



# ARTICLE X LANDSCAPE AND TREE PRESERVATION REGULATIONS



## 51A-10.130 Tree Preservation, Removal, and Replacement



Zoning Ordinance Committee – September 3, 2015



# TOPICS FOR DISCUSSION

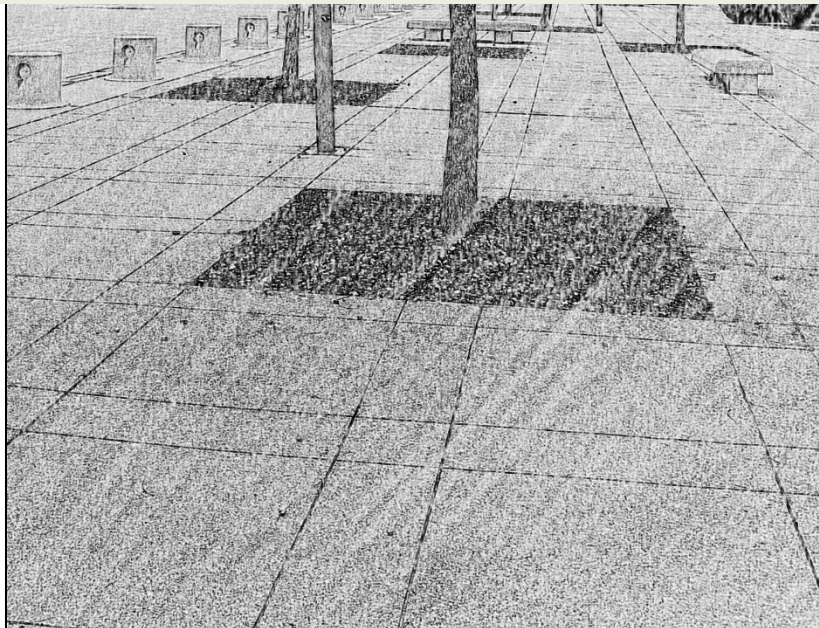
- Additional alternative methods of mitigation
- Tree protection plan
- Timing of tree mitigation
- Tree surveys
- Conservation easements



# **ARTICLE X LANDSCAPE AND TREE PRESERVATION REGULATIONS**



## **Tree Mitigation**



# TREE MITIGATION

## METHODS OF COMPLIANCE

### **Current:**

- Plant trees on the property.
- Donate trees to the Park Department.
- Plant trees within one mile of removal property.
- Contribute to the Reforestation Fund.
- Create a conservation easement.

# TREE MITIGATION

## METHODS OF COMPLIANCE

### **Proposed (in addition to current):**

- Tree Canopy Cover Credit
  - Single family and duplex with goal of >20% tree canopy.
- Sustainable Development Incentives
  - Expanded large/medium tree soil area standard.
  - Canopy coverage goals for non-residential.
  - Existing preserved tree canopy credit, especially for significant trees.
  - ‘Legacy’ trees meeting soil volume/condition criteria provide additional credit for mitigation reduction.
  - Encourage iSWM and SITES integration into design.

# TREE MITIGATION

## METHODS OF COMPLIANCE

### Proposed

- **Tree Canopy Cover Credit**
  - Applicable to all Single family and duplex lots
  - Goal of 20% or greater tree canopy per lot

