of moisture, excellent fall color, fragrant white spring flowers
<i>Lindera benzoin</i> <i>Spicebush</i>	6—12'	6—12'	S-M	S-PS	Prefers moist, well-drained soil, male and female plants needed for fruit, fall color, early spring yellowish flowers
<i>Physocarpus opulifolius</i> <i>Eastern Ninebark</i>	5—8'	6—10'	M-R	S-PS	Drought tolerant, tough and durable, white spring flowers, attractive bark, dwarf cultivars available

**TABLE 6.2.1.J.1: SUGGESTED PLANT MATERIALS LIST**

PLANT NAME	HEIGHT	SPREAD	GROWTH RATE	LIGHT NEEDS	COMMENTS
<b>S = SLOW; M = MODERATE; R = RAPID; S = SUN; SH = SHADE; PS = PARTIAL SUN; D = DECIDUOUS; E = EVERGREEN</b>					
<i>Rhododendron calendulaceum</i> Flame Azalea	4—8'	8—10'	S	PS	Good for naturalistic landscape, needs some direct sun, orange/yellow flowers in late spring, needs well-drained organic soil
<i>Rhododendron periclymenoides</i> Pinxterbloom Azalea	3—6'	4—7'	S	S-PS	Drought tolerant, needs some sun, pink spring flowers, needs well-drained organic soil
<i>Rhododendron viscosum</i> Swamp Azalea	2—8'	3—8'	M	PS	Likes moist organic soil, but tolerates some drought, fragrant white flowers in early summer
<i>Sambucus canadensis</i> American Elderberry	5—12'	5—12'	R	S	Likes moist soil, may colonize, white summer flowers and dark fruit
<i>Vaccinium arboreum</i> Sparkleberry	10—20'	10—15'	M	S-SH	Tolerates drought, needs multiple genetic strains for fruit set, fall color
<i>Vaccinium stamineum</i> Deerberry	3—5'	3—5'	M	S-PS	Drought tolerant, needs acidic soil, needs multiple genetic strains for fruit set
<i>Vaccinium virgatum</i> or <i>ashei</i> Rabbiteve Blueberry	8—12'	6—10'	M	S-PS	Drought tolerant, needs acidic soil, needs multiple genetic strains for fruit set, fall color, grown for fruit production
<i>Viburnum acerifolium</i> Mapleleaf Viburnum	4—6'	4—6'	M	S-SH	Tolerates drought, may colonize, needs multiple genetic strains for fruit set, white spring flowers, fall color
<i>Viburnum dentatum</i> Arrow-wood Viburnum	6—10'	6—15'	M	S-PS	Tolerates drought but prefers moist soil, may colonize, needs multiple genetic strains for fruit set, white spring flowers, fall color, cultivars available
<i>Viburnum nudum</i> Possumhaw or Southern Wild Raisin	6—10'	6—10'	M	S-PS	Prefers moist to wet soil, needs multiple genetic strains for fruit set, white spring flowers, fall color, cultivars available
<i>Viburnum prunifolium</i> Blackhaw Viburnum	12—15'	8—12'	S-M	S-SH	Drought tolerant, needs multiple genetic strains for fruit set, white spring flowers, fall color
<i>Viburnum rafinesqueanum</i> Downy Arrow-wood Viburnum	4—6'	4—6'	M	S-PS	Drought tolerant, needs multiple genetic strains for fruit set, white spring flowers, fall color
<i>Viburnum rufidulum</i> Southern Black Haw Viburnum	10—20'	10—15'	M	PS	Needs multiple genetic strains for fruit set, white spring flowers, fall color
<b>(3) Non-Native Evergreen</b>					
<i>Abelia × grandiflora</i> Glossy Abelia	5—8'	5—8'	M-R	S-PS	Tolerates a variety of conditions, drought tolerant, summer flowers, many dwarf cultivars available
<i>Aucuba japonica</i> Aucuba	6—10'	4—6'	S	PS-S	Needs winter shade, drought tolerant, many cultivars available
<i>Berberis julianae</i> Wintergreen Barberry	4—8'	6—8'	S	S-PS	Tolerates a variety of conditions, drought tolerant, has spines, good barrier plant
<i>Berberis verruculosa</i> Warty Barberry	3—6'	3—4'	S	S-PS	Tolerant of drought and urban conditions, tolerates a variety of soils



