



DCRC25-095: Tree Preservation

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Introduction

Tree Code Overview

- Applicability and exemptions
- Definitions
- Tree Preservation Plan
- Preservation Requirements
- Tree protection requirements during construction
- Tree replacement & preservation credits
- Incentives

Areas to Address

- Emphasis on Heritage trees
- Encroachment of Dripline
- Industry best standards
- Updates to definitions
- Trees that are between healthy and dead

Tree Preservation Purpose & Intent

- Promote **ecological, environmental, and aesthetic** values of the city
- Prevent **untimely** and **indiscriminate** removal of trees
- Protect and preserve **native trees**
- Provide for the **replacement** of trees removed **during construction**
- Provide for **shade, windbreaks, and cooling of air**

City-wide Canopy Goals

2020 Urban Forest Master Plan Goals:

- 40% City-wide tree canopy by 2040
- Diverse, healthy, and equitable canopy distribution across the City

The City's canopy goals are achieved by two things:

- Preservation of existing trees
- Landscape plantings

2019 DDC Goals (7.7.2)

City-Wide	30%
East of I-35	40%
West of I-35	20%

Applicability and Exemptions

Applicable

- Undeveloped land
- All non-residential and Multifamily property to be redeveloped
 - When building footprint will change
- Existing single-family (SFR) and duplex properties who apply for a demolition permit
 - Protected trees are 10" or greater

Exemptions

- Agricultural land
- SFR and duplex properties
 - Provided trees are not on a Tree Preservation Plan
- Dead/Diseased trees
- Trees causing risk to the public
- Trees listed on the Texas Department of Agriculture Noxious and Invasive Plant List
- Clearing of Understory to perform surveying
 - Boundary surveying
 - Soil borings
 - Tree Survey
 - Protected Trees must be 10" or greater

Tree Definitions

- **Diameter at Breast Height (DBH)**: The tree trunk diameter measured in inches at a height of 4.5 feet above ground level. For multi-trunk trees, combine the diameter of the largest stem or trunk with one-half of the diameter of each additional stem or trunk, all measured at four and one-half 4.5 feet above ground level.
- **Heritage**: All quality trees with a DBH greater than 18 inches and all Post Oaks with a DBH of 6 inches or greater.
- **Quality**: All healthy non-secondary trees, except Post Oaks, that measure between 6 inches and 18 inches DBH.
- **Secondary**: A healthy Ash, Bois D'Arc, Hackberry, or Cottonwood tree, with a DBH greater than 6 inches.



Tree Definitions (cont.)

Non-Protected:

- Dead or Unhealthy Trees
- Trees that pose an imminent or immediate threat to persons or property
- Crape Myrtles and ornamental pears
- Mesquite and Honey Locust, unless part of a Preserved Habitat or Conservation Easement
- Any tree listed on the Texas Department of Agriculture Noxious and Invasive Plant List



Tree Definitions (cont.)

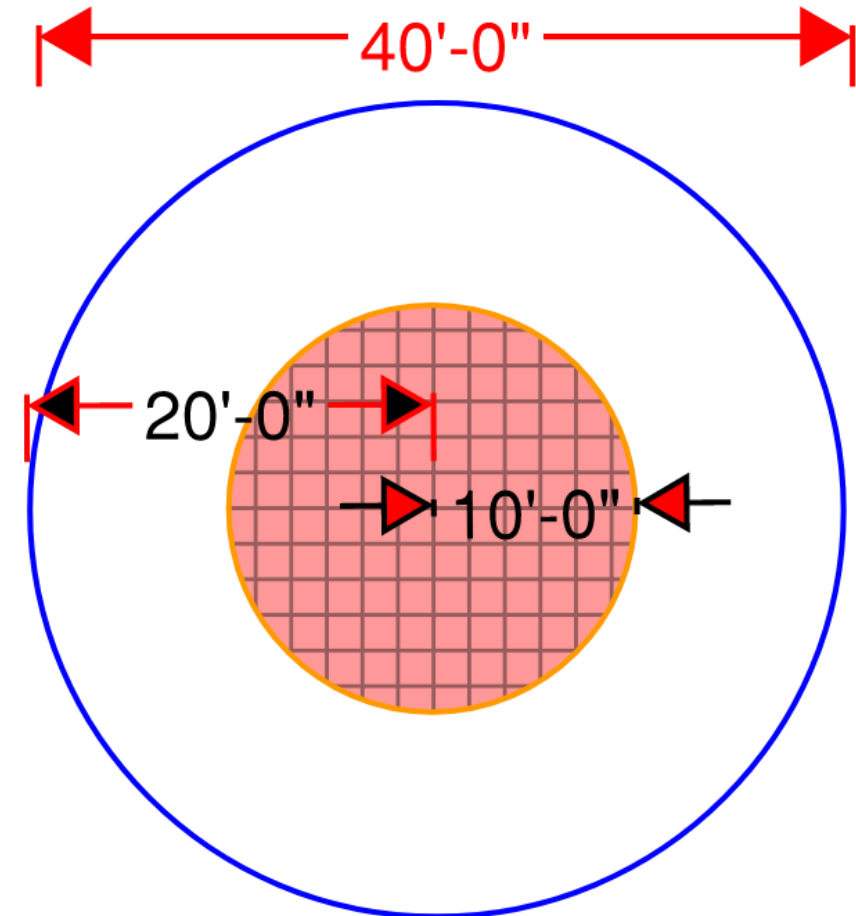
- **Landmark**: A healthy tree designated on the Texas Big Tree Registry; or a tree designated as a historic tree (event of historic significance occurred; at the home of a famous citizen; or has legendary stature in the community, is mentioned in literature/documents of historic value, or is considered unusual due to size, age, or other landmark status).
 - 3 in Denton County on the Texas Big Tree Registry
 - 0 Historically designated trees in Denton County
 - Source: Texas Historic Tree Coalition