# METHODS OF COMPLIANCE

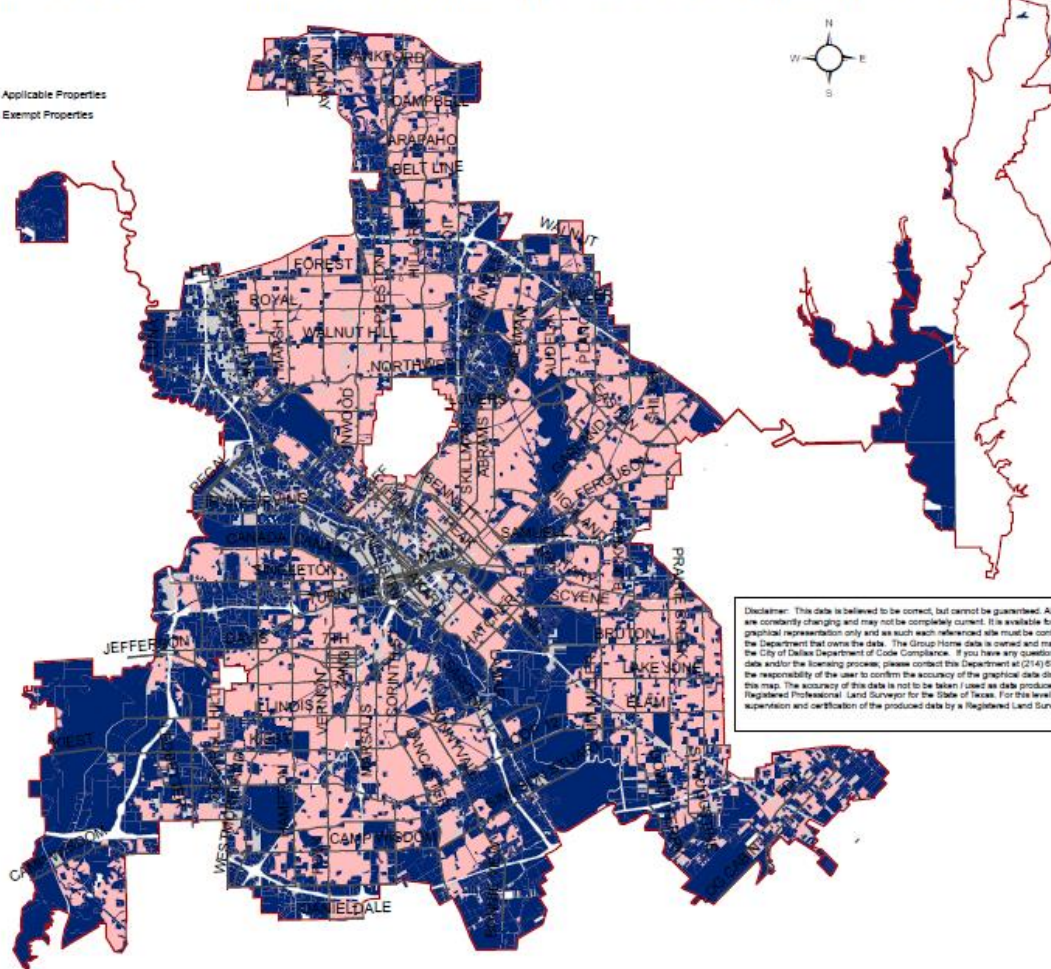
## TREE CANOPY COVER CREDIT

### (Single Family and Duplex lots)

Article X Tree Preservation Regulations - Applicable and Exempt Properties Map

**Legend**

- Dallas City Limit Line
- Article X Tree Preservation Regulations Applicable Properties
- Article X Tree Preservation Regulations Exempt Properties
- Data Not Available



Disclaimer: This data is believed to be correct, but cannot be guaranteed. All data sets are constantly changing and may not be completely current. It is available for use as a graphical representation only and as such each referenced site must be confirmed with the Department that owns the data. The Group Home data is owned and maintained by the City of Dallas Department of Code Compliance. If you have any questions about the data and/or the licensing process, please contact the Department at (214) 670-1872. It is the responsibility of the user to confirm the accuracy of the graphical data displayed on this map. The accuracy of this data is not to be taken if used as data produced by a Registered Professional Land Surveyor for the State of Texas. For this level of detail, representation and certification of the produced data by a Registered Land Surveyor for the

# METHODS OF COMPLIANCE

## TREE CANOPY COVER CREDIT

(Single Family and Duplex lots)

- When tree mitigation is applicable, the owner may receive a reduction of the diameter inch mitigation of removed trees by fully protecting qualified shade trees for preservation of shade tree canopy coverage.
- Protected and healthy large and medium canopy trees in the front yard setback will receive a reduction of up to 2x the current canopy area of the tree.
- Approved 'boundary trees,' including at least 20% of a canopy of a neighboring tree, may be included in the tree canopy coverage percentage of the lot.



# METHODS OF COMPLIANCE

## TREE CANOPY COVER CREDIT

### (Single Family and Duplex lots)

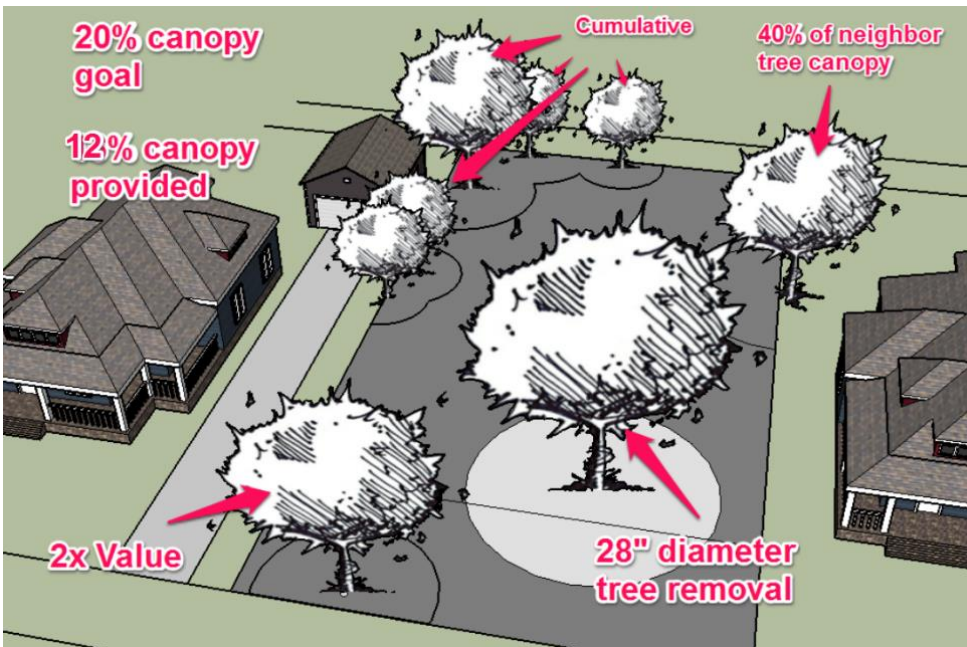
- Boundary tree means a tree growing on a property boundary line between two lots when the trunk exists on each property, or a tree that has 20 percent or more of its critical root zone extending across a property boundary and into an adjacent property.
- The tree canopy goal standard may vary by the residential district.
- Large and medium nursery stock trees applied as landscaping will qualify for their diameter measurement at time of planting, but may be included for 100 square feet of the tree canopy cover credit.
- If the goal canopy coverage is met, additional landscape trees need not be planted.
- Invasive and other non-qualified trees will not be included in the canopy coverage credit. But there is no penalty for not achieving the canopy goal.

# METHODS OF COMPLIANCE

## TREE CANOPY COVER CREDIT

(Single Family and Duplex lots)