**TABLE 6.2.1.J.1: SUGGESTED PLANT MATERIALS LIST**

PLANT NAME	HEIGHT	SPREAD	GROWTH RATE	LIGHT NEEDS	COMMENTS
<b>S = SLOW; M = MODERATE; R = RAPID; S = SUN; SH = SHADE; PS = PARTIAL SUN; D = DECIDUOUS; E = EVERGREEN</b>					
<i>Buxus microphylla</i> Littleleaf Boxwood	2—8'	2—8'	S	S-PS	Many shapes and sizes, var. japonica is often used, generally densely branched, leaves may bronze in winter
<i>Buxus sempervirens</i> Common Boxwood	15—20'	10—15'	S	S-PS	Drought tolerant, protect from wind, many cultivars available
<i>Camellia japonica</i> Camellia	8—15'	5—10'	S-M	PS	Excess sun, cold or shade can reduce flowering, many cultivars available, blooms in early spring
<i>Camellia sasanqua</i> Sasanqua Camellia	6—10'	5—7'	M-R	S-PS	Drought tolerant, many cultivars available, blooms in the fall
<i>Euonymus japonicus</i> Japanese Euonymus	10—15'	5—6'	R	S-SH	Tolerates drought and variety of soil types, subject to scale insects
<i>Ilex cornuta</i> cvs. Chinese Holly (i.e., Dw. Burford Holly)	3—25'	4—10'	S-M	S-PS	Favorite cultivars include Dw. Burford and Carissa hollies, many others available, red fruit when present, leaves have spines, drought and heat tolerant, male and female plants needed for fruit
<i>Ilex crenata</i> cvs. Japanese Holly (i.e., Compacta Holly)	4—10'	3—5'	S-M	S-PS	Many cultivars available in varying shapes and sizes, black fruit when present, generally hardy, male and female plants needed for fruit
<i>Juniperus chinensis</i> cvs. Chinese Juniper	Var.	Var.	Var.	S	Many cultivars available in varying shapes and sizes, generally heat and drought tolerant, male and female plants needed for fruit
<i>Loropetalum chinensis</i> Loropetalum	6—10'	6—10'	R	S-PS	Tolerates a variety of conditions, drought tolerant, long spring bloom period, dwarf cultivars available
<i>Osmanthus heterophyllus</i> Tea Olive	8—10'	5—10'	S-M	S-PS	Drought and heat tolerant, a good plant for screening, many cultivars available, fragrant fall flowers
<i>Osmanthus × fortunei</i> Fortune's Osmanthus	15—20'	15—20'	M	S-SH	Drought tolerant, good for screening and barriers, fragrant fall flowers
<i>Pinus mugo</i> Mugo Pine	15—20'	25—30'	S	S-PS	Varies greatly in size; tolerates clay soil, cultivars available
<i>Prunus laurocerasus</i> Cherrylaurel	4—8'	5—8'	M	S-SH	Favorite cultivars are Zabel, Otto Luyken and Schip laurel, need well-drained soil, some disease problems and scale insects
<i>Raphiolepis</i> cvs. Indian Hawthorn	4—10'	4—10'	S	S-PS	Tolerates a variety of conditions, drought tolerant, many cultivars available
<i>Rhododendron hybrida</i> Evergreen Azalea	2—8'	2—10'	M	PS	Many hybrids and cultivars available, needs well drained soil
<i>Sarcococca confusa</i> Sweetbox Sarcococca	3—5'	3—5'	S-M	PS-SH	Drought tolerant, fragrant flowers in late winter
<i>Viburnum awabuki</i> 'Chindo' Chindo Viburnum	10—15'	6—8'	R	S-PS	Pyramidal form, drought tolerant
<i>Viburnum rhytidophyllum</i> Leatherleaf Viburnum	10—15'	10—15'	M	PS-SH	Protect from winter wind and sun

