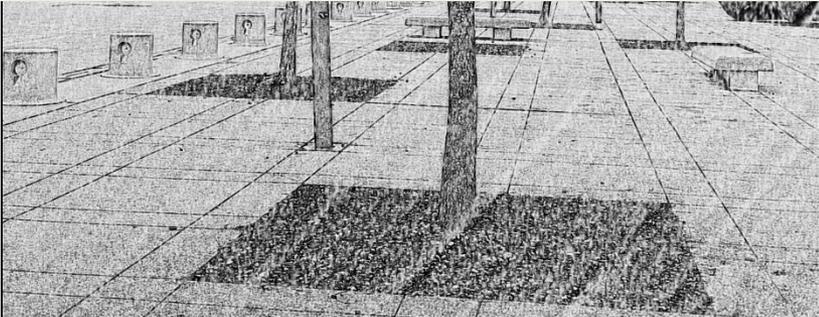




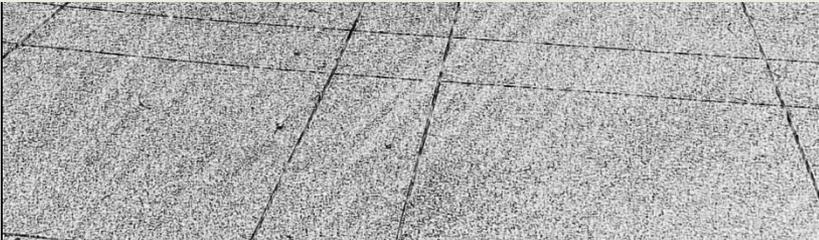
ARTICLE X LANDSCAPE AND TREE PRESERVATION REGULATIONS



51A-10.130 Tree Preservation, Removal, and Replacement



Zoning Ordinance Committee – September 17, 2015



TOPICS FOR DISCUSSION

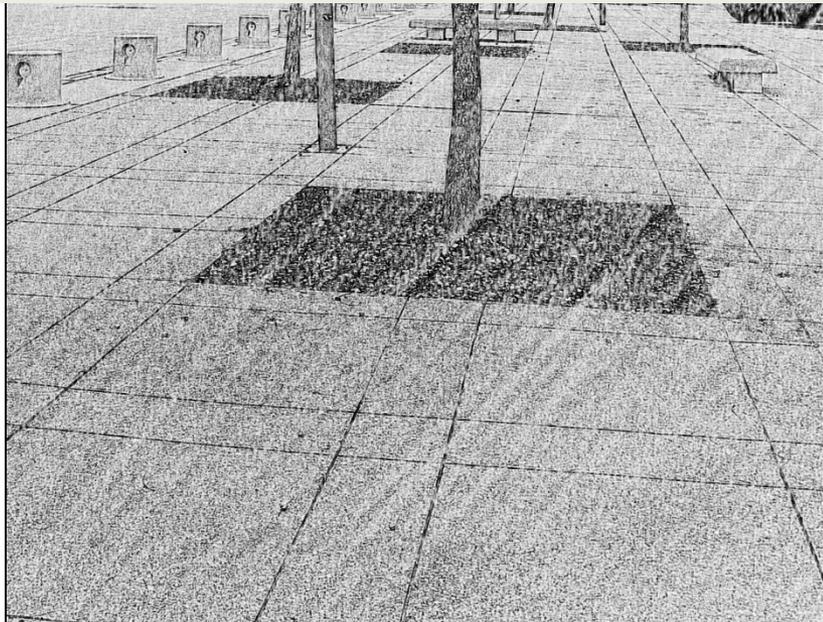
- Tree removals without permit
- Land clearing standards
- Enforcement
- Tree maintenance
- Protected Tree List
- Approved Replacement Tree List
- Landscape and Tree Manual



ARTICLE X LANDSCAPE AND TREE PRESERVATION REGULATIONS



Tree Removals Without Permit



TREE REMOVALS WITHOUT PERMIT

Current:

- Tree removal applications are required only for the removal of protected tree species and sizes.
- Non-protected trees may be removed without permit.
- In cases where land areas are fully cleared without a tree survey, no review can occur to determine the number of protected and non-protected trees on the lot.
- In the process of tree removal, the act of clearing the site may be considered a 'grading' process which also requires a building permit, or may involve 'filling' (depositing loads of material) which may require council authorization. Clearing a site without an appropriate permit, with or without tree removal, is a code violation.

TREE REMOVALS WITHOUT PERMIT

Proposed:

- In addition to required mitigation, any violation of the provisions of this ordinance will be directly assessed a penalty fee for the removal of or serious injury to protected trees, to be paid into the Reforestation Fund. Significant Tree removal penalty would be higher. (When permit is applicable to the site)
- In addition, a citation may be issued for a misdemeanor, and upon conviction, the responsible party may be fined an additional fee for the removal or damage of each tree, and subject to a fine for each day of the violation.

TREE REMOVALS WITHOUT PERMIT

Proposed:

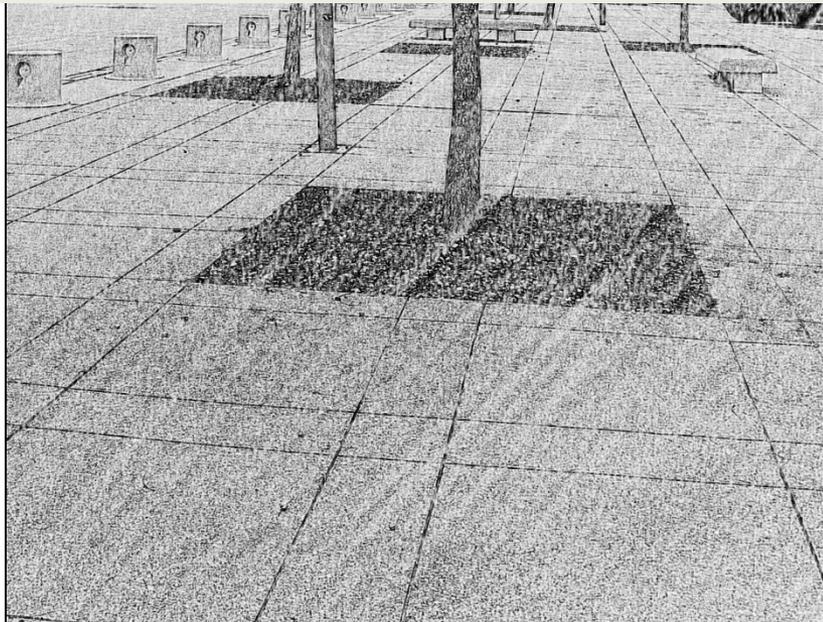
- In cases where tree evidence is removed, the building official may use recent aerial imagery - pre-dating an unauthorized tree removal - to be used for calculation of the square footage of tree canopy coverage through a **Forest Stand Delineation** for determining the replacement value for the tree stand on the lot.
- All trees, removed from an applicable property without an approved tree removal application for the protected trees removed on the lot, will be designated protected trees and may be subject to tree replacement.



ARTICLE X LANDSCAPE AND TREE PRESERVATION REGULATIONS



Land Clearing Standards



LAND CLEARING

- Land clearing, or 'clear-cutting', has been an ongoing topic in public and private discussions.
- Land clearing can be described as the destruction and removal of vegetation by manual, mechanical, or chemical methods.
- Clearing is typically applied to a site under a grading permit and a tree removal permit, or separately under a building permit for construction.
- Some clearing occurs without authorization or permit.
- The amount of clearing is usually determined by the proposed use which is generally regulated under other zoning ordinances.
- The amount of clearing for any project is typically pre-determined by the decisions made during pre-development and conceptual design.

LAND CLEARING

Current Tools For Developing

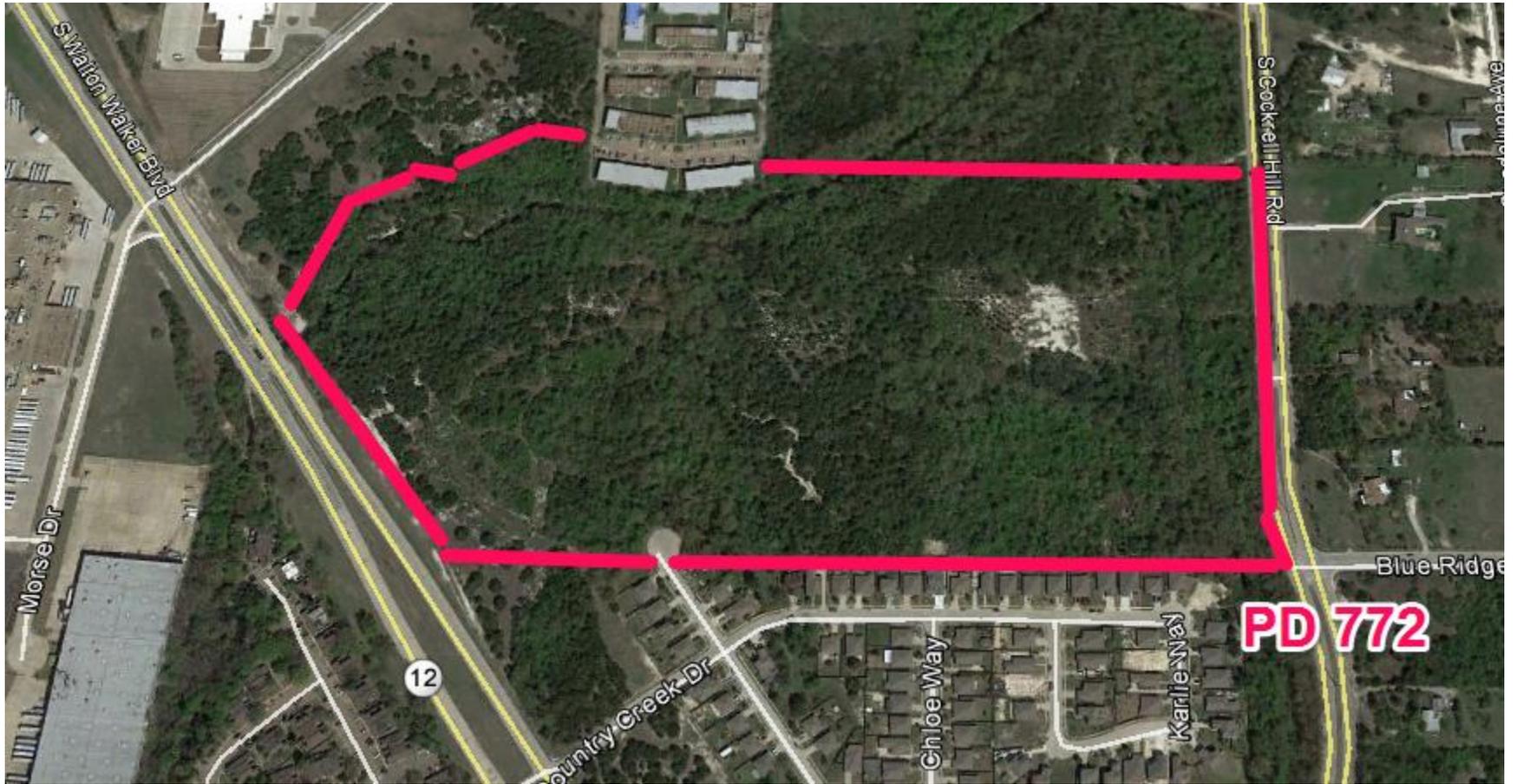
- Community Unit Development
- Conservation Easement
- Planned Development
- Clustered housing, conservation design, or conservation subdivision (rural).