### EXAMPLE:



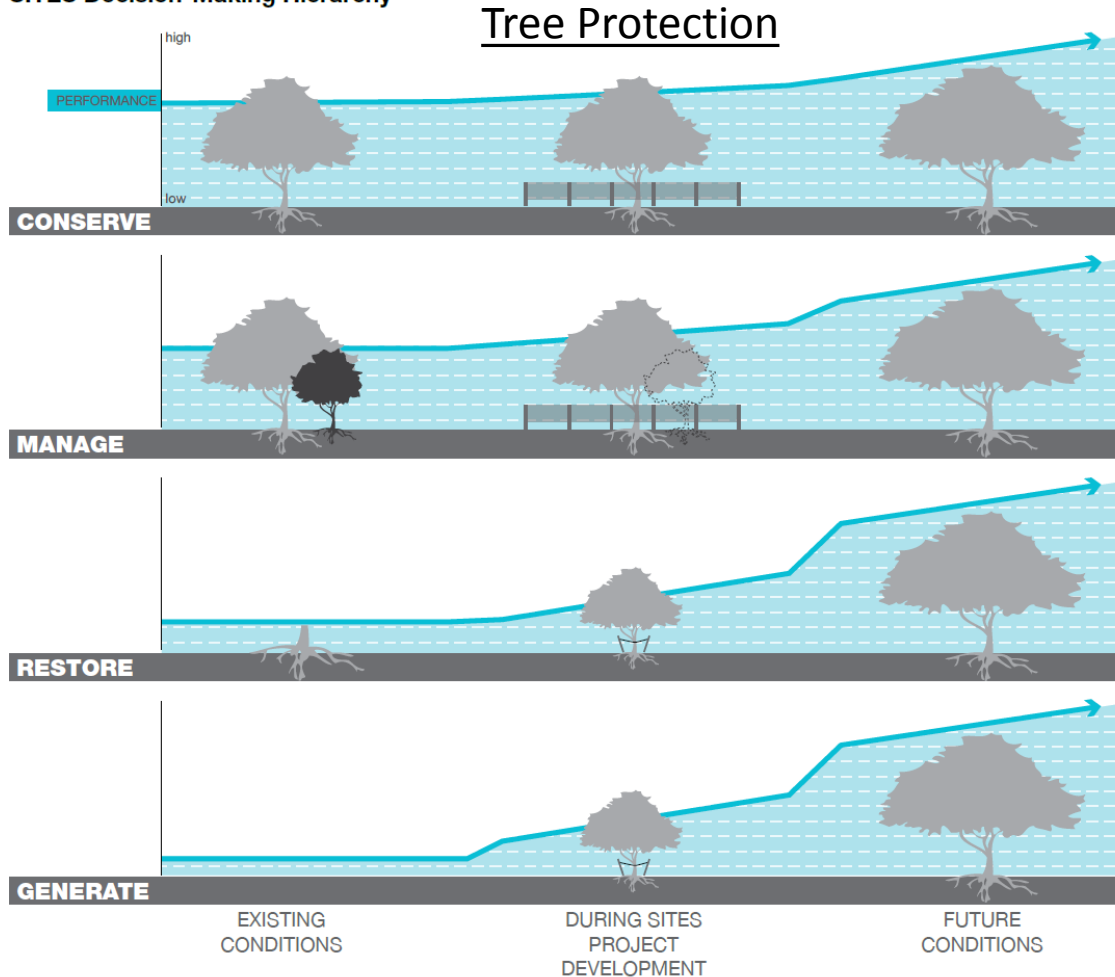
Tree protection requirements are imposed on the property. Mitigation reduction credits require compliance with protection standards.

- 10,000 sf property has a 20% (2,000 sf) tree canopy goal.
- 28" protected tree is removed for construction.
- Retained protected canopy tree in front yard receives 2x canopy area credit added to total.
- Eligible remaining canopy coverage is 1,115 square feet, or 12% applicable tree canopy.
- Property receives 56% reduction on diameter inch mitigation by protecting tree areas on the lot (28-16=12 in. remain to be mitigated).

# METHODS OF COMPLIANCE

## Sustainable Development Incentives

### SITES Decision-Making Hierarchy



The framework for the SITES<sup>®</sup> Rating System is based on the concept of ecosystem services. By aligning land design and development practices with the functions of healthy ecosystems, development projects can contribute to maintaining, supporting, and enhancing natural systems and the essential services they provide.

1. Conserve and manage existing trees for continued community benefit.
2. Establish tree planting conditions for long-term successful growth.

Image: SITES v. 2 Rating System

# METHODS OF COMPLIANCE

## Sustainable Development Incentives

### Proposed:

- Applicable to all **non-residential** development 2 acres and larger.
- Prerequisite conditions apply for the on-site mitigation reductions.

# METHODS OF COMPLIANCE

## Sustainable Development Incentives

- The existing tree canopy coverage projected over the development impact area of the property may be counted toward a reduction of the overall required diameter inch tree mitigation.
- As is currently the standard, nursery stock trees added to the property for landscape purposes will be counted by the diameter inches planted per tree.
- Of these nursery stock trees, those large and medium canopy trees which are planted and conform to the planting specifications for the SDI, will be measured for their projected (mature) tree canopy. The square footage of each tree canopy will be included, along with existing *qualified* tree canopy in the development impact area, for reduction credits. Utility and structure obstructions will disqualify.
- There is no penalty for not fully achieving the tree canopy goal by which the tree canopy coverage is measured. We are establishing goals by creating the *best possible growing conditions with the use.*

# METHODS OF COMPLIANCE

## Sustainable Development Incentives

### Prerequisite Conditions:

- A pre-development forest conservation assessment is required at pre-design.
- Full compliance with tree protection standards and BMP's.
- Tree professional must be consulted throughout development with periodic inspections.
- Sustainable construction practices communicated and verified.
- Soil management plan for site with emphasis on soil conditions for legacy trees.
- Restore soils disturbed during construction where applicable.
- The development impact area may not encroach in a floodplain area, escarpment zone, wetland or within 50 feet of a streambank.
- Utility planning and locations must be directed for least impact to preserved trees and sensitive land areas.
- Manage precipitation on site.
- Water conservation irrigation standards must be designed and applied.
- Sustainable site maintenance with schedule and implementation plan.