**TABLE 6.2.1.J.1: SUGGESTED PLANT MATERIALS LIST**

PLANT NAME	HEIGHT	SPREAD	GROWTH RATE	LIGHT NEEDS	COMMENTS
<b>S = SLOW; M = MODERATE; R = RAPID; S = SUN; SH = SHADE; PS = PARTIAL SUN; D = DECIDUOUS; E = EVERGREEN</b>					
<b>(4) Non-Native Deciduous</b>					
<i>Chaenomeles speciosa</i> or <i>japonica</i> <i>Japanese Flowering Quince</i>	5—8'	4—8'	R	S-PS	Varied flower colors, flowers best in full sun, tolerates a variety of conditions, many cultivars available, stems often have spines
<i>Cotinus coggygia</i> <i>Smoketree or Smokebush</i>	10—15'	8—12'	M-R	S	Tolerates a range of soil types, drought tolerant, showy summer flowers, many cultivars available
<i>Forsythia</i> × <i>intermedia</i> <i>Border Forsythia</i>	8—10'	10—12'	R	S-PS	Tolerates a variety of conditions, blooms in early spring, best in full sun, many cultivars to choose from
<i>Hydrangea macrophylla</i> <i>Bigleaf Hydrangea</i>	3—4'	4—6'	R	PSH	Moist well drained soil, wilts in drought, long bloom period, needs pruning after blooming
<i>Hydrangea paniculata</i> <i>Panicle Hydrangea</i>	6—20'	6—8'	R	S-PS	Drought tolerant, white flowers in summer, long bloom period, many cultivars available
<i>Kerria japonica</i> <i>Japanese Kerria</i>	3—6'	6—9'	M	PS-SH	Drought tolerant, early spring yellow flowers, interesting green stems, cultivars available
<i>Rosa hybrida</i> <i>Hybrid Landscape Rose (i.e., Knock Out Rose)</i>	3—4'	3—4'	M	S-PS	Drought and disease resistant, blooms all summer, has thorns, many cultivars available
<i>Spiraea</i> cvs. <i>Spiraea (excl. Spiraea japonica)</i>	Var.	Var.	Gen. R	S	Spring or summer flowering shrubs, many cultivars available, <i>Spiraea japonica</i> species is considered an invasive exotic in N.C.
<b>(E) PRIMARY EVERGREEN SHRUBS AND OUTDOOR STORAGE AREA SCREENING PLANTS (INSTALLATION HEIGHT SIX (6) FEET OR MORE)</b>					
<b>(1) Native</b>					
<i>Ilex opaca</i> <i>American Holly</i>	40—60'	20—30'	S	S-SH	Tolerates a variety of conditions, male and female plants needed for fruit, pyramidal form, cultivars available
<i>Ilex</i> × <i>attenuata</i> 'Fosteri' <i>Foster's Holly</i>	20—30'	10—20'	R	S-PS	Red fruits, male plants not needed for fruiting, best berry production in full sun
<i>Juniperus virginiana</i> <i>Eastern Red Cedar</i>	40—50'	15—25'	S	S-PS	Tolerates a variety of conditions, pyramidal form, male and female plants needed for fruit
<i>Morella</i> or <i>Myrica cerifera</i> <i>Wax-myrtle</i>	10—15'	8—10'	R	S-PS	Tolerates wet to dry soils, can colonize, many cultivars available, male and female plants needed for fruit, can reach small tree size
<i>Prunus caroliniana</i> <i>Carolina Laurel Cherry</i>	20—40'	15—20'	M-R	S-PS	Tolerates a variety of conditions, colonizes
<i>Thuja occidentalis</i> <i>American Arborvitae</i>	Var.	Var.	Gen. S	S	Many cultivars in countless shapes and sizes, some tolerate part shade, some reach small tree size
<b>2) Non-Native</b>					