LAND CLEARING

Recommendations

- Approve Article X landscape and tree replacement recommendations.
- Minimize development impacts to sensitive land areas, including floodways, topography, and escarpment areas. Sustainable Development Incentives promotes this.
- Place greater emphasis on land and tree conservation as primary zoning regulations in determining the extent of sustainable development. Encourage in pre-design.

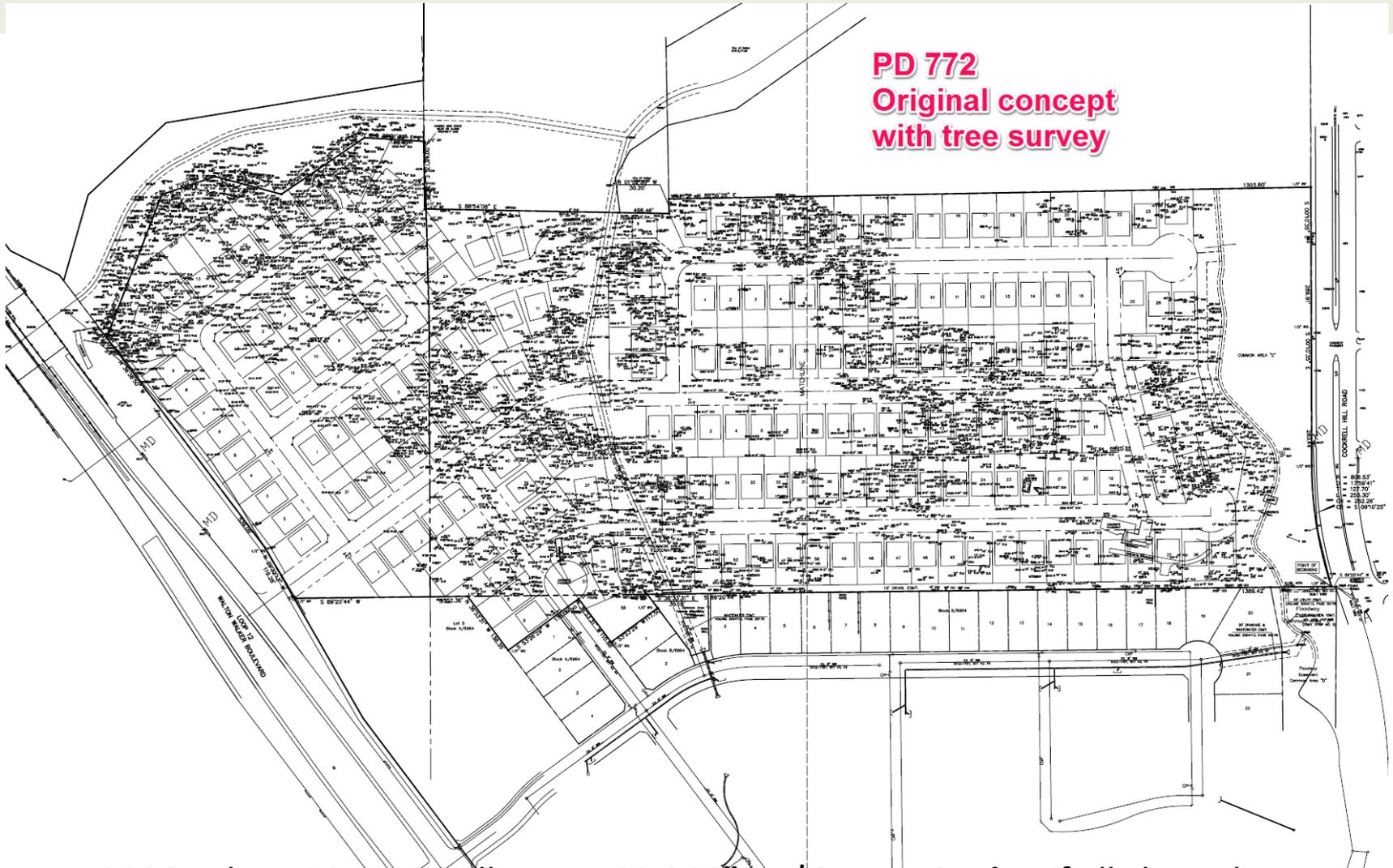
LAND CLEARING



LAND CLEARING



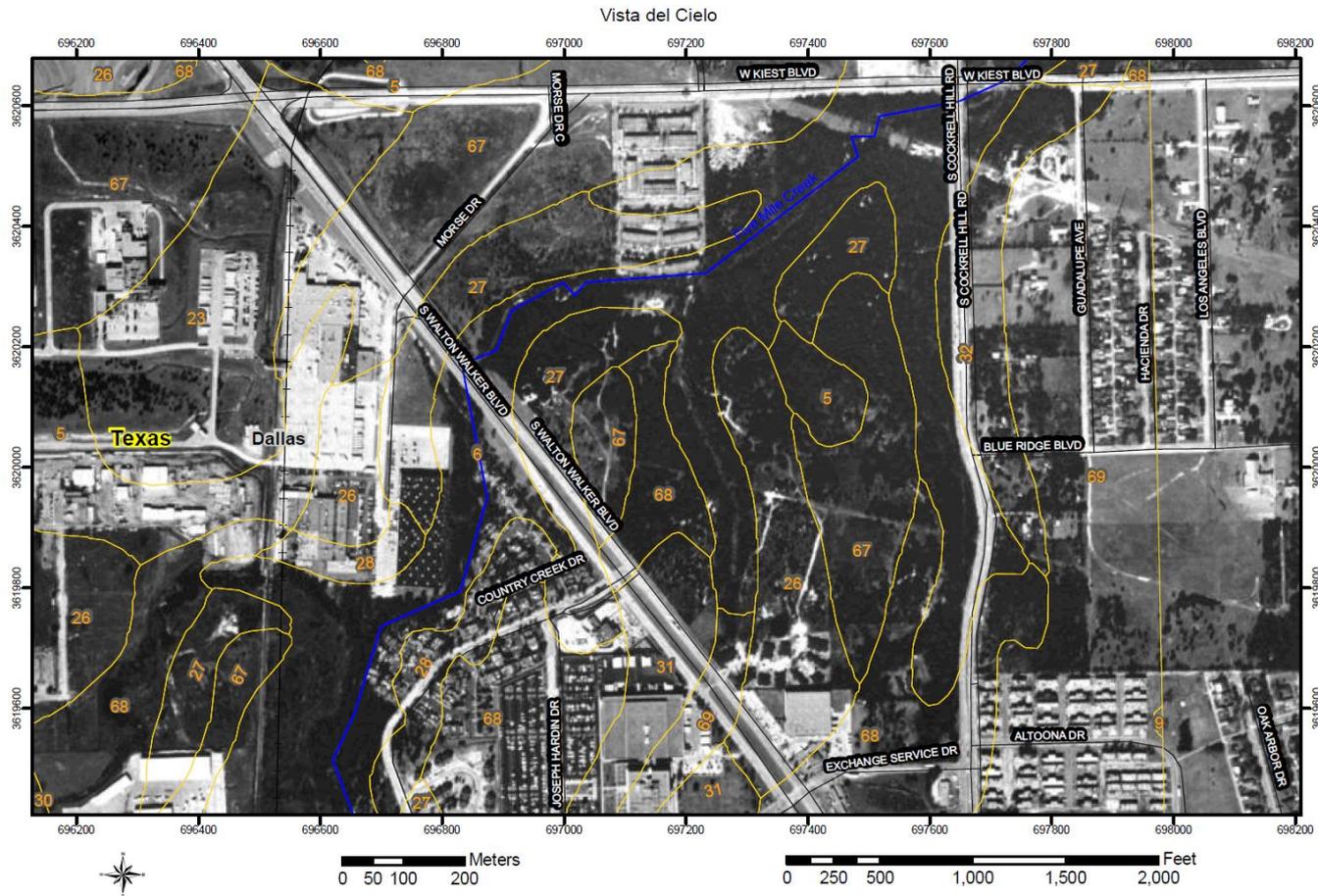