# METHODS OF COMPLIANCE

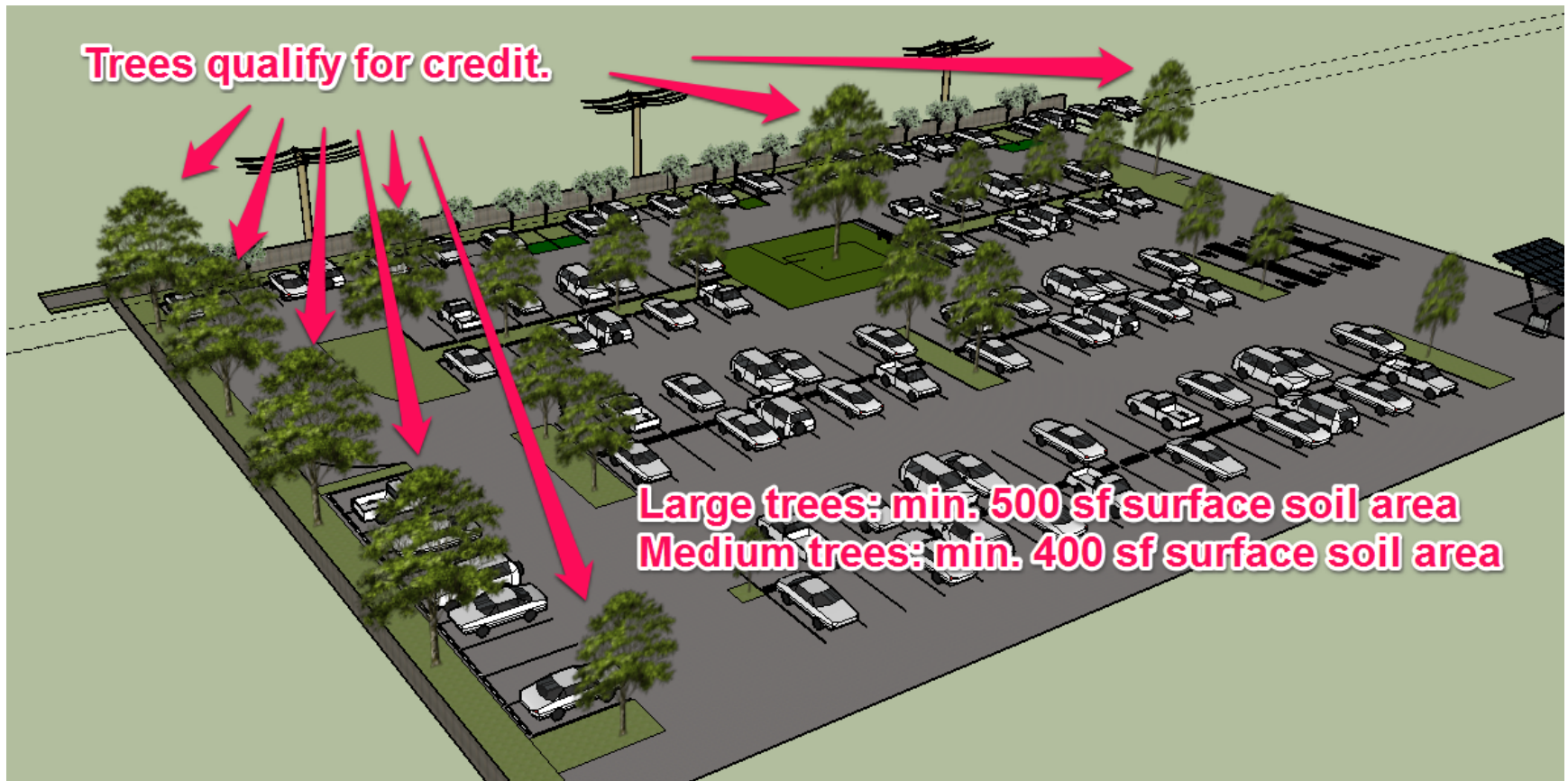
## SUSTAINABLE DEVELOPMENT INCENTIVES

### Requirements:

- **Large trees** planted in a surface soil area of at least 500 square feet (or 1500 cubic feet) dedicated to the tree may qualify. The area is increased to a minimum of 750 square feet in shallow soils less than 2' depth.
- **Medium trees** planted in a surface soil area of at least 400 square feet (or 1200 cubic feet) dedicated to the tree may qualify. The area is increased to a minimum of 600 square feet in shallow soils less than 2' depth.
- 'Legacy' trees are projected to achieve full maturity based on the available soil volume and conditions *at time of planting*. The tree canopy coverage credit is based on a *future* tree canopy coverage projected over an extended time. Investment of tree mitigation on site is established in the risk and projected gains of growing the large tree to maturity in the restored planting environment for future property and community benefit.
- The cumulative tree canopy coverage of existing trees and nursery stock legacy trees are combined to determine the current tree canopy and projected future canopy for the property. The current tree replacement and mitigation requirements are reduced by adapting greater portions of the property to the enhanced landscape areas for tree growth.

# SUSTAINABLE DEVELOPMENT INCENTIVES

## Example



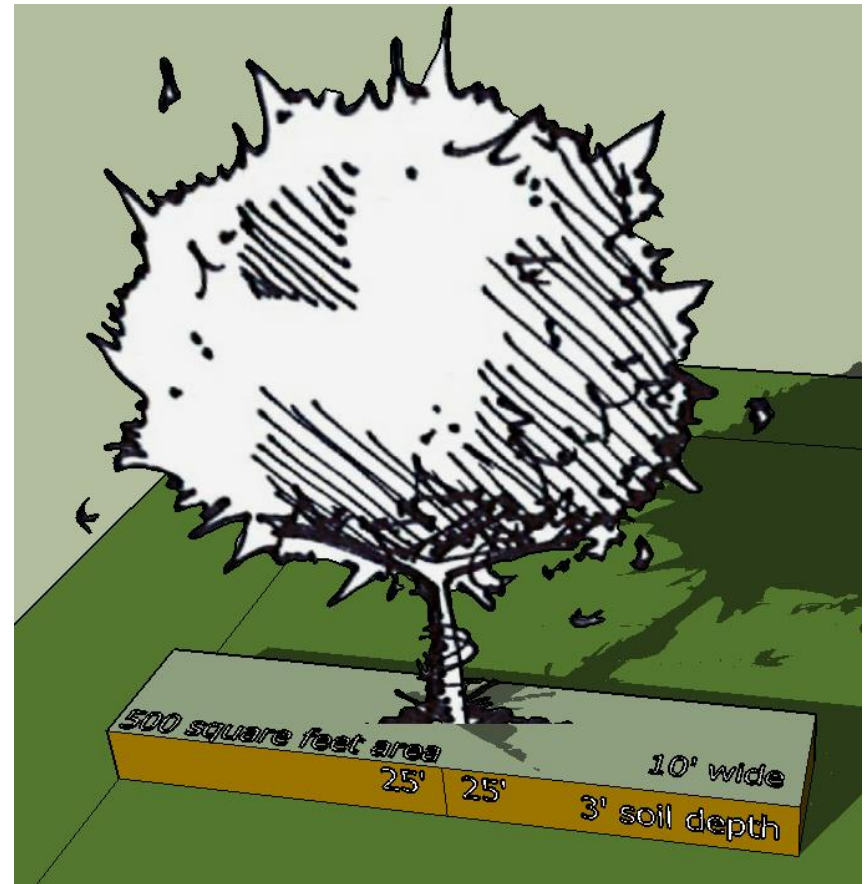
Soil volume, surface area and future canopy clearance standards must be achievable for all planted legacy trees. Existing trees must meet soil retention requirements. The prerequisite SDI conditions must be applied and completed with inspection.



