

## ATTACHMENT A

### AN ORDINANCE TO AMEND PROVISIONS OF THE UNIFIED DEVELOPMENT ORDINANCE REGULATING TREE PROTECTION

WHEREAS, the Durham City Council wishes to amend certain provisions regarding tree protection and related matters in the Unified Development Ordinance to better promote the community's health, safety, and welfare;

NOW, THEREFORE, be it ordained that Article 8, Environmental Protection, Article 9, Landscaping and Buffering, Article 12, Infrastructure and Public Improvements, Article 15, Enforcement, and Article 16, Definitions, are amended to make the following changes:

#### SECTION 1

Modify Sec. 8.3, Tree Protection and Tree Coverage, paragraph 8.3.1, Tree Coverage Standards, paragraph A, Purpose, paragraph B, Applicability, paragraph 2 and new paragraphs 3 and 4, paragraph C, paragraph 1, paragraph 4, paragraph a and new paragraph b, paragraph D, Preserved Tree Coverage, paragraph 3, Clusters of Trees, paragraphs B, C, and D, paragraph 4, Individual Trees, new paragraphs a through c, paragraph 5, Construction in Preserved Tree Coverage Area, paragraph a, including new paragraphs i through iii, and paragraphs b and c, paragraph E, Replacement Tree Coverage, including paragraphs 3 through 6, and new paragraphs 7 through 9; paragraph 8.3.2, Protection of Existing Vegetation, paragraph A; and paragraph 8.3.3, Tree Survey, paragraph C, Specimen Tree Survey, paragraphs 1 through 3, paragraph D, Land Disturbance Tree Survey, paragraphs 1 and 2, and new paragraph 3, and new paragraph 8.3.5, Specimen Tree Survey, paragraphs A through C, all as set forth in the strikeouts and underlining below.

#### Sec. 8.3 Tree Protection and Tree Coverage

##### 8.3.1 Tree Coverage Standards

###### A. Purpose

The primary purpose of the tree coverage standards is the preservation and maintenance of undisturbed tree cover and the provision of replacement tree cover on development sites in the Urban and Suburban Tiers. Tree coverage serves to reduce glare, noise, air pollution, and soil erosion; to moderate temperatures; to reduce stormwater runoff; to preserve remnants of Durham's native ecology; to provide habitat for native plants and wildlife; to provide a healthy living environment; and to make Durham County a more attractive place to live.

###### B. Applicability

1. Tree coverage standards shall only be applied in the Urban and Suburban Tiers.
2. Developments in the RR and RS-20 Districts, and developments of less than four acres in size in the Urban Tier, shall be exempt from tree coverage requirements provided enforceable assurances are provided that no mass grading as defined in Sec. 16.3, Defined Terms, or clear-cutting as defined in paragraph 8.3.4, Clear-Cutting, will be utilized during the development process.
3. No tree coverage is required in non-residential districts in the Urban Tier.

4. Additions to existing residential structures, excluding multiplexes and apartments, are exempt from tree coverage requirements.

**C. Tree Coverage**

1. ~~New development other than additions to existing single family detached houses shall include tree coverage areas on a portion of the development tract. [Paragraphs 2 and 3 are omitted.]~~
4. Tree coverage standards may be met either by preserving existing trees on the site, by planting replacement trees, or a combination of both.

**a. Suburban Tier**

The percentage of a tract which shall have tree coverage is as indicated in the table below. The total tree coverage area shown reflects the addition of replacement tree coverage area to the preserved tree coverage area shown.

<b>Residential Development</b>	
<b>Preserved Tree Coverage Area (%)</b>	<b>Total Tree Coverage Area Required (%)</b>
20	20
At least 15 but less than 20	23
At least 10 but less than 15	24
Less than 10	25
<b>Nonresidential Development</b>	
<b>Preserved Tree Coverage Area (%)</b>	<b>Total Tree Coverage Area Required (%)</b>
10	10
At least 8 but less than 10	13
At least 6 but less than 8	14
Less than 6	15

**b. Urban Tier**

Developments in residential districts in the Urban Tier shall provide a minimum 3% tree coverage.