LAND CLEARING



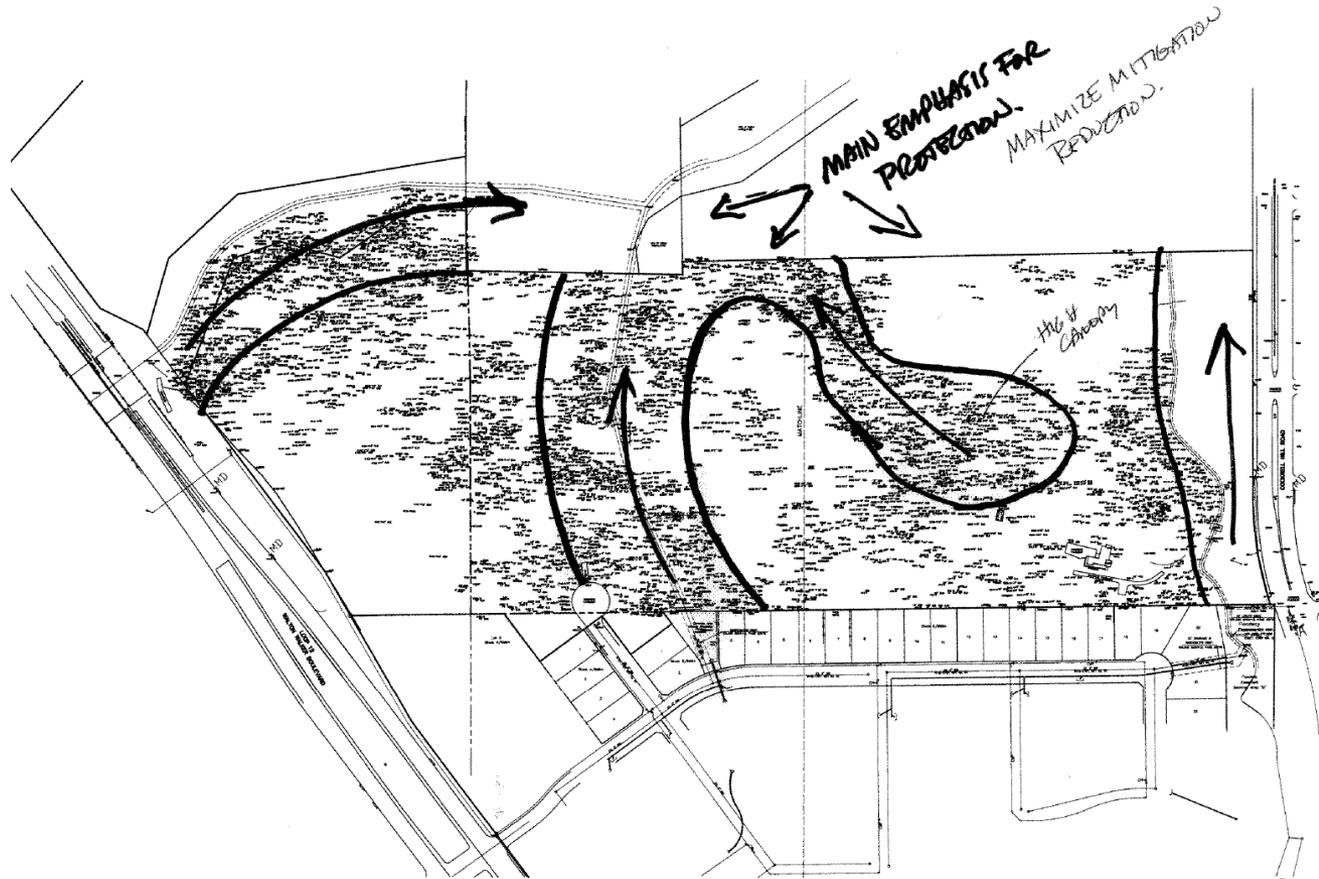
May 2006: The mitigation tally was ~**20,966**” or **\$2,177,524** due if all cleared.

LAND CLEARING

SOIL SURVEY OF DALLAS COUNTY, TEXAS

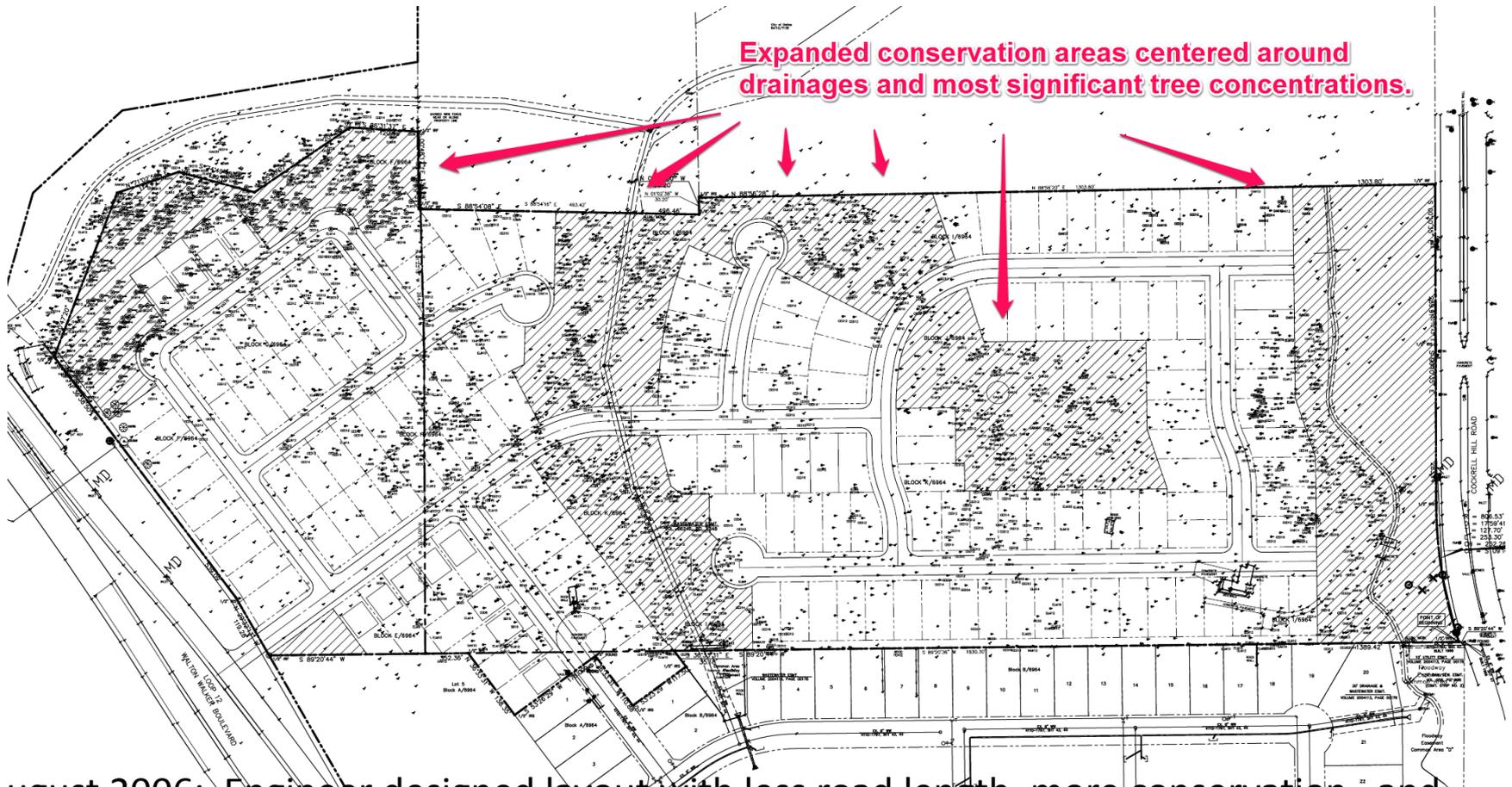


LAND CLEARING



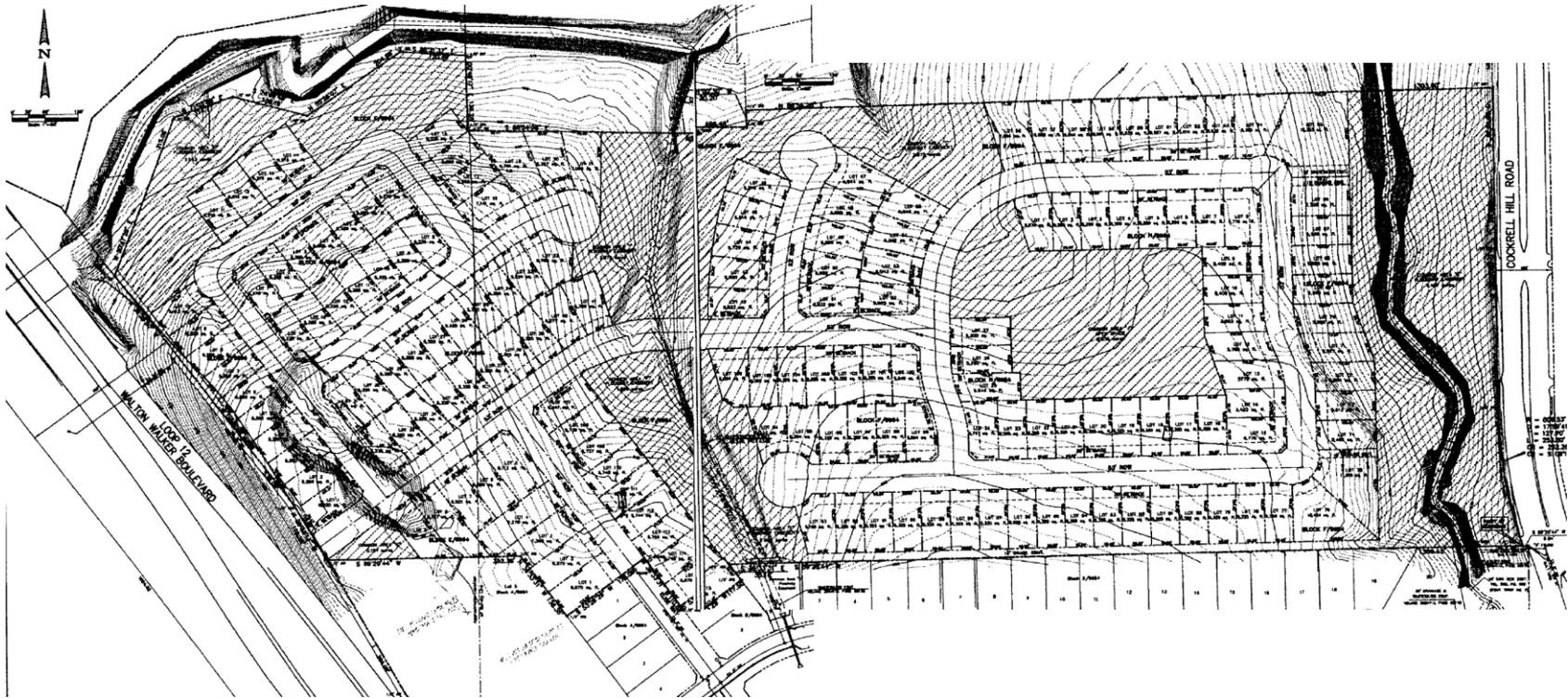
Owner, engineer, and city arborist collaboration. Field review, assessment of soil survey, topography, aerial images resulted in a rough area of greatest significant and protected tree locations based on prime growing conditions and disturbances.