# SUSTAINABLE DEVELOPMENT INCENTIVES

## Tree measurement planting to maturity

- **Large trees** must be planted in a minimum 500 s.f. soil area (1500 c.f. @ 3' soil depth).
- Credit: 1200 s.f. canopy
- **Medium trees** must be planted in a minimum 400 s.f. soil area (1200 c.f. @ 3' soil depth).
- Credit: 750 s.f. canopy



# SUSTAINABLE DEVELOPMENT INCENTIVES


## Additional Provisions

- Developments able to demonstrate compliance with **SITES (Sustainable Sites Initiative) Certified** or greater may achieve additional credits based on the score relative to PLATINUM (135 points).
- Developments which apply **iSWM** standards for low impact development may achieve additional credits.
- The credits applied for these systems are applied through the tree canopy preservation incentives by increasing the canopy ratio credit per tree.

# SUSTAINABLE DEVELOPMENT INCENTIVES

## Calculating Mitigation

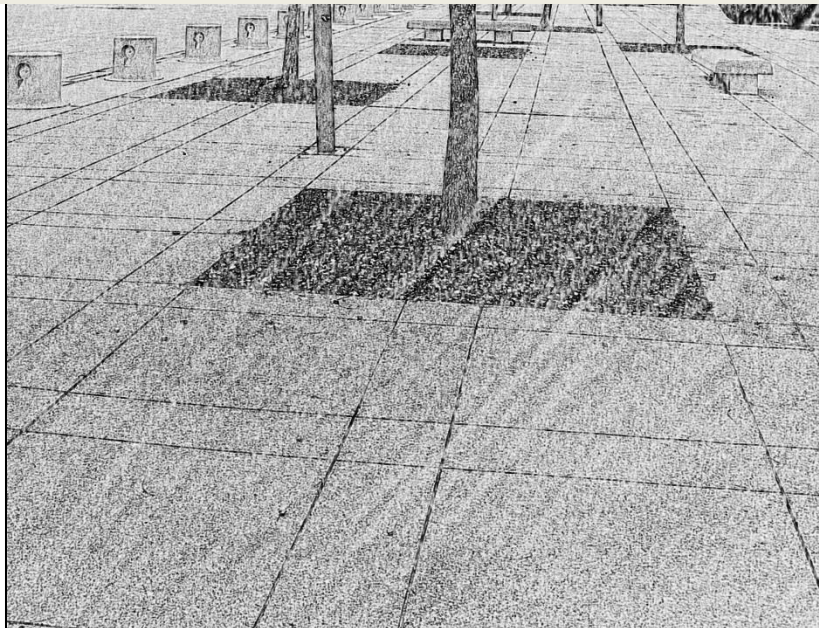
- Prerequisites – no score.
- Existing tree canopy preservation
  - Square feet of canopy/square feet of development impact area = initial tree canopy coverage (%)
- Legacy tree planting (future canopy projection based on enhanced planting areas).
  - Square feet of projected canopy/square feet of development impact area = added sf per tree to total
- SITES Certified or greater
  - OPTION: % of SITES score/135 = % of canopy square feet increase per legacy tree on the property. Also LA design option.
- iSWM minimum conditions, if not required.
  - OPTION: Scoring TBD. Also LA design option.



# Article X Tree Ordinance



## Tree Protection Plan



# TREE PROTECTION PLAN

## Current:

### Applies to ALL disturbances with retained trees

Where a property owner plans to retain protected trees on a site to be developed or otherwise disturbed in a manner that may affect protected trees, the following requirements must be met:

- (a) **Tree protection plan**. A tree protection plan submitted to the building official must include the following:
  - (1) A site plan drawn to scale, indicating the location of land disturbance, clearing, grading, trenching, tree protection zones, proposed underground utilities, staging areas for parking, material storage, concrete washout, and debris burn and burial holes where these areas might affect tree protection, and areas where soil compaction is likely to occur in a tree protection zone due to traffic or materials storage.
  - (2) A complete tree survey in accordance with the requirements set forth in Section 51A-10.132.
  - (3) Detailed drawings of tree protection measures that will be used during development.

# TREE PROTECTION MEASURES

## Current (cont.)

(A) **Tree protection fencing.** Tree protection fences must be a minimum of four feet high, constructed with adequate, durable material (e.g. orange plastic construction fencing) approved by the building official, and located at the drip line or the edge of the critical root zone, whichever is farthest from the trunk, unless the building official determines that a fence line closer to the trunk will not be likely to result in damage to the tree. For purposes of this subsection, "drip line" means a vertical line that runs from the outermost portion of the crown of a tree to the ground.

(B) **Erosion control fencing or screening.** All protected trees or stands of trees, and tree protection zones must be protected from the sedimentation of erosion material. Silt screening must be placed along the outer uphill edge of tree protection zones.