**D. Preserved Tree Coverage**

Areas proposed as tree preservation shall meet the following requirements to satisfy the tree coverage standards in ~~See paragraph~~ 8.3.1, Tree Coverage and Protection Standards:

[Paragraphs 1 and 2 are omitted.]

**3. Clusters of Trees**

- a. The tree coverage area for a cluster of trees shall be determined by the exterior boundary of the total root protection zones for all of the trees in the cluster.
- b. For parcels greater than one acre, no tree preservation area for a cluster of trees may be counted toward meeting the tree coverage standard unless it includes a minimum of 1,000 square feet (or such smaller area as required by paragraph 8.3.1C.4 above) and has no individual dimension of less than ~~25~~13 feet. The area protected must include the entire root protection zone of the tree cluster, and adequate tree protection measures, as defined in

paragraph 8.3.2, must be taken during the construction and grading of the project.

- c. For parcels one acre or less, no single tree preservation area for a cluster of trees may be counted toward meeting the tree coverage standard unless it includes a minimum of 500 square feet (or such smaller area as required by paragraph 8.3.1C.4 above) and has no individual dimension less than ~~15~~13 feet.
- d. At least ~~75~~60% of the tree coverage included within any tree preservation area shall be composed of trees with at least a ~~two~~one inch dbh as determined through use of landscape sampling pursuant to ~~See~~-paragraph 9.3.3, Sampling.
- e. At least 75% of the root protection zone for a cluster of trees shall be located on the subject site for it to be considered a protected cluster.

**4. Individual Trees**

- a. The tree coverage area for an individual tree shall be determined by the tree's root protection zone.
- b. At least 75% of the root protection zone for an individual tree shall be located on the subject site in order for that tree to count as preserved.
- c. An individual trees may be counted toward tree coverage credit provided that ~~its~~the tree's diameter is at least ten eight inches dbh or greater. ~~Where specimen trees of 18 inches dbh or greater are preserved outside of other required buffers, tree coverage credit shall be granted at one and one half times the size of the root protection zone.~~

**5. Construction in Preserved Tree Coverage Areas**

- a. Preserved tree coverage areas shall not be used for active recreational purposes, ~~except for walking paths and foot trails constructed with minimal disturbance of tree roots and existing vegetation provided a registered arborist has certified that the construction of the trail has been designed to minimize impact to the existing trees. No tree over 10 inches dbh shall be removed for the construction of trails. except the following:~~
  - (i). Unpaved walking paths and foot trails constructed with minimal disturbance of tree roots and existing vegetation. No tree eight inches dbh or greater shall be removed for the construction of the trail.
  - (ii). Paved trails that are public trails and are shown on the most recent version of the Durham Trails and Greenways Plan. No tree eight inches dbh or greater shall be removed for the construction of the trail without approval from the Planning Director or designee. In no case shall the clearing of the trail corridor exceed 16 feet in width.
  - (iii). Amenity areas containing such items as picnic tables and benches provided that such areas are unpaved and no larger than 200 square feet or 10% of the tree coverage area, whichever is smaller. No tree eight inches dbh or greater shall be removed for the construction of an amenity area.
- b. All buildings, utilities, and stormwater facilities shall be set back at least 10 feet from the edge of any preserved tree coverage area. No easements,

except conservation, greenway, and landscape easements, shall be included within a tree coverage area.

- e. ~~Utility lines and drainage channels shall be minimized within the root protection zones of trees to be saved. Preferably, such facilities should be located adjacent to driveways and in groupings as allowed by sound engineering practices.~~

**E. Replacement Tree Coverage**

Areas proposed as tree replacement shall meet the following requirements to satisfy the standards found in ~~See paragraph~~ 8.3.1C, Tree Coverage:

1. For parcels greater than one acre, no tree replacement area may be counted toward meeting the tree coverage standard unless it includes a minimum of 1,000 square feet (or such smaller area as required by paragraph 8.3.1C.4 above) and has no individual dimension of less than 25 feet.
2. For parcels one acre or less, no tree replacement area may be counted toward meeting the tree coverage standard unless it includes a minimum of 500 square feet (or such smaller area as required by paragraph 8.3.1C.4 above) and has no individual dimension less than 15 feet.
3. When replacement trees are provided in order to satisfy the requirements of ~~See paragraph~~ 8.3.1C, Tree Coverage, coverage credit shall be accrued in accordance with the following table with credit calculated based on the required planting area for the proposed trees up to a maximum credit for any single tree of 275 square feet. ~~In meeting this standard, at least 50% of replacement trees shall be two and one half inches dbh or greater. A minimum of 50% of replacement trees shall be large, maturing, hardwood species native to Durham County.~~

Hardwood Caliper (dbh)	Non-Hardwood Height (feet)	Credit (square feet)
4	18 or over	275
3½	16 to 18	250
3	14 to 16	225
2½	12 to 14	200
2	10 to 12	175
1½	8 to 10	150
1	7 to 8	100
<u>0.75</u>	<u>5 to 7</u>	<u>75</u>
<u>Less than 0.754</u>	<u>Less than 57</u>	No credit

*EXAMPLE: 10 trees at 2 1/2-inch caliper requires 2,000 square feet of planting area, and provides 2,000 square feet of replacement tree credits.*

4. At least 50% of replacement trees shall be one inch caliper or greater.
5. A minimum of 50% of replacement trees shall be large, maturing, hardwood species native to Durham County. The remainder of the replacement trees shall be a mix of canopy and understory hardwood and non-hardwood species native to Durham County, as long as no more than 50% of this remainder are pines. Replacement trees shall be provided as a mix of species, in accordance with the standards set in paragraph 9.2.3B.5.

6. At least 75% of the replacement trees planted to augment preserved tree coverage clusters pursuant to paragraph 8.3.1D.3.f shall be native understory hardwoods of one inch caliper or greater.
47. ~~Where evidence can be provided that a portion of a development tract is entirely in agriculture (other than forestry) and has been in continuously agricultural maintained in such use since January 1, 1980, the tree coverage standard indicated in See. See. paragraph 8.3.1C, Tree Coverage, may be reduced by the proportion of the entire development tract that is in such agricultural use, up to 33%, and the replacement tree requirement may be entirely met with trees of any size greater than two inches in caliper with tree coverage credit granted in accordance with the table above. Such portion of the tract shall not be required to remain in agricultural use upon approval of a site plan by the approving authority. Such Tree coverage requirement reductions under this paragraph shall not apply to nonresidential development.~~

*EXAMPLE: A 100 acre site in the Suburban Tier is to be developed as single-family housing. Twenty percent of the site is currently in agricultural use. Therefore, instead of the 20% tree coverage requirement, the overall site is only required to provide 16% tree coverage.*

58. Areas designated as replacement tree coverage shall be subject to the use limitations imposed on preserved tree coverage in ~~See paragraph~~ 8.3.1D.5, Construction in Preserved Tree Coverage Areas, except that stormwater control measures designed as bioretention facilities shall be allowed.
69. Replacement trees shall be planted before any Certificate of Compliance is issued, unless the planting has been deferred to an appropriate season in accordance with the requirements of ~~See paragraph~~ 9.11.2, Extensions for All Other Development.

### 8.3.2 Protection of Existing Vegetation

Any trees preserved on a development tract in order to meet Ordinance requirements or otherwise indicated to be preserved shall meet the following protection standards.

- A. Protection measures to be used during grading and construction, ~~including shall be specified on all grading, site, and erosion control plans with details of the tree protection fence(s) and its location(s), shall be shown on the site plans, landscape, grading, utility, demolition, and erosion control plans.~~

[Paragraphs B through E are omitted.]

### 8.3.3 Tree Survey

[Paragraphs A and B are omitted.]