LAND CLEARING



August 2006: Engineer designed layout with less road length, more conservation , and slightly fewer units. The planned development was designed with conservation areas.

LAND CLEARING



Preliminary plat:

May 2006

~20,966 in.

Conservation area

Planting

REMAINING

August 2006

~9,604 in. (54% of inches not removed)

7,683 in. reduction (80% mitigation reduction)

1,044 in. (174 SF) and 336 in. ROW planting.

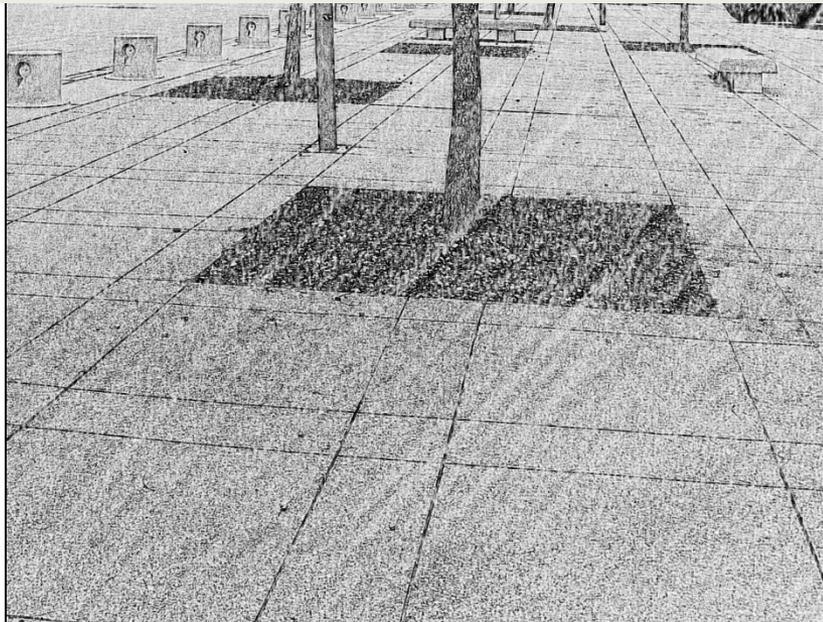
541 in. remain to be mitigated.



Article X Tree Ordinance



Enforcement



ENFORCEMENT

General Division – General Maintenance

Current:

- (a) Required plant materials must be maintained in a healthy, growing condition at all times. The property owner is responsible for regular weeding, mowing of grass, irrigating, fertilizing, pruning, and other maintenance of all plantings as needed. Any plant that dies must be replaced with another living plant that complies with this article and the approved landscape plan, if any, within 90 days after notification by the city.
- (b) Any damage to utility lines resulting from the negligence of the property owner or his agents or employees in the installation and maintenance of required plant materials in a utility easement is the responsibility of the property owner. If a public utility disturbs a landscaped area in a utility easement, it shall make every reasonable effort to preserve the plant materials and return them to their prior locations after the utility work. If, nonetheless, some plant materials die, it is the obligation of the property owner to replace the plant materials.

ENFORCEMENT

Landscape Division

Current:

- (a) Except as otherwise provided in Subsection (b), all landscaping must be completed before the final inspection of any building on the lot. If there is an approved landscape plan for the lot, the landscaping must comply with that plan before the final inspection.
- (b) If the property owner provides the building official with documented assurance that the landscaping will be completed within six months, the building official may permit the property owner to complete his landscaping during the six-month period.
- (c) If, at the end of the six-month period, the landscaping has not been installed in accordance with the landscape plan, the owner of the property is liable to the city for a civil penalty in the amount of \$200 a day for each calendar day thereafter until the landscaping is properly installed. The building official shall give written notice to the property owner of the amount owed to the city in civil penalties, and shall notify the city attorney of any unpaid civil penalty. The city attorney shall collect unpaid civil penalties in a suit on the city's behalf.
- (d) The civil penalty provided for in Subsection (c) is in addition to any other enforcement remedies the city may have under city ordinances and state law.

ENFORCEMENT

Landscape and Tree Replacement Divisions

Current:

- Whenever any work is being done contrary to the provisions of this division, the building official may order the work stopped by notice in writing served on any person engaged in the work or causing the work to be done. A person issued this notice shall stop work immediately until authorized by the building official to proceed with the work.

ENFORCEMENT

Tree Replacement Division

Current:

10.139. Fines.

- A person convicted of violating this division shall be subject to a fine of not less than \$2,000.00 per protected tree removed or seriously injured without authorization, and not less than \$2,000.00 per day for any other violation of this division.

ENFORCEMENT

Tree Replacement Division

Current:

10.140.

- (a) A person is criminally responsible for a violation of this division if the person:
- (1) removes or seriously injures, or assists in the removal or serious injury of, a protected tree without complying with the requirements of this division; or
 - (2) owns part or all of the land where the violation occurs.

ENFORCEMENT

General Division

Proposed:

- Require any property subject to a required landscape plan by approval of the Board of Adjustment, City Plan Commission, or City Council, be reviewed for landscape compliance when application is made for a renewal or amendment of an SUP or PD, or an amended landscape plan, for the property.

ENFORCEMENT

Tree Replacement Division

Proposed:

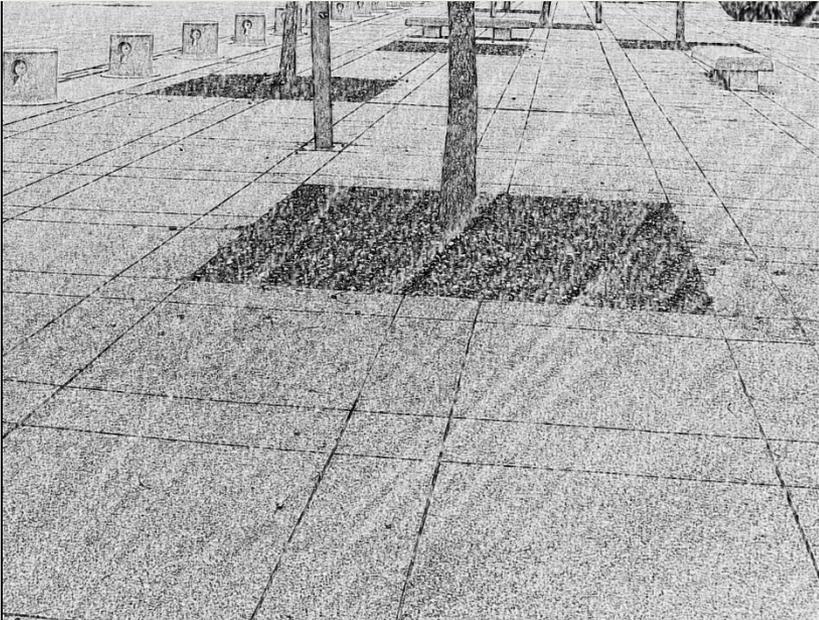
- Amend the violations to be based on civil misdemeanor classification instead of the current criminal violation.
- Amend the fines to be commensurate with civil misdemeanor fines.



Article X Tree Ordinance



Tree Maintenance



TREE MAINTENANCE

- Article X provides only for tree protection measures to implement on construction sites. Not a tree maintenance ordinance.
- Additional information is needed to provide best management practices for tree care on construction sites, on public property, and for the general public on private residential and commercial properties.

TREE MAINTENANCE

Proposed:

- Provide for general information on tree care and tree maintenance in the proposed Landscape and Tree Manual to supplement this ordinance.
- Standards and Best Management Practices will be set based on ANSI A300 and ISA Best Management Practices.
- All tree care operations on trees owned by the City of Dallas must conform to these standards.

TREE MAINTENANCE

Proposed:

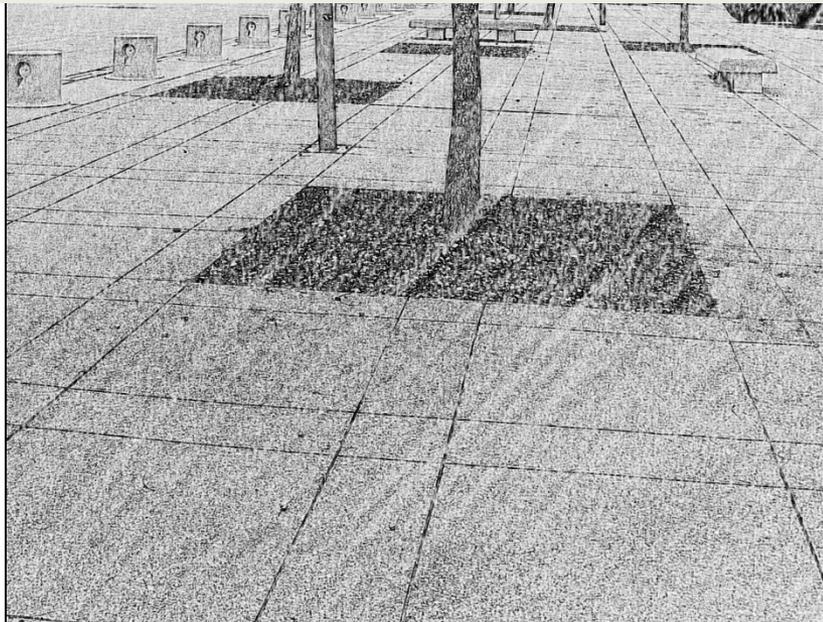
Tree 'topping' will be prohibited on all applicable large and medium tree species and considered irreparable damage subject to penalties, fines, and tree replacement.