(C) **Tree protection signs.**

(D) **Transplanting specifications.**

(E) **Tree wells and aeration systems.**

(F) **Staking specifications.**

# TREE PROTECTION PLAN

## Proposed:


- Clarify in ordinance the timing requirements for submittal of tree protection plans prior to construction.
- Improve minimum specifications for required tree protections and reference supplemental information in a landscape/tree manual. References and amendments will be inclusive of the current ANSI A300 Standards for Tree Care Operations and BMP's for Managing Trees During Construction. This will include periodic watering of trees in dry periods.
- Designate specific tree protection standards for residential construction sites to address how best to comply to meet performance standards to qualify for the tree canopy credits for preserved trees.

# TREE PROTECTION PLAN

## Proposed (cont.):

- Clarify the conditions of how and when a tree on a construction site, or with other disturbance, may be considered irreparably damaged by the building official. Factors for consideration include, but are not limited to, an evaluation of site impact of construction, and a Level 1 tree assessment of resulting tree conditions.
- Specify minimum standards for tree protection during demolition activities and the transition to building construction.

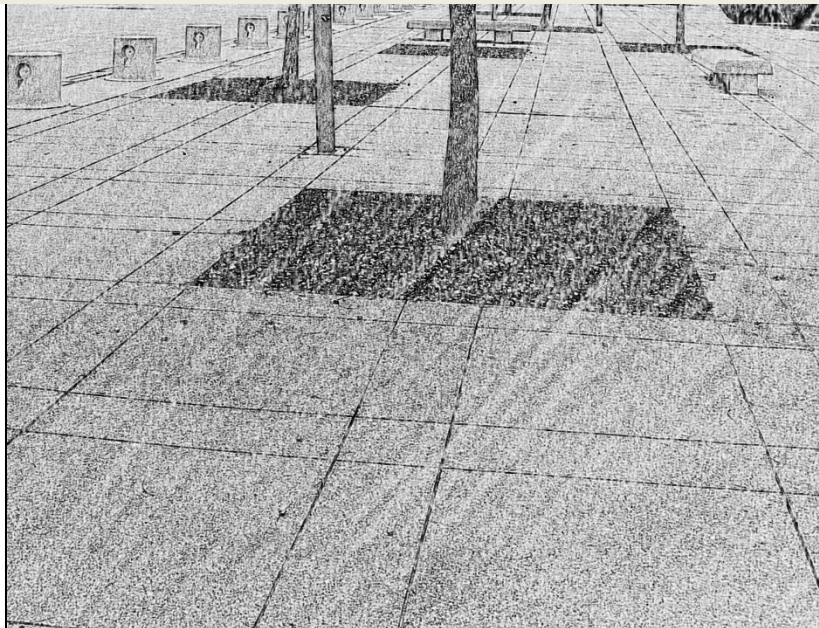




# Article X Tree Ordinance



**Timing of tree mitigation**



# TIMING OF TREE MITIGATION

## Current:

### (5) Timing.

(A) Except as otherwise provided in Subparagraphs (B) and (C), **all replacement trees must be planted within 30 days after the removal or serious injury of the protected trees.**

(B) If the property owner provides the building official with an affidavit that all replacement trees will be planted **within six months**, the building official may permit the property owner to plant the replacement trees during the six-month period.

# TIMING OF TREE MITIGATION

## Current:

(C) If the property owner provides the building official with a **performance bond or a letter of credit** in the amount of the total cost of purchasing and planting replacement trees, the building official may permit the property owner **up to 18 months to plant the replacement trees**, with the following restrictions:

(i) for single family or multifamily developments, at least 50 percent of the total caliper of replacement trees must be planted before 65 percent of the development has received a final building inspection or a certificate of occupancy, and all replacement trees must be planted prior to the completion of the development; and

(ii) in all other cases, the replacement trees must be planted prior to the issuance of a certificate of occupancy.

(D) **A replacement tree that dies within two years of the date it was planted must be replaced by another replacement tree that complies with this section.**

# TIMING OF TREE MITIGATION

## **Current Practice:**

- Where tree removal coincides with building permits, properties under development are provided the time for the completion of the project in which to complete all tree replacement, and mitigation, with the completion of the required landscaping of the Landscape Division.
- A final certificate of occupancy, or a final certificate of completion for residential properties, is currently withheld until landscaping and tree mitigation is completed.

# TIMING OF TREE MITIGATION

## Proposed:

- Provide that owner responsibilities for approved tree removal permits may be transferred and tied to a building permit for the property if the building permit submittal is completed no later than six months after issue of the tree removal application. If longer, all mitigation from that application becomes due unless extended time is authorized by the Board of Adjustment.
- On **residential subdivisions**, a comprehensive tree replacement plan must be completed prior to the issue of any building permit for residential construction. The tree replacement plan is based on determining MINIMUM calculations for landscape requirements for the residential lots and a *detailed* landscape plan identifying future plantings in common areas. Any additional tree mitigation above what is presented on the landscape/mitigation plan to meet landscape requirements on-site is required to be completed before permits for residential construction are issued.

# TIMING OF TREE MITIGATION


## Proposed:

- If additional time for compliance is requested, a performance bond or letter of credit must be submitted and retained for the appropriate time period from the date of the tree removal application, or a Board of Adjustment approval for the time extension is required. A time extension for mitigation completion cannot exceed 36 months from the date of tree removal application without approval of the Board of Adjustment. All mitigation must be completed by the end of the provided extended time period.