#### C. ~~Specimen Tree Survey~~

- ~~1. A specimen tree survey shall be required for any development plan showing specific building footprints, site plan, or preliminary plat.~~
- ~~2. The specimen tree survey shall show the general location, species and size of any specimen trees, which shall be defined as all trees other than trees of the *Pinus* genus greater than 18 inches dbh. Specimen trees of the *Pinus* genus shall only be considered significant and required to be shown on tree surveys in the Rural Tier.~~

3. ~~A specimen tree survey shall not be required for land in the floodway, non-encroachment area, floodway fringe, non-encroachment area fringe, or Areas of Shallow Flooding (Zone AO) (unless proposed to be filled or developed in accordance with Sec. 8.4.4, Development in Special Flood Hazard Areas and Future Conditions Flood Hazard Areas), preserved wetlands and wetland buffers, steep slope areas, stream buffers, Major Transportation Corridor (MTC) buffers, and, if preserved, Durham Natural Inventory Sites.~~DC.

**DC. Land Disturbance Tree Survey**

1. A land disturbance tree survey shall be required for any area for which the limits of disturbance are within 30 feet of a preserved tree coverage area, floodplain, steep slope area, stream buffer, required landscape buffer, Inventory Site, wetland, or conservation area site plan, preliminary plat, grading plan, or erosion control plan.
2. The land disturbance tree survey shall show the specific location, species, size and root protection zone of any tree(s) greater than 10eight inches dbh or greater that is within a protected area and 30 feet of any area proposed for disturbance, and meets the qualifications in the above paragraph. For the purpose of this paragraph, a protected area shall include any floodplain, steep slope area, stream buffers, required landscape buffers, tree coverage areas, Inventory sites, or wetlands. In a conservation subdivision under Sec. 6.2.4, Conservation Subdivision, a protected area shall also include any other primary or secondary conservation area.
3. The land disturbance tree survey shall be shown on all site, grading, and erosion control plans, as well as preliminary plats.

[Paragraph 8.3.4 is omitted.]

**8.3.5 Specimen Trees**

- A. A specimen tree shall be defined as any evergreen canopy tree eighteen (18) inches dbh or greater, any deciduous canopy tree twelve (12) inches dbh or greater and any understory tree (deciduous or evergreen) eight (8) inches dbh or greater, except any tree listed as a non-native invasive plant by the US Forest Service or listed as Prohibited for Any Use in the Landscape Guidelines for Durham, North Carolina.
- B. Specimen trees, as defined above, that are saved and protected under the requirements of paragraph 8.3.2, shall be granted tree coverage credit at one and one-half times the size of the root protection zone. Specimen trees that are located in the floodway, non-encroachment area, floodway fringe, non-encroachment area fringe, or Areas of Shallow Flooding (Zone AO) (unless proposed to be filled or developed in accordance with paragraph 8.4.4, Development in Special Flood Hazard Areas and Future Conditions Flood Hazard Areas), preserved wetlands and wetland buffers, steep slope areas, riparian buffers, Major Transportation Corridor (MTC) buffers, and Durham Natural Inventory Sites are not eligible for additional credit as described above.
- C. In order to receive additional credit for specimen trees as described above, a specimen tree survey shall be required showing specific location, species, size, and root protection zone of all specimen trees to be saved. This survey shall be included on all site, landscape, grading, utility, demolition, and erosion control plans.

## SECTION 2

Modify Sec. 9.2, Landscape Design, paragraph 9.2.2, paragraphs A and B, paragraph 9.2.3, paragraph B, paragraphs 1 and 2 as set forth in the strikeouts and underlining below.

### Sec. 9.2 Landscape Design

[Paragraphs 9.2.1, 9.2.4 and 9.2.5 are omitted.]

#### 9.2.2 Basic Plant Types

There are five basic plant types referred to in this section, and all shall require the use of locally-adapted plants. They include deciduous canopy trees, evergreen canopy trees, deciduous understory trees, evergreen understory trees and shrubs, defined as follows:

**A. Deciduous Canopy Trees**

Large deciduous shade trees with a mature height of 30 feet or greater and a mature spread of 30 feet or greater in the Suburban or Rural ~~Tiers~~ or, in the Urban, Compact Neighborhood, and Downtown ~~Tiers~~, a mature height of 20 feet or greater.

**B. Evergreen Canopy Trees**

Trees at least 20 feet tall at maturity that usually have green foliage throughout all seasons of the year.

[Paragraphs C through E are omitted.]