**TABLE 6.2.1.J.1: SUGGESTED PLANT MATERIALS LIST**

PLANT NAME	HEIGHT	SPREAD	GROWTH RATE	LIGHT NEEDS	COMMENTS
<b>S = SLOW; M = MODERATE; R = RAPID; S = SUN; SH = SHADE; PS = PARTIAL SUN; D = DECIDUOUS; E = EVERGREEN</b>					
<i>Ilex cornuta</i> 'Burfordii' Burford Holly	8—20'	5—10'	S-M	S-PS	Leaves have spines, drought and heat tolerant, red fruit without pollinator, dwarf cultivar available
<i>Ilex</i> × 'Nellie R. Stevens' Nellie Stevens Holly	30—40'	10—15'	R	S-PS	Red fruit, drought and heat tolerant, male cultivar ( <i>I. cornuta</i> ) needed for best fruiting, also used as a large shrub
<i>Juniperus chinensis</i> cvs. Chinese Juniper cultivars	5—7'	8—10'	M	S	Tolerates a variety of conditions, including drought and air pollution
<i>Pinus thunbergii</i> Japanese Black Pine	20'	20'	S-M	S	Select small tree cultivar from among dwarf cultivars, heat and drought tolerant

**TABLE 6.2.1.J.2: SUGGESTED PLANT MATERIALS LIST – GROUNDCOVERS**

(planting areas, berms, wall planters)

PLANT NAME	DECIDUOUS/ EVERGREEN	HEIGHT	SPREAD	GROWTH RATE	LIGHT NEEDS	COMMENTS
<b>S = SLOW; M = MODERATE; R = RAPID; S = SUN; SH = SHADE; PS = PARTIAL SUN; D = DECIDUOUS; E = EVERGREEN</b>						
<b>(1) Native</b>						
<i>Carex pensylvanica</i> Pennsylvania Sedge or Oak Sedge	Semi-E	.5—1'	.5—1'	M	PS-SH	Plant in moist or dry soil, easy to grow and drought tolerant
<i>Carex plantaginea</i> Seersucker Sedge	E	.5—1'	.5—1'	M	PS	Needs moist soil
<i>Chrysogonum virginianum</i> Green-and-Gold	Semi-E	.5—1'	.75—1.5'	M	PS-SH	Needs good drainage, yellow spring blooms
<i>Fragaria virginiana</i> Wild Strawberry	D	.25—.75'	.75—1'	M-R	S-PS	Native, prefers full sun, fruit is small but flavorful
<i>Heuchera americana</i> or <i>villosa</i> American Alumroot	E	1—2'	1—2'	M	PS-SH	Attractive mottled foliage and small flowers on long wiry stems, prefers moist to average well-drained soil, many cultivars available
<i>Juniperus horizontalis</i> Creeping Juniper	E	1—2'	3-4	M-R	S	Tolerates a variety of conditions, drought tolerant, cultivars available, native to NE US
<i>Mitchella repens</i> Partridge-berry	E	.25'	1'+	S-M	PS-SH	White spring flowers, red fall fruit, prefers moist organic soil
<i>Pachysandra procumbens</i> Allegheny-spurge	E	.5—1'	1-2+'	M	PS-SH	Drought tolerant, very interesting winter leaf, early spring bloom
<i>Phlox stolonifera</i> Creeping Phlox	E	.5—1'	.75-1.5'	R	PS-SH	Prefers light shade and moist soil, spring blooms, many cultivars available
<i>Phlox subulata</i> Moss Phlox	E	.25—.5'	1-2+'	M	S	Good drainage important, drought tolerant, late winter through spring bloom period, many cultivars available