Article X Tree Ordinance



Protected Tree List



PROTECTED TREE DEFINITION

Current

(22) PROTECTED TREE means:

- (A) a tree that has a caliper of eight inches or more and is not one of the following trees:
- (i) *Acer saccharinum* (Silver Maple).
 - (ii) *Ailanthus altissima* (Tree of Heaven).
 - (iii) *Albizzia julibrissen* (Mimosa or Silktree).
 - (iv) *Celtis occidentalis/ laevigata* (Hackberry or Sugarberry).
 - (v) *Fraxinus velutina* (Arizona Ash).
 - (vi) *Juniperus virginiana* (Eastern Red Cedar)[unless protected under subparagraph (B).]
 - (vii) *Maclura pomifera* [female only] (Bois d'Arc or Horseapple).
 - (viii) *Melia azedarach* (Chinaberry).
 - (ix) *Prosopis glandulosa* (Mesquite) [unless protected under subparagraph (B).]
 - (x) *Salix nigra* (Black Willow).
 - (xi) *Sabium sebiferum* (Chinese Tallow).
 - (xii) *Ulmus pumila* (Siberian Elm).
- (B) an Eastern Red Cedar (*Juniperus virginia*) or Mesquite (*Prosopis glandulosa*) tree that has a caliper of eight inches or more and the trunk is located:
- (i) in, or within 120 feet of the boundary of: a floodplain [as defined in Article V]; a wetland area [as defined in federal environmental regulations]; or an escarpment zone [as defined in Article V]; or
 - (ii) within 50 feet of a natural channel setback line [as defined in Article V].
- (C) an Eastern Red Cedar (*Juniperus virginiana*) or Mesquite (*Prosopis glandulosa*) tree that has a caliper of at least 12 inches; or
- (D) a tree that was planted as a replacement tree.

PROTECTED TREE DEFINITION

Proposed

PROTECTED TREE means trees of all species that are at least eight (8) inches in diameter except for trees identified as unprotected in this section, and any eligible canopy tree which projects a tree canopy coverage over a lot or tract when identified within an optional Forest Stand Delineation* review, and a tree that was planted as a replacement tree.

*The Forest Stand Delineation is an optional and alternative means of assessing tree coverage over a property for tree mitigation reductions, and a method for calculating the level of, and mitigation for, illegal tree removals on a lot or tract.

TREES NOT PROTECTED

Proposed

Common Name	Botanical Name	Condition
<u>Silver maple</u>	<i>Acer saccharinum</i>	None
<u>Tree-of-Heaven</u>	<i>Ailanthus altissima</i>	None
<u>Mimosa, or Silktree</u>	<i>Albizzia julibrissen</i>	None
<u>Arizona ash</u>	<i>Fraxinus velutina</i>	None
<u>Chinaberry*</u>	<i>Melia azedarach</i>	None
<u>Chinese tallow*</u>	<i>Sabium sebiferum</i>	None
<u>Siberian elm</u>	<i>Ulmus pumila</i>	None
Callery Pear	<i>Pyrus calleryana</i>	All cultivars
Palm		All plants in Palmae

*Invasive – TDA Noxious Weed or TPWD Prohibited Exotic Species

PROTECTED TREE DEFINITION

Proposed for PROTECTED status at 8” and larger

Common Name	Botanical Name	Condition
<u>Hackberry or sugarberry</u>	<i>Celtis occidentalis/laevigata</i>	None
<u>Black willow</u>	<i>Salix nigra</i>	None
<u>Bois d' arc</u>	<i>Maclura pomifera</i>	Male and female
Cottonwood	<i>Populus spp.</i>	None
Mulberry	<i>Morus spp.</i>	None
Eastern redcedar	<i>Juniperus virginiana*</i>	All, at 8” and larger.
Mesquite	<i>Prosopis glandulosa*</i>	All, at 8” and larger.

FOREST STAND ADJUSTMENT*

- Eastern red cedar and mesquite trees may be assessed through an optional Forest Stand Delineation process to qualify a monoculture (single species) stand of trees on a lot (or combined lots) over two acres for providing an alternative measurement of the stand to determine potential tree mitigation requirements.

FOREST STAND ADJUSTMENT

Definitions

Stand –

An aggregation of trees or other growth occupying a specific area and sufficiently uniform in species composition, size, age, arrangement, and condition as to be distinguished from the forest or other growth on adjoining areas.

Monoculture –

A stand of a single species, generally even-aged (single age class).

Age Class -

A distinct aggregation of trees originating from a single natural event or regeneration activity, or a grouping of trees, e.g., 10-year age class, as used in inventory or management.

FOREST STAND ADJUSTMENT

Conditions for Eastern Redcedar and Mesquite

An eastern redcedar (*Juniperus virginia*) or mesquite (*Prosopis glandulosa*) tree with a diameter of eight inches or more is protected.

The individual tree must be identified on a tree survey if the trunk is located:

- (i) in, or within ~~250~~ **150** feet of the boundary of: a floodplain [as defined in Article V]; a wetland area [as defined in federal environmental regulations]; or an escarpment zone [as defined in Article V];
- (ii) within **50** feet of a natural channel setback line [as defined in Article V]
- (iii) within ~~50~~ **20** feet of a construction or tree disturbance area.

Alternative method of designating mitigation for predominant ERC or mesquite stands based on site pre-assessment:

Outside of the previous designated zones, a stand, or a partial stand, of a predominant population of eastern redcedar or mesquite trees, on vacant property *two acres or larger*, may be reviewed under a **Forest Stand Delineation**. The application must provide tree canopy coverage, average tree height, a sample of average tree diameter by measurement, an aerial image of the area, and an estimate of the general age of the stand from historical record.

FOREST STAND ADJUSTMENT

Conditions for Eastern Redcedar and Mesquite

Continued....

The **Forest Stand Delineation** must be approved by the building official. Based upon the conclusions of the survey, the estimated tree value derived from the total square footage of the portion of the survey for the species will be calculated.

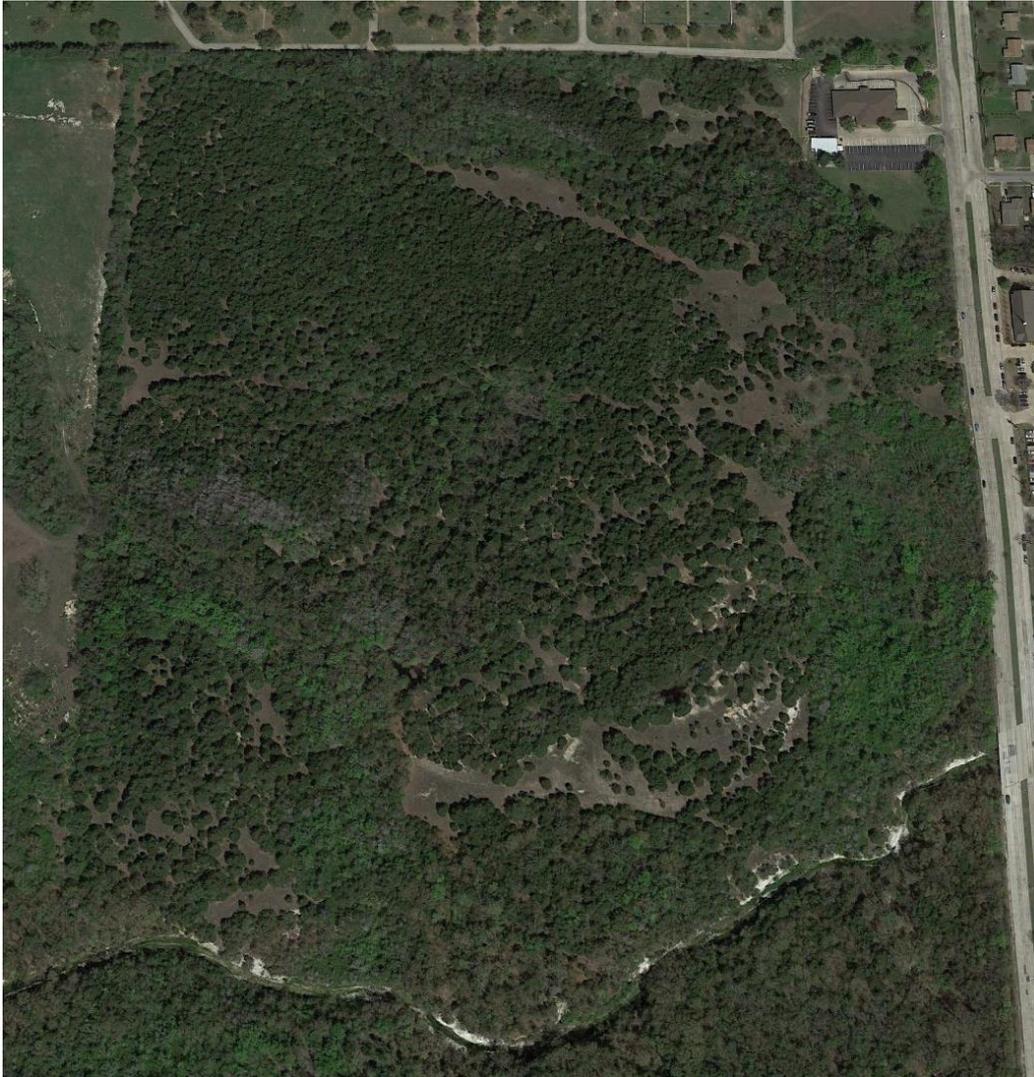
In general, the overall rated value of the stand is based on the function the trees provided for soil retention, water interception, and wildlife protection, and other provided ecosystem resources, for its past, and future potential duration, on the property.

Mitigation value for the selected stand may be reduced to 20%-40% of the overall rated value of the stand on the basis of age class, and when:

- 1) the findings of the Forest Stand Delineation show the stand is predominantly (90% or greater) eastern redcedar or mesquite, and
- 2) the data, and city arborist's verification, supports the claim of the predicted age of the tree stand, and the comprehensive tree assessment is consistent with the stated tree sizes.