Tree Definitions (cont.)

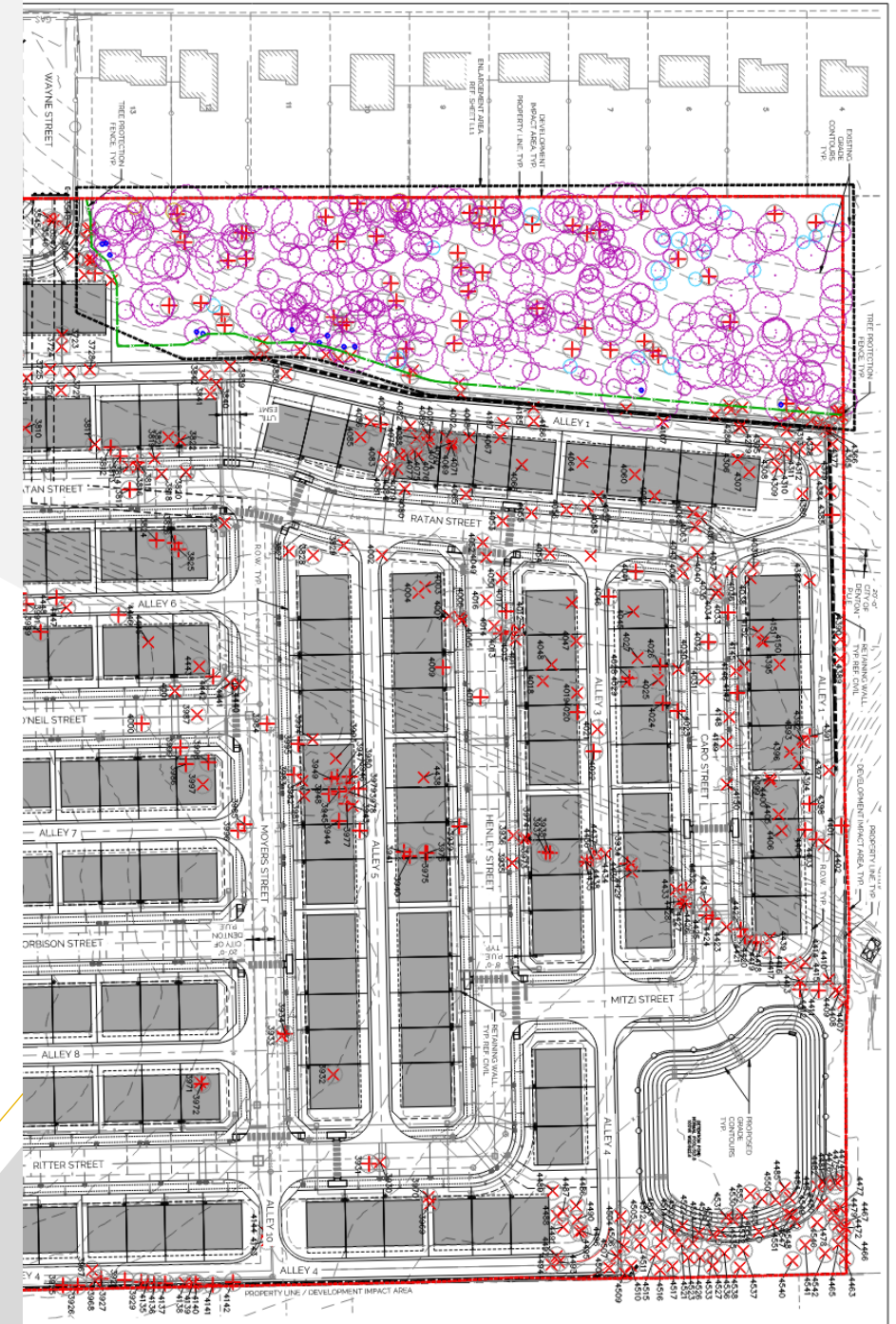
Not in the DDC (yet)