Chapter 6 Development Standards

Section 6.2 Landscaping and Tree Preservation

**TABLE 6.2.1.J.2: SUGGESTED PLANT MATERIALS LIST – GROUNDCOVERS**  
(planting areas, berms, wall planters)

PLANT NAME	DECIDUOUS/ EVERGREEN	HEIGHT	SPREAD	GROWTH RATE	LIGHT NEEDS	COMMENTS
<b>S = SLOW; M = MODERATE; R = RAPID; S = SUN; SH = SHADE; PS = PARTIAL SUN; D = DECIDUOUS; E = EVERGREEN</b>						
<b>(2) Non-Native</b>						
<i>Cephalotaxus harringtonia</i> 'Prostrata' <i>Prostrate Japanese Plum Yew</i>	E	2–3'	2–5'	S	S-PS	Drought tolerant, can be used for a ground cover
<i>Cotoneaster dammeri</i> cvs. <i>Bearberry Cotoneaster</i>	E	1–2'	3–6'	S-R	S-PS	Needs good drainage, but tolerates poor soils and drought once established; white flowers in spring and small red fruit
<i>Cotoneaster salicifolius</i> cvs. <i>Willowleaf Cotoneaster</i>	Semi-E	1-1.5'	5–6'	M	S-PS	Drought tolerant, tolerates a variety of conditions; foliage turns purplish red in winter, white flowers in spring and small red fruit
<i>Hemerocallis</i> spp. <i>Daylily</i>	D	.75–3'	2–3'	R	S-PS	Tolerates a variety of conditions, summer heat and humidity tolerant, needs dividing, summer blooms, many cultivars available including repeat bloomers
<i>Hypericum calycinum</i> <i>Aaronsbeard</i>	Semi-E	1–1.5'	1.5–2'	M-R	S-PS	Tolerates a variety of conditions, blooms best in full sun
<i>Juniperus conferta</i> <i>Shore Juniper</i>	E	.75–1.5'	6–8'	R	S	Tolerates a variety of conditions, drought tolerant, many cultivars available
<i>Juniperus procumbens</i> <i>Japanese Garden Juniper</i>	E	1–1.5'	10–12'	S	S	Tolerates a variety of conditions, doesn't like wet soils, very hardy, 'Nana' is a popular dwarf cultivar
<i>Liriope muscari</i> <i>Lily-Turf or Liriope</i>	Semi-E	1–1.5'	.75–1'	R	S-PS	Tolerates a variety of conditions, summer flowers, stays green through the winter but needs cutting back in early spring, cultivars available
<i>Microbiota decussata</i> <i>Russian Arborvitae</i>	E	.5–1.5'	3'-8'	M	S-PS	More shade tolerant than some other junipers, foliage turns bronze-purple in fall and winter
<i>Ophiopogon japonicus</i> <i>Mondo</i>	Semi-E	.75–1.3'	1'	R	PS-SH	Tolerates a variety of conditions, cultivars available, colonizes
<i>Pachysandra terminalis</i> <i>Japanese Pachysandra</i>	E	.5–1'	1–1.5'	R	PS-SH	Tolerates a variety of conditions but needs well-drained soil, cultivars available
<i>Rubus pentalobus</i> or <i>calycinum</i> <i>Creeping Raspberry</i>	E	.5–1'	3–6'	M	S-PS	Tolerates variety of conditions, leaves turn burgundy in fall and winter
<i>Sarcococca hookeriana</i> var. <i>humilis</i> <i>Dwarf Sweetbox</i>	E	1-1.5'	2–4'	S-M	PS-SH	Drought tolerant, good for shady areas, fragrant winter flowers

**TABLE 6.2.1.J.3: SUGGESTED PLANT MATERIALS LIST – ORNAMENTAL GRASSES**

PLANT NAME	HEIGHT	SPREAD	LIGHT NEEDS	COMMENTS
<b>S = SLOW; M = MODERATE; R = RAPID; S = SUN; SH = SHADE; PS = PARTIAL SUN; D = DECIDUOUS; E = EVERGREEN</b>				
<b>(1) Native</b>				
<i>Andropogon gerardii</i> <i>Big Bluestem</i> or <i>Turkeyfoot</i>	4–6'	2–3'	S	Tolerates a wide variety of conditions, drought tolerant, needs sun
<i>Andropogon virginicus</i> <i>Broomsedge</i>	3–4'	2–3'	S	Drought tolerant
<i>Muhlenbergia capillaris</i> <i>Pink Muhlygrass</i> or <i>Hairgrass</i>	2–3'	2–3'	S-PS	Tolerates a wide variety of conditions, showy pink flowers in summer through fall, cultivars available
<i>Panicum virgatum</i> <i>Switchgrass</i>	3–6'	2–3'	S-PS	Tolerates a wide variety of conditions, wet to dry, good fall color, many cultivars available
<i>Schizachyrium scoparium</i> <i>Little Bluestem</i>	2–3'	1–2'	S	Tolerates a wide variety of conditions, drought tolerant, cultivars available
<i>Sorghastrum nutans</i> <i>Yellow Indiangrass</i>	3–5'	1–2'	S	Tolerates a wide variety of conditions, good fall color
<b>(2) Non-Native</b>				
<i>Calamagrostis</i> × <i>acutiflora</i> 'Karl Foerster' <i>Feather Reed Grass</i>	3–5'	1.2–2.5'	S	Fall color, good for medium to wet soils
<i>Pennisetum alopecuroides</i> <i>Fountain Grass</i>	2.5–5'	2.5–5'	S-PS	Tolerates a wide variety of conditions, good fall color, many cultivars available
<i>Pennisetum orientale</i> 'Karley Rose' <i>Oriental Fountain Grass</i>	2–3'	2–3'	S-PS	Drought tolerant, deep pink plumes last from early summer to fall