DETERMINING PREDOMINANT ERC STAND

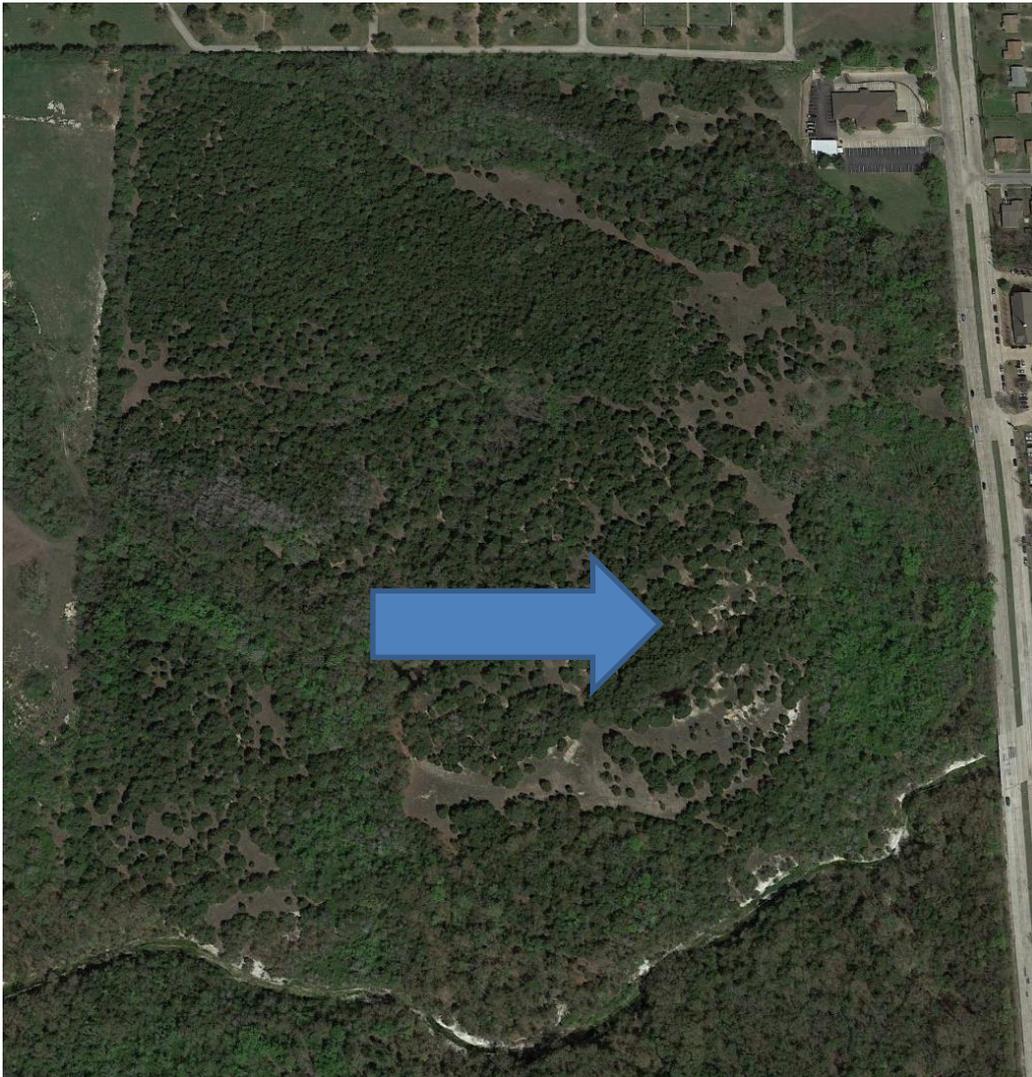
Forest Stand Delineation



- The 2015 Google Earth view shows the existing conditions on the property.
- A FSD can distinguish predominant young juniper stands distinguished from older stands, or those of other species.
- Field assessment is required to assure boundaries of the stratified forest survey.
- Historical ground and aerial imagery, or other records, can provide more confirmation on the age and history of the tree stand.

DETERMINING PREDOMINANT ERC STAND

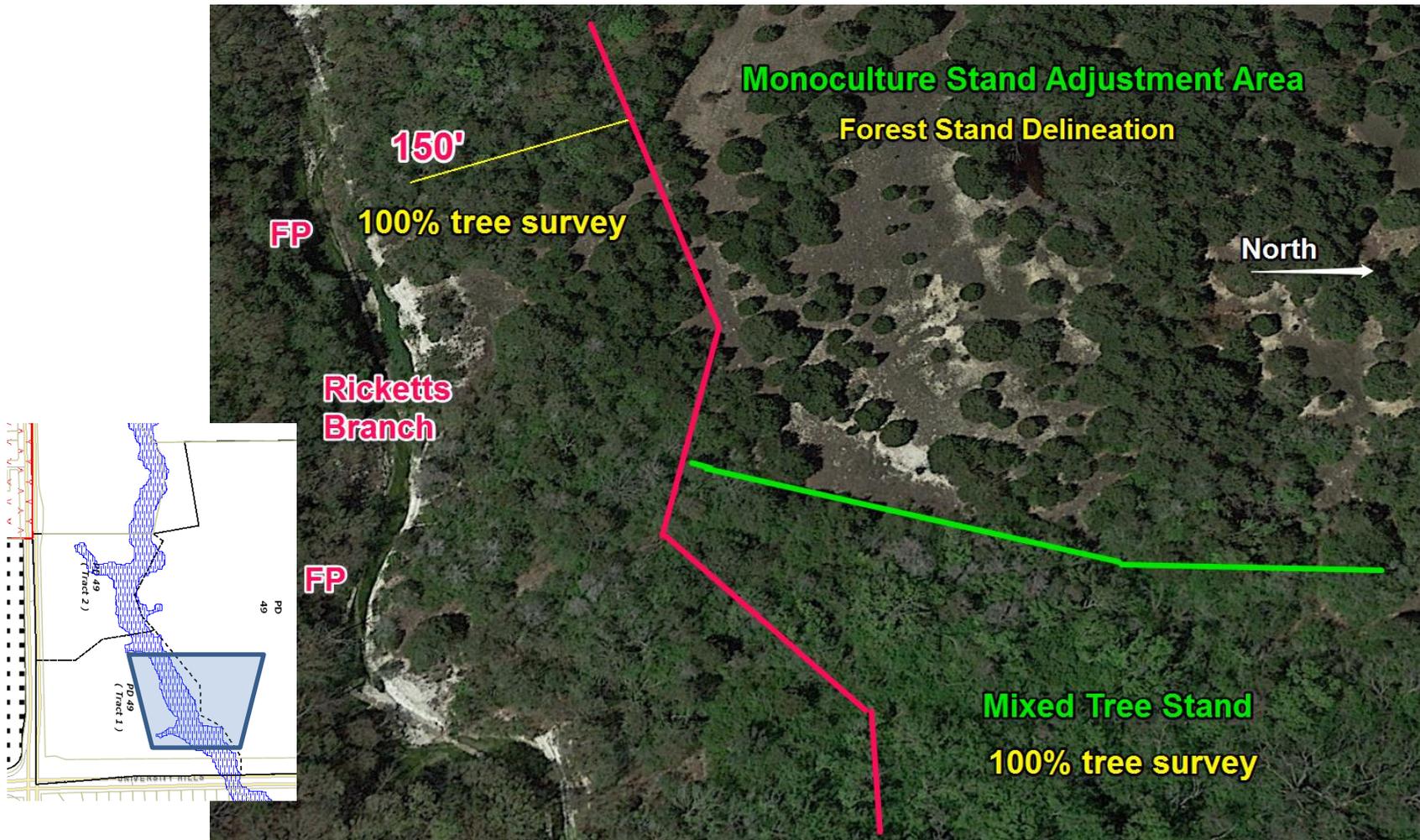
Forest Stand Delineation



- The 2015 Google Earth view shows the existing conditions on the property.
- A FSD can distinguish predominant young juniper stands distinguished from older stands, or those of other species.
- Field assessment is required to assure boundaries of the stratified forest survey.
- Historical ground and aerial imagery, or other records, can provide more confirmation on the age and history of the tree stand.

FOREST STAND ADJUSTMENT

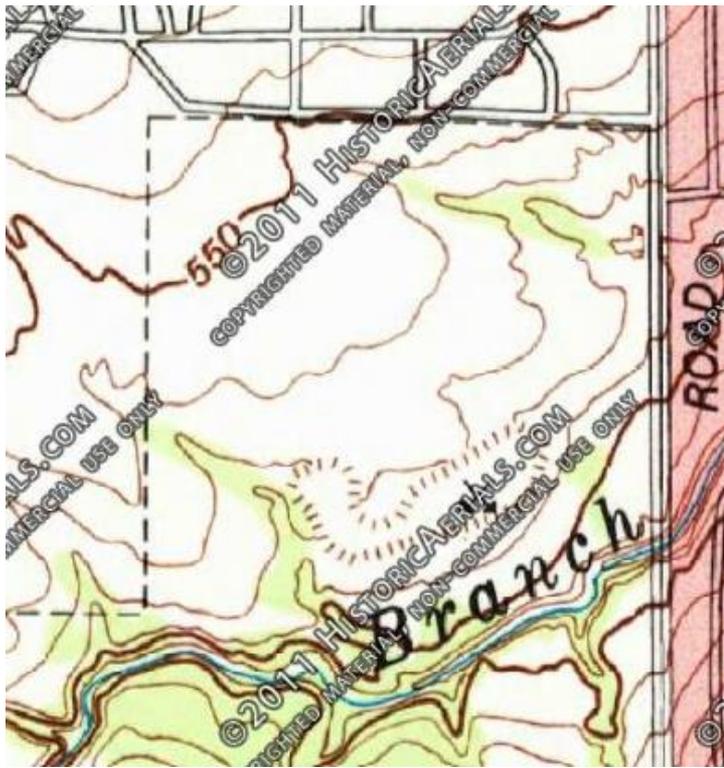
Eastern redcedar monoculture tree stand



Measure distance from floodway and the stand border from aerials and field assessment.