#### 9.2.3 Plant Material Requirements

Unless specified elsewhere in this Ordinance, plant material shall meet the minimum requirements listed below. When determining the quantity of plant material required, the quantity shall always be rounded up to the nearest whole number.

[Paragraphs A and C are omitted.]

**B. Trees**

**1. Deciduous Canopy Trees**

- a. Deciduous Canopy trees shall have a minimum size of two-inch caliper at time of planting, unless permitted under paragraph 8.3.1E.3.
- b. Canopy trees shall be planted at least 18 feet apart.

**2. Evergreen Canopy Trees**

Evergreen trees shall have a minimum height of eight feet at the time of planting.

[Paragraphs 3 through 5 are omitted.]

## SECTION 3

Modify Sec. 9.3, Existing Vegetation Credits for Required Landscaping, paragraph 9.3.2, Existing Trees, paragraph A, as set forth in the strikeouts and underlining below.

### Sec. 9.3 Existing Vegetation Credits for Required Landscaping

[Paragraphs 9.3.1 and 9.3.3 are omitted.]

#### 9.3.2 Existing Trees

- A.** Healthy canopy trees may be retained and credited toward landscaping requirements if each tree proposed for credit has a caliper/dbh of at least two and one-half one inches, or larger if specified elsewhere in this ordinance, and all requirements of ~~See paragraph 8.3.2, Protection of Existing Vegetation,~~ are satisfied. Credit given for existing, healthy, protected trees shall be a number equal to the value of the dbh of each protected tree divided by two inches, but no fraction thereof.

**COMMENTARY:** See paragraphs 9.8.2B and 9.8.3B.2.b for examples.

## SECTION 4

Modify Sec. 9.4, Project Boundary Buffers, paragraph 9.4.5, Constructed Buffer, paragraph 9.4.5E, Specimen Trees Retained, as set forth in the strikeouts and underlining below.

[Paragraphs A through D are omitted.]

### E. Specimen Trees Retained

Existing specimen trees, as defined in ~~See~~ paragraph 8.3.53, Specimen Trees Survey, that are located within a required project boundary buffer shall be retained, except where the approving authority determines that the removal of such trees is required to provide safe and reasonable access to the property.

## SECTION 5

Modify Sec. 12.1, Improvement Requirements, as set forth in the strikeouts and underlining below.

### Sec. 12.1 Improvement Requirements

#### 12.1.1 General

[Paragraphs A through E are omitted.]

#### F. Utility Lines and Drainage Channels

Such facilities shall be located in groupings and with the least possible disturbance to existing trees to the maximum extent allowed by sound engineering practices, as determined by the Public Works director or designee.

[Paragraphs 12.1.2 through 12.1.4 are omitted.]

## SECTION 6

Modify Sec. 15.4, Penalties, paragraph 15.4.7, Special Penalties for Destruction of Existing Vegetation, paragraph D, Applicability and Penalties, paragraph 1, as set forth in the strikeouts and underlining below.

[Paragraphs A through C are omitted.]

### D. Applicability and Penalties

1. Where any tree with a diameter ~~of greater than 10~~eight inches dbh or greater in an area indicated on approved plans to be preserved as follows:

[Paragraphs a and b and paragraph 2 are omitted.]

## SECTION 7

Modify Sec. 16.3, Defined Terms, Specimen Tree, as set forth in the strikeouts and underlining below.

### Sec. 16.3 Defined Terms

**Specimen Tree:** Any evergreen canopy tree eighteen (18) inches dbh or greater, any deciduous canopy tree twelve (12) inches dbh or greater and any understory tree (deciduous or evergreen) eight (8) inches dbh or greater, except any tree listed as a non-native invasive plant by the US Forest Service or listed as Prohibited for Any Use in the Landscape Guidelines for Durham, North Carolina. ~~Any tree greater than 18 inches dbh other than trees of the *pinus* genus, except in the Rural Tier, where trees of the *pinus* genus are considered specimen trees.~~

**SECTION 8**

That the Unified Development Ordinance shall be renumbered as necessary to accommodate these changes and clarifications.

**SECTION 9**

That this amendment of the Unified Development Ordinance shall become effective upon adoption.