**TABLE 6.2.1.J.4: SUGGESTED PLANT MATERIALS LIST - VINES**

PLANT NAME	D/E	HEIGHT	GROWTH RATE	LIGHT NEEDS	COMMENTS
<b>S = SLOW; M = MODERATE; R = RAPID; S = SUN; SH = SHADE; PS = PARTIAL SUN; D = DECIDUOUS; E = EVERGREEN</b>					
<b>(1) Native</b>					
<i>Bignonia capreolata</i> <i>Cross-vine</i>	Semi-E	35–50'	R	S-PS	Orange-red flowers attract hummingbirds, colonizes, flowers best in full sun, cultivars available
<i>Campsis radicans</i> <i>Trumpet-creeper</i>	D	25–40'	R	S-PS	Orange/red blossoms attract hummingbirds, very aggressive colonizer
<i>Clematis virginiana</i> <i>Virgin's-bower</i> or <i>Woodbine</i>	D	12–20'	R	S-PS	White blooms in the summer; will bloom in some shade; don't confuse with Sweetautumn Clematis, an invasive exotic
<i>Gelsemium sempervirens</i> <i>Carolina Jessamine</i>	E	12–20'	M-R	S-PS	Yellow flowers in spring, tolerates a variety of conditions, cultivars and other species available

## Chapter 6 Development Standards

### Section 6.2 Landscaping and Tree Preservation

<i>Lonicera sempervirens</i> <i>Coral Honeysuckle</i>	<i>Semi-E</i>	<i>10—15'</i>	<i>R</i>	<i>S</i>	<i>Orange/red flowers, attracts hummingbirds, small red fruit, tolerates a variety of conditions, tolerates part shade but needs sun to flower</i>
<i>Parthenocissus quinquefolia</i> <i>Virginia-creeper</i>	<i>D</i>	<i>10—40'</i>	<i>R</i>	<i>S-PS</i>	<i>Good fall color and fall black fruit, colonizes</i>
<i>Wisteria frutescens</i> <i>American Wisteria</i>	<i>D</i>	<i>15—30'</i>	<i>R</i>	<i>S</i>	<i>Replacement for invasive exotic Chinese and Japanese Wisterias, lavender flower clusters in late spring, sporadically re-blooms, cultivars available</i>
<b>(2) Non-Native</b>					
<i>Campsis grandiflora</i> <i>Chinese trumpetvine</i>	<i>E</i>	<i>30'</i>	<i>R</i>	<i>S</i>	<i>Large orange blossoms, attracts hummingbirds, hybrids available</i>
<i>Clematis hybrida</i> <i>Clematis</i>	<i>D</i>	<i>5—20'</i>	<i>M</i>	<i>S</i>	<i>Roots need to be shaded, many cultivars available; don't confuse with Sweetautumn Clematis, an invasive exotic</i>
<i>Hydrangea anomala</i> <i>subsp. petiolaris</i> <i>Climbing Hydrangea</i>	<i>D</i>	<i>30—50'</i>	<i>R</i>	<i>PS-SH</i>	<i>Flowers best with some sun, growth slow until plant is established, white flowers in late spring</i>