PROTECTED TREE DEFINITION

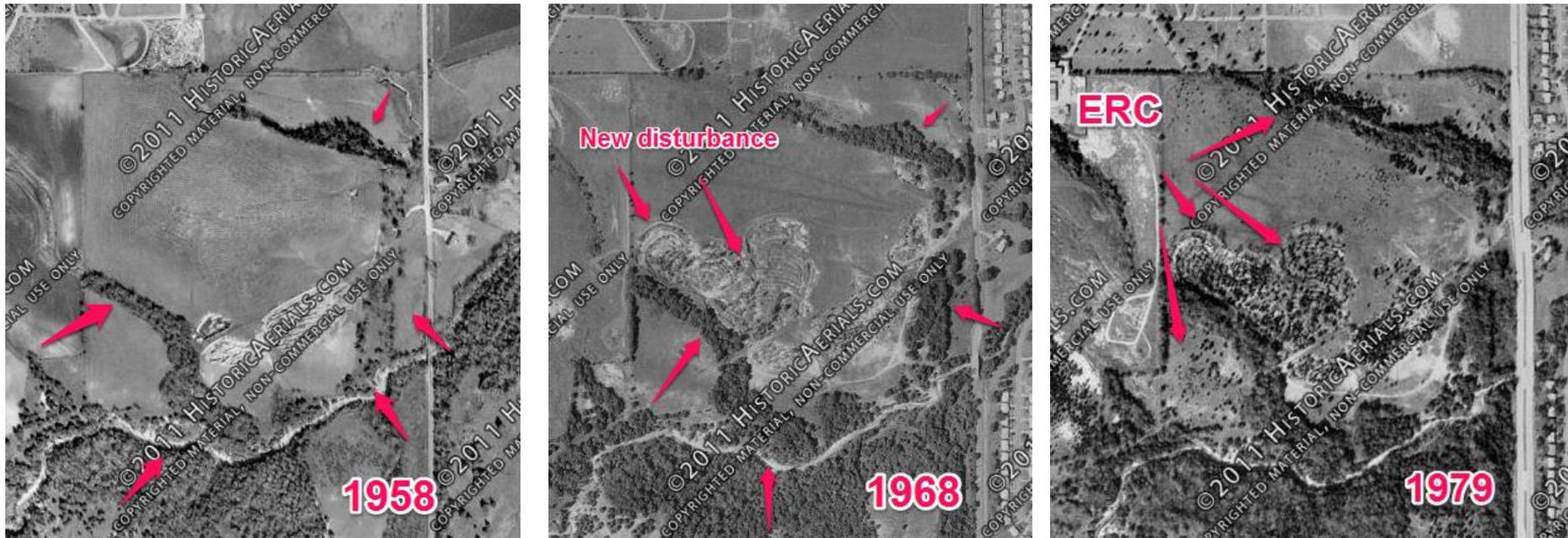
Condition for Eastern Redcedar and Mesquite



Topographic and historical images are available commercially or through educational centers with free viewing online, or available with payment. Soil surveys are also available online.

All images from [Historic Aerials.com](http://HistoricAerials.com)

Conditions for Eastern Redcedar and Mesquite



Visible site changes are seen over two decades, from 1958 to 1979.

All images from [Historic Aerials.com](http://HistoricAerials.com)

Tree expansion from 1989 – 2001.



All images from Historic Aerials.com

DETERMINING VALUE WITH OPTIONAL FOREST STAND DELINEATION



FOREST STAND ADJUSTMENT

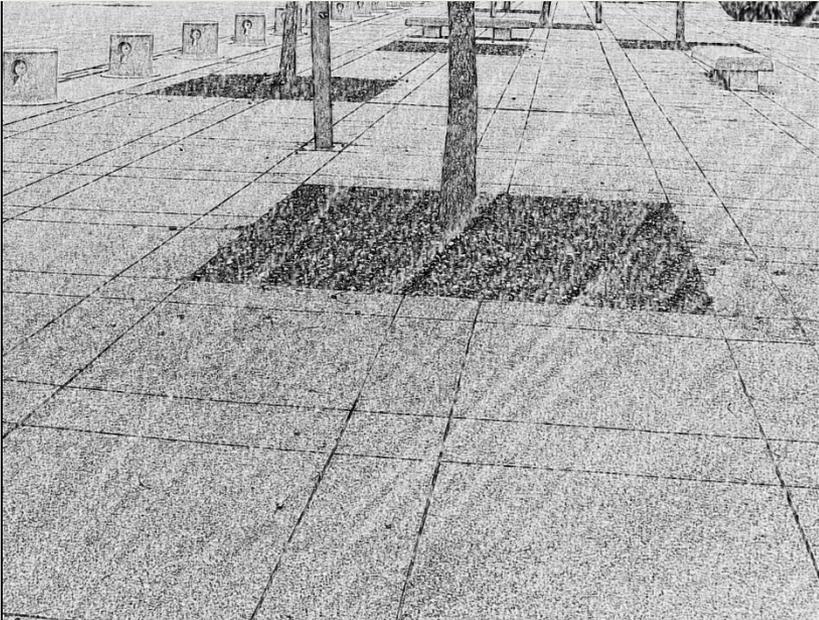
- Based on imagery, the site appears to have an 'age class' of 20-40 years.
- Age class –
 - 20-40 years = 20% of value
 - 40-60 years = 40% of value
 - Older, *if authorized* = 80% of value
- The overall rated value of the stand is determined by measuring the square footage of tree canopy of the single species in the development impact area.



Article X Tree Ordinance



Approved Replacement Tree List



APPROVED REPLACEMENT TREES

Current List

SCIENTIFIC NAME	COMMON NAME	SCIENTIFIC NAME	COMMON NAME
<i>Acer barbatum var. Caddo</i>	Caddo Maple	<i>Pinus eldarica</i>	Eldarica, Mondell, or Afghan Pine
<i>Acer grandidentatum</i>	Bigtooth Maple	<i>Pinus nigra</i>	Austrian or Black Pine
<i>Acer buergerianum</i>	Trident Maple	<i>Pinus thunbergii</i>	Japanese Black Pine
<i>Carya illinoensis</i>	Pecan	<i>Pistacia chinensis</i>	Chinese Pistachio
<i>Cercis canadensis</i>	Redbud	<i>Prosopis glandulosa</i>	Mesquite
<i>Chilopsis linearis</i>	Desert Willow	<i>Prunus mexicana</i>	Mexican Plum
<i>Diospyros texana</i>	Texas Persimmon	<i>Quercus buckleyi</i>	Texas Red Oak
<i>Diospyros virginiana</i> [male only]	Common or American Persimmon	<i>Quercus durandii</i>	Durrand Oak
<i>Fraxinus americana</i>	White Ash	<i>Quercus fusiformis</i>	Escarpment Live Oak
<i>Fraxinus texensis</i>	Texas Ash	<i>Quercus macrocarpa</i>	Bur Oak
<i>Gleditsia triacanthos var. inermis</i>	Thornless Honeylocust	<i>Quercus muhlenbergii</i>	Chinkapin Oak
<i>Gymnocladus dioicus</i>	Kentucky Coffeetree	<i>Quercus shumardii</i>	Shumard Oak
<i>Ilex decidua</i>	Possumhaw or Deciduous Holly	<i>Quercus virginiana</i>	Live Oak
<i>Ilex vomitoria</i>	Yaupon Holly	<i>Sapindus drummondii</i>	Western Soapberry
<i>Juglans microcarpa</i>	Texas Black Walnut	<i>Sideroxylon lanuginosum</i>	Chittamwood or Gum Bumelia
<i>Juniperus ashei</i>	Ashe Juniper	<i>Sophora affinis</i>	Eve's Necklace
<i>Juniperus virginiana</i>	Eastern Red Cedar	<i>Taxodium ascendens</i>	Pond Cypress
<i>Lagerstroemia indica</i>	Crepe Myrtle	<i>Taxodium distichum</i>	Bald Cypress
<i>Liquidambar styraciflua</i>	Sweetgum	<i>Ulmus crassifolia</i>	Cedar Elm
<i>Magnolia grandiflora</i>	Southern Magnolia	<i>Ulmus parvifolia</i>	Lacebark Elm
		<i>Viburnum rufidulum</i>	Rusty Blackhaw

Acceptable Plant Materials

Issues and Considerations

- Recommendation to amend the approved tree list in Section 51A-10.134.
- Recommendation to authorize list under administration of the director and to be placed for reference in the manual.
- The tree list is a recommended list of trees for most required landscape installation, but mandatory for required tree installation on single family and duplex uses.

Approved Replacement Tree List

Proposed (not final)

Large

<u>Bur oak</u>	UFAC/DWU
<u>Chinkapin oak</u>	UFAC/DWU
<u>Live Oak</u>	UFAC/DWU
<u>Shumard red oak</u>	UFAC/DWU
<u>Pecan</u>	UFAC/DWU
<u>Baldcypress</u>	UFAC
<u>Cedar elm</u>	UFAC/DWU
<u>White ash</u>	UFAC
Post oak	UFAC
American elm	UFAC

Medium

<u>Trident maple</u>	UFAC
<u>Bigtooth maple</u>	UFAC
<u>Common persimmon (male)</u>	UFAC/DWU
<u>Texas ash</u>	UFAC
<u>Thornless honeylocust</u>	UFAC
<u>Kentucky coffeetree</u>	UFAC
<u>Eastern redcedar</u>	UFAC/DWU
<u>Sweetgum</u>	UFAC
<u>Southern magnolia</u>	UFAC
<u>Eldarica, Mondell, Afghan pine</u>	UFAC/DWU
<u>Austrian or Black pine</u>	UFAC
<u>Japanese black pine</u>	UFAC/DWU
<u>Chinese pistache</u>	UFAC
<u>Mesquite</u>	UFAC/DWU
<u>Texas red oak</u>	UFAC/DWU
<u>Durrand oak</u>	UFAC/DWU
<u>Western soapberry</u>	UFAC/DWU
<u>Chittamwood, or Gum bumelia</u>	UFAC
<u>Lacebark elm</u>	UFAC/DWU
<u>Pond cypress</u>	UFAC
<u>Escarpment live oak</u>	UFAC/DWU
<u>Ashe juniper</u>	UFAC
<u>Caddo maple</u>	UFAC/DWU
Arizona cypress	UFAC/DWU
Ginkgo	UFAC
Texas pistache	UFAC
Carolina cherry laurel	UFAC
Lacey oak	UFAC/DWU
Blackjack oak	UFAC
Vasey oak	UFAC
Bigelow oak	UFAC/DWU
Winged elm	UFAC