- **Dripline**: A circle around the trunk of the tree equivalent in diameter to 2 times the DBH, in feet.
- **Critical root zone (CRZ)**: A circle around the trunk of the tree equivalent in diameter to the DBH, in feet.



Tree Preservation Plan

- Prepared for any undeveloped land on which protected trees exist
- Tree Survey
- All improvements are noted on this plan
 - Tree Protection fencing
- Lives alongside a project throughout the life of the project



Tree Preservation Requirements

- **Standard Preservation**
 - A minimum of 30% preservation of the total DBH (diameter at breast height) of Heritage and Quality Trees
- **Lowest Preservation Allowed**
 - A minimum of 20% DBH preservation of Heritage and Quality trees with 10% higher mitigation
- **Only secondary trees on-site**
 - 20% preservation of the total DBH

Preservation Relief

- City Council approval
- Criteria for approval
 - Unique physical circumstance
 - Proposed design must minimize the loss of trees to the extent possible
 - Tree preservation and/or mitigation unduly burdens the development property

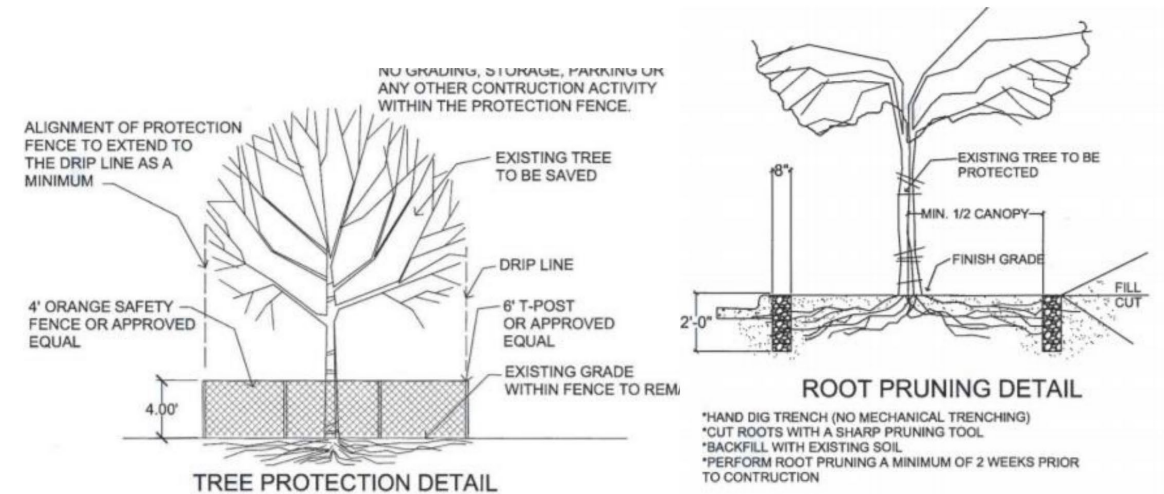
Tree Protection During Construction

- Trees to be preserved must be fenced during construction to protect from encroachment of equipment, waste, etc. within the Dripline or Critical Root Zone (CRZ)
- If fill or excavation is to occur within the dripline, measures must be taken to ensure its survival:
 - Root pruning for retaining walls/tree wells
 - Porous paving or other means to ensure water and oxygen passage to roots if paving is to occur
 - Bark protection
- No work can be done within 5' of the trunk or 1' for every 2" of DBH, whichever is greater

Tree Protection Example



Figure 7.7-1: Tree Protection and Root Pruning Details



Tree replacement

	Ratio	If Below 30%
Heritage	2.5 : 1	2.75 : 1
Quality	2 : 1	2.25 : 1
Secondary	4":1 tree	4":1 tree

- Replacement totals are reduced
 - 50% for residential
 - 40% for non-residential uses

Tree Credits

- Tree Type
 - Heritage 3:1
 - Quality 2:1
 - Secondary 0.5:1
 - Landmark*
- Cluster Credit (additional credit for preserved trees within 10' of each other)
- Street Trees and other required landscape tree plantings can also be applied as credits if they have a minimum DBH of 2" (7.7.5 C.2.c.)