# TIMING OF TREE MITIGATION

## Proposed:

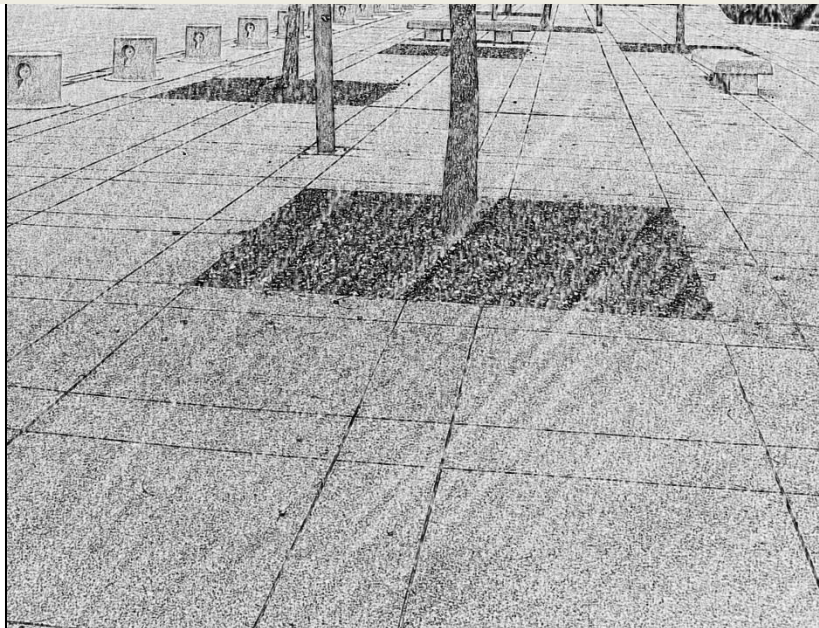
- Tree replacement with individual tree removal permits (without an additional building permit) must be completed within 30 days of issue of the permit. A time extension of no longer than 6 months from the issue date will be allowed with an affidavit by the owner.
- A replacement tree that dies within three ~~two~~ years of the date it was planted must be replaced by another replacement tree, except that 'legacy' trees (in Sustainable Development Incentives) that die at any time must be replaced by another replacement tree within 30 days of owner's notification of its loss.



# Article X Tree Ordinance



## Tree Surveys





# TREE SURVEYS

## Current:

- A tree survey shows the location, caliper, and name (both common and scientific) of all trees on the lot or tract, or a 'reasonably accurate' estimate of the total caliper inches of protected trees.
- The survey does not have to be prepared by a registered surveyor, architect, or landscape architect.
- Trees not proposed for removal or serious injury, or located within 50 feet of proposed construction activity need not be shown on the survey unless the building official determines it would help evaluation of a tree removal application.

# TREE SURVEYS

## **Current process:**

- Tree surveys provide tree stand data for
  - Building permits
  - Tree removal applications
  - Conservation easement review
  - Floodplain fill permit review
  - Escarpment area review
  - Planned Development review with site analysis
  - Plat review (if development is proposed)
  - Public property street or utility project review
  - Other site disturbances that may cause removal or injury of a tree

# TREE SURVEYS

## Proposed:

- Tree surveys are required for all applicable residential demolition and construction applications.
- Tree surveys are required for all properties where a disturbance will apply (or may be reduced to the development impact area) and provided before a building permit will be issued.
- Where applicable, a forest stand delineation may be provided for areas inside or outside of the development impact area to confirm a separate calculation based on ecosystem services for tree canopy area to remain undisturbed.

# TREE SURVEYS

## Proposed:

### Definitions:

- **Development Impact Area** – for Article X purposes, the area of development as defined by a development plan or site plan and being the limits of construction.
- **Forest Stand Delineation** – a forest assessment to identify and measure tree canopy coverage, forest health, plant species composition, animal habitat, identification of significant or historic trees, and show locations of significant natural features in the area, including floodplain, wetlands, and escarpment, or other information determined relevant for assessing the forest area.

# TREE SURVEYS

## Forest Stand Delineation


Captures more than tree survey data and is important in measuring tree canopy coverage.

- May be completed on a development property in locations not included in the development impact area.
- Applicable to calculating the forest canopy coverage in square feet for when trees have been removed without authorization from properties without a current tree survey.
- Using the most recent aerial imagery available for the property prior to tree removal, measurements of the tree canopy area can be made to determine the ratio of square footage of tree canopy over the property that has been removed.

# TREE SURVEYS

The Forest Stand Delineation Plan will be used to:

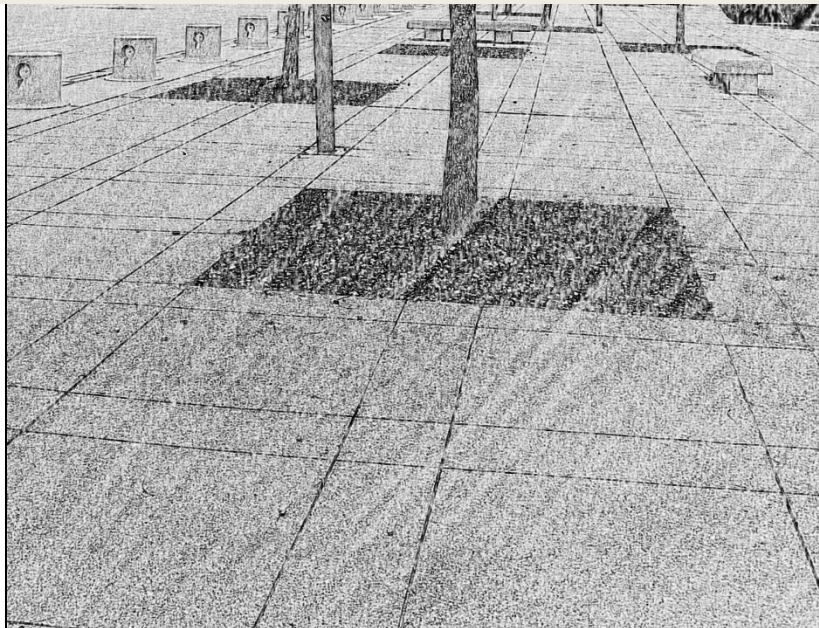
- Calculate unauthorized tree removal to apply mitigation costs
- Calculate tree canopy credit for residential mitigation
- Calculate tree mitigation credits for Sustainable Development Incentives.