Small

<u>Desert willow</u>	UFAC/DWU
<u>Texas persimmon</u>	UFAC/DWU
<u>Possumhaw or Deciduous holly</u>	UFAC/DWU
<u>Yaupon holly</u>	UFAC/DWU
<u>Texas black walnut</u>	UFAC
<u>Crepe myrtle</u>	UFAC/DWU
<u>Mexican plum</u>	UFAC/DWU
<u>Rusty blackhaw</u>	UFAC/DWU
<u>Eve's necklace</u>	UFAC/DWU
<u>Eastern redbud</u>	UFAC/DWU
Catclaw acacia	UFAC
Shantung maple	UFAC/DWU
Texas buckeye	UFAC
Red buckeye	UFAC
Texas redbud	UFAC/DWU
Reverchon hawthorne	UFAC
Green hawthorne	UFAC
Texas hawthorne	UFAC
Goldenball leadtree	UFAC
Saucer magnolia	UFAC
Wildgoose plum	UFAC
Carolina buckthorn	UFAC/DWU
Smooth sumac	UFAC
Prairie-leaf sumac	UFAC/DWU
Texas mountain laurel	UFAC
Mexican buckeye	UFAC/DWU
Vitex	UFAC/DWU
Jujube	UFAC
Wright acacia	DWU
Chitalpa	DWU
Roughleaf dogwood	DWU
Alligator juniper	DWU
Ashe juniper	DWU
Blue point juniper	DWU
Wichita blue juniper	DWU
Wax myrtle	DWU
Mexican redbud	DWU
American smoketree	DWU

Article X current list underlined.

Added since original list:

'October Glory' maple

'Autumn Blaze' maple

Black hickory

'Duraheat' river birch

Proposal:

Remove all ash trees.

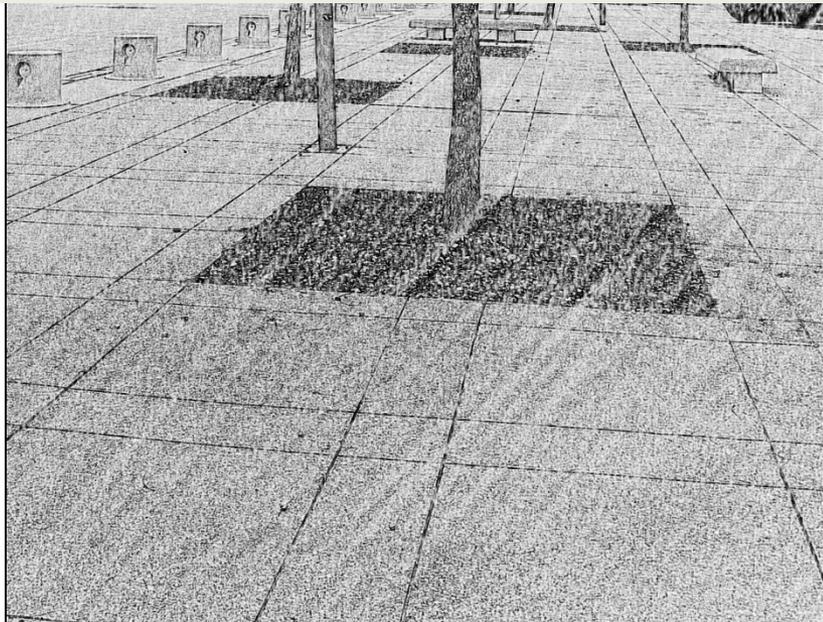
(Threat from Emerald Ash Borer)



Article X Tree Ordinance



Landscape and Tree Manual



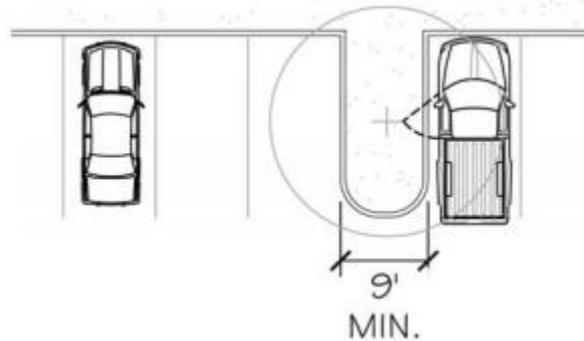
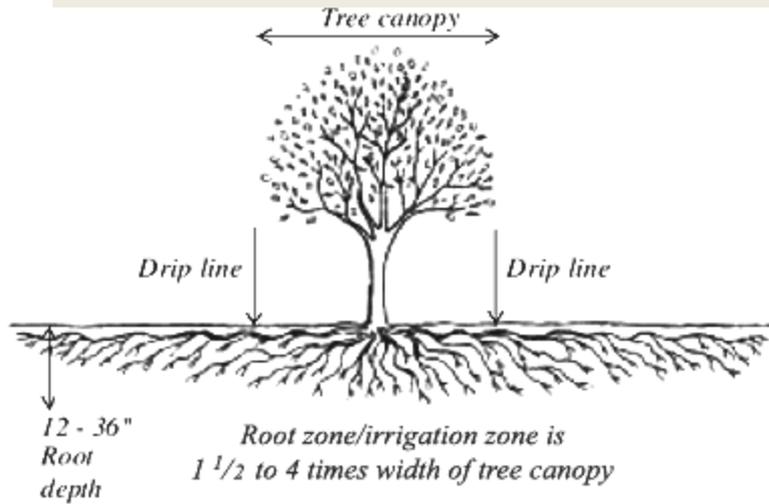
LANDSCAPE AND TREE MANUAL

Under Review

- **Table of Contents**
- **Introduction**
 - Facts about the Dallas urban forest
 - Size
 - Projected outlook
 - Benefits of the urban forest
 - Monetary benefits for urban trees
 - Stormwater capture
 - CO2 sequestration
 - Air purification
 - Energy savings
 - Urban heat island effect
 - Cost of trees
 - Forestry terms
- **Responsibility**
 - Individuals responsible for enforcement
 - Notifying violators
 - Fines
 - Appeal
- **Landscape Plan Review Process**
 - Written description of approval process
 - Flow chart of approval process
 - Checklist of approval process
 - General landscape checklists – Article X and PD's
- **Tree Removal Application Process**
- **Recommended tree list**
 - 10-20-30 rule (TREE DIVERSITY)
 - Tree Chart
 - Shade trees
 - Large
 - Medium
 - Small
 - Legacy trees, Urban trees
 - Shrubs
 - Acceptable for planting near overhead power lines
 - Acceptable for planting near underground water lines
- **Tree Protection Standards**
 - Pre-construction requirements
- **Homeowner's Guide to tree stewardship**
- **Tree Establishment (New planting)**
- **Tree Transplanting (Relocation)**
- **Tree maintenance**
 - Why maintenance is important and cost effective in the long run
 - "Lifespan of urban trees ≈ 8 years"
 - Watering basics – Water Conservation
 - Amount of water needed
 - Different types of irrigation
 - Fertilization
 - Pruning
 - Correct pruning cuts
- **Appendix**

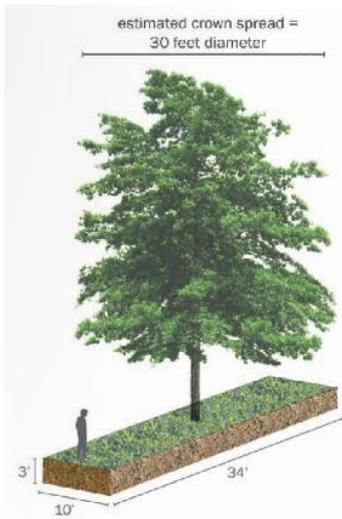
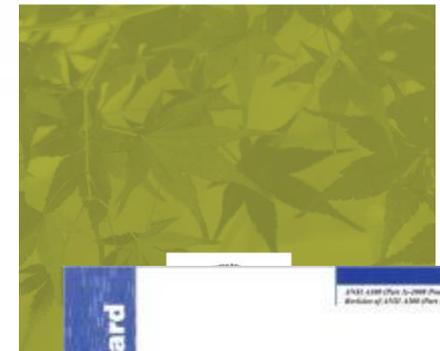
LANDSCAPE AND TREE MANUAL

Under Review

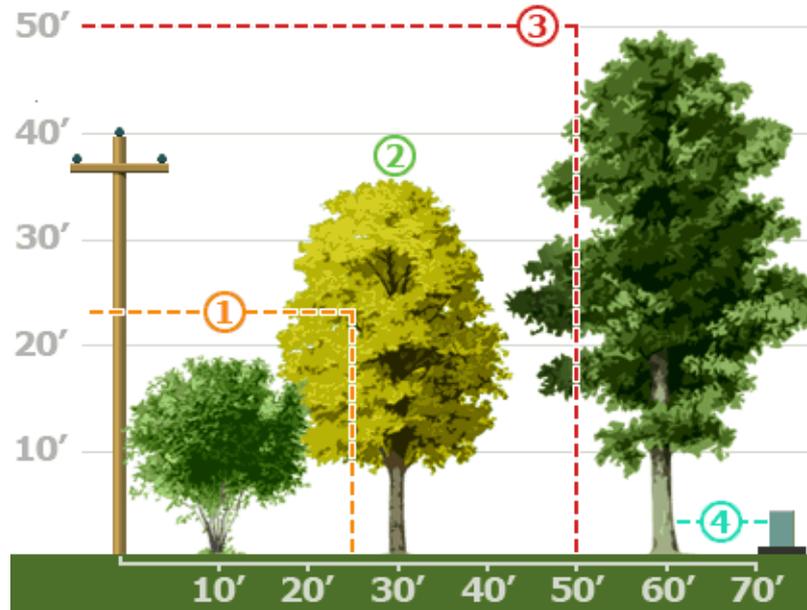


American Standard for Nursery Stock

published by
AmericanHort



Soil Volume = 1000 cubic feet



NEXT STEPS.....

- Irrigation/Water Conservation
- Additional review of miscellaneous ordinance conditions