Tree Mitigation Worksheet (30% Preservation - Non-Residential and Mixed-Use)			
	dbh		
Total (Healthy) dbh	272		
Total (Healthy) Non-Protected dbh	103		
Dead Tree dbh	0		
Total (Healthy) Heritage/Quality dbh	74		
Required Preservation (30%)	22.2		
Provided Heritage/Quality Preservation dbh:	25		
Required Preservation dbh Achieved?	Yes		
Protected Trees Removed			
Type	dbh Removed	Replacement Ratio	Calculated DBH
Heritage	8	2.5:1	20
Quality	41	2:1	82
Subtotal			102
	Trees Removed	Replacement Ratio	Calculated DBH
Secondary	1	4":1 tree	4
Total			106
Preliminary Mitigation dbh		40% Reduction	63.6
Trees Preserved			
Type	dbh Preserved		Preservation Credit
Landmark in DIA	0	4:1	0
Heritage in DIA	0	3:1	0
Quality in DIA	25	2:1	50
Secondary in DIA	89	0.5:1	12.5
Add'l Cluster Credit	0	1.15:1	0
Total	114		62.5
Mitigation dbh			1.1

*Note: Secondary preservation credit cannot exceed 50% of the dbh of preserved protected trees. The formula will not return a result for "Secondary Preservation Credit" that is higher than permitted.

Tree Mitigation Worksheet (30% Preservation - Residential)			
	dbh		
Total (Healthy) dbh	491		
Total (Healthy) Non-Protected dbh	18		
Dead Tree dbh	32		
Total (Healthy) Heritage/Quality dbh	36		
Required Preservation (30%)	10.8		
Provided Heritage/Quality Preservation dbh:	20		
Required Preservation dbh Achieved?	Yes		
Protected Trees Removed			
Type	dbh Removed	Replacement Ratio	Calculated DBH
Heritage	0	2.5:1	0
Quality	16	2:1	32
Subtotal			32
	Trees Removed	Replacement Ratio	Calculated DBH
Secondary	19	4":1 tree	76
Total			108
Preliminary Mitigation dbh		50% Reduction	54
Trees Preserved			
Type	dbh Preserved		Preservation Credit
Landmark	0	4:1	0
Heritage	20	3:1	60
Quality	0	2:1	0
Secondary*	123	0.5:1 *	0
Add'l Cluster Credit	0	1.15:1	0
Total	143		60
Mitigation dbh			-6

Tree Mitigation Worksheet (20% Preservation)			
Reduction due to Higher Mitigation			
	dbh		
Total (Healthy) dbh	1446.5		
Dead/Diseased Tree dbh	393.8		
Total (Healthy) Heritage/Quality dbh	1,185		
Required Preservation (20%)	237.06		
Provided Heritage/Quality Preservation dbh:	332.3		
Preservation dbh Above Required	95.24		
Requires Higher Mitigation (Max 10%)	23.29		
Required Preservation dbh Achieved?	Yes		
Higher Mitigation			
Type	dbh Removed	Replacement Ratio	Calculated DBH
Heritage	870.6	2.75:1	2394.15
Quality	64.1	2.25:1	144.225
Subtotal	934.7		2538.375
Higher Mitigation Total dbh achieved?			Yes
Protected Trees Removed			
Type	dbh Removed	Replacement Ratio	Calculated DBH
Heritage	0	2.5:1	0
Quality	0	2:1	0
Subtotal			0
	Trees Removed	Replacement Ratio	Calculated DBH
Secondary	7	4":1 tree	28
Total			2566.375
Preliminary Mitigation dbh		50% Reduction	1283.1875
Trees Preserved (DIA)			
Type	dbh Preserved		Preservation Credit
Landmark	0	4:1	0
Heritage	299.6	3:1	898.8
Quality	32.7	2:1	65.4
Add'l Cluster Credit	60.8	1.15:1	69.92
Total	332.3		1034.12
Required Mitigation dbh			249.0675

Areas to Address

Staff Recommendations

- Emphasis on Heritage trees
- Encroachment of Dripline
- Industry best standards
- Updates to definitions
- Trees that are not completely healthy nor dead/diseased

DCRC Additional Areas to explore

Questions