# Article X Tree Ordinance



## Conservation Easements



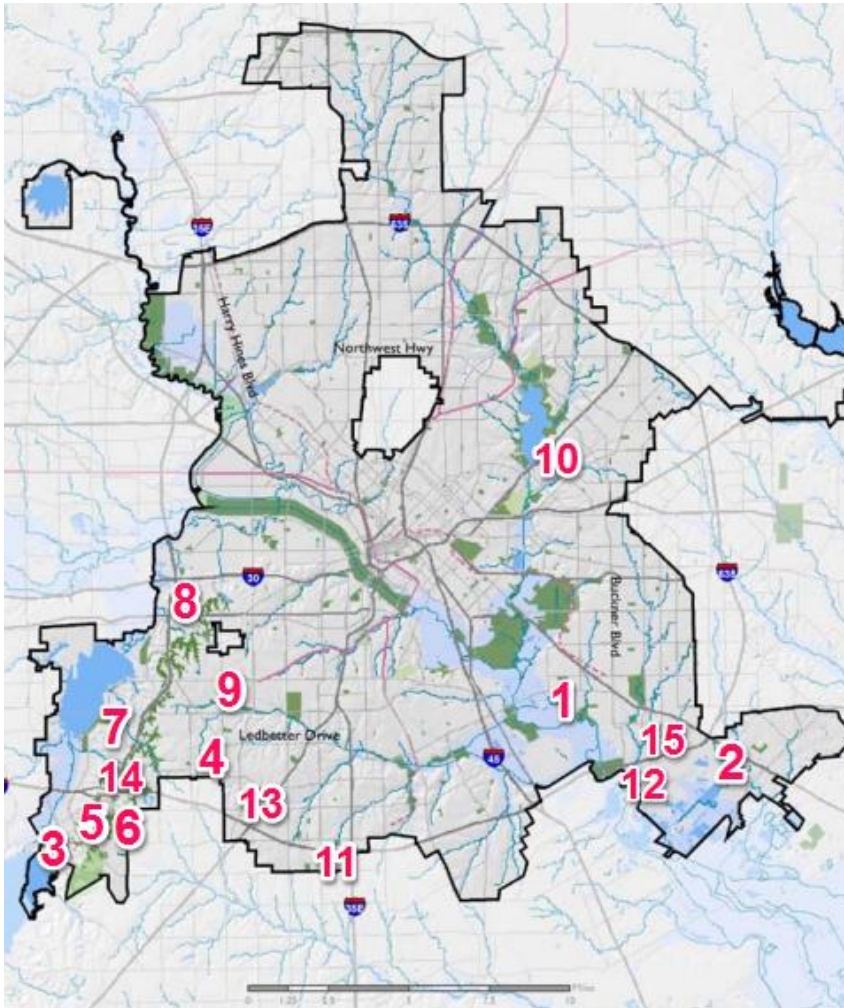
# CONSERVATION EASEMENTS

## **Current:**

- Conservation easements were included in Article X with the 2003 code amendments.
- Fifteen easements now exist across the city under private ownership and maintenance, ranging from 1.2 acres to 110 acres.



# CONSERVATION EASEMENTS



1	Murdeaux	16.17 acres	2004
2	CMC South Oak	3.4044 / 0.97 a.	2004
3	Mountain Ridge Estates	2.92 acres	2005
4	Paraiso Escondido CUD	2.952 acres	2005
5	Forest View #1	6.0299 acres	2005
6	Forest View #2	3.8704 acres	2006
7	Capella Park	7.176 /32.898 a.	2006
8	DISD Arcadia Park	3.896 acres	2008
9	JNR Development	3.833 acres	2008
10	Ash Creek/Casa Linda	1.7894 acres	2009
11	Glendale Park CJW	1.193 acres	2009
12	Dowdy Ferry (Timbercreek)	22.1 acres	2010
13	Concord Church	6.250 acres	2013
14	Courtland Farms	106.32 acres	2014
15	Sandyland	1.311 acres	2015

223.08 acres total

# CONSERVATION EASEMENTS

## Current:

- The city manager may accept easements to ‘conserve trees and other natural features’ if:
  - Approval as to form by the city attorney
  - Determination the area is suitable for conservation purposes by the building official
- A nonprofit association may monitor and maintain the property.
- A tree survey is required.
- A preservation strategy is required.
- The easement must be wholly or partially in the City of Dallas and extending no more than 5 miles from the city limit.

# CONSERVATION EASEMENTS

Considerations Building Official takes into account when determining if suitable:

- Likelihood the proposed easement area would preserve vegetation on a parcel otherwise attractive for development
- Overall health and condition of the trees on the easement property
- Suitability of the area as a wildlife habitat
- Other unique features worthy of preservation, e.g. water channels, rock formation, topography, or rare herbaceous or woody plant species.

# CONSERVATION EASEMENTS

## Current:

- The conservation easement area must contain protected trees with a combined caliper equal to or exceeding the caliper for which replacement tree credit is being requested.
- In addition, one of the following conditions must apply:

# CONSERVATION EASEMENTS

## Current:

- If the conservation easement area is **25 percent or less than the area of the tree removal property**, the responsible party will get credit for trees in the conservation easement area, on an inch for inch basis, up to a maximum of 50 percent of the total caliper of replacement trees required.
- If the conservation easement area is **more than 25 percent and less than 50 percent of the area of the tree removal property**; the responsible party will get credit for trees in the conservation easement area, on an inch for inch basis, up to a maximum of 65 percent of the total caliper of replacement trees required.
- If the conservation easement **area is 50 percent or more of the area of the tree removal property**, the responsible party will get credit for trees in the conservation easement area, on an inch for inch basis, up to a maximum of 80 percent of the total caliper of replacement trees required.

# CONSERVATION EASEMENTS

The Article X Green Building Task Force recommendation:

- ‘conservation easements should provide credit against tree mitigation costs on a 1-for-1 basis of the caliper inches of the protected trees within the easement.’

# CONSERVATION EASEMENTS

## Proposed:

- Amend the current requirement for the conservation easement area to be a minimum 25% of the size of the development impact area on the tree removal property, **and**
- Retain current protected tree mitigation of 1 inch-for-1 inch basis of protected trees removed, to a maximum of 80% of total caliper of replacement trees required.
- Specify baseline requirements for qualifications based on location to, and protection of, sensitive land areas, ratio of land in floodplain, intensity of invasive species on site, and the forest stand density and composition.
- The building official will determine if the area is suitable for conservation purposes based on analysis of the tree survey, the baseline documents indicating forest conditions, and any other documentation to assist the assessment.

## NEXT STEPS.....

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