Memorandum

CITY OF DALLAS

DATE February 27, 2009

TO Honorable Mayor and Members of the City Council

Thru: Forest E. Turner
Interim Assistant City Manager

SUBJECT March 4, 2009 City Council Agenda
"Roadmap To Tree Planning and Planting in Dallas, TX"

Attached is a copy of the "Roadmap To Tree Planning and Planting in Dallas, TX" briefing which will be presented to the City Council on March 4, 2009 by Janette Monear, Executive Director of the Texas Trees Foundation.

Please contact me at 214-670-4071 if you have any questions.

Paul D. Dyer, Director
Park and Recreation Department

c: Mary K. Suhm, City Manager
Deborah Watkins, City Secretary
Thomas P. Perkins, City Attorney
Craig Kinton, City Auditor
Judge Ray Robinson, Judiciary
Ryan S. Evans, First Assistant City Manager
A. C. Gonzalez, Assistant City Manager
Jill A. Jordan, P. E., Assistant City Manager
Ramon F. Miguez, P. E., Assistant City Manager
Dave Cook, Chief Financial Officer
Helena Stevens-Thompson, Assistant to the City Manager

“Roadmap to Tree Planning and Planting” Dallas, TX

A New Innovative Approach to an Old Problem

Texas Trees Foundation

City Council Briefing

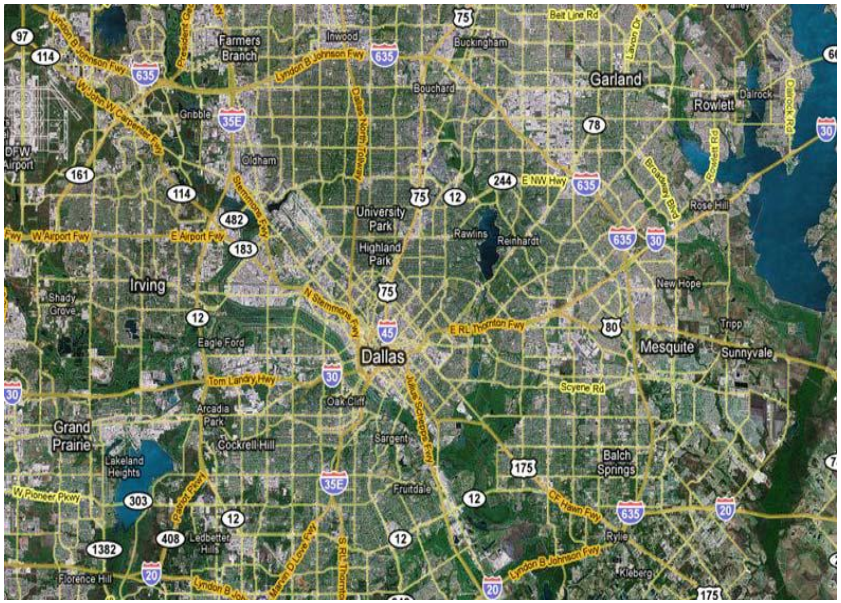
March 4, 2009

Janette Monear, Executive Director
Texas Trees Foundation

Matt Grubisich, Urban Forester
Urban Renewal

Key Focus Area
Culture, Arts & Recreation

Urban Tree Canopy (UTC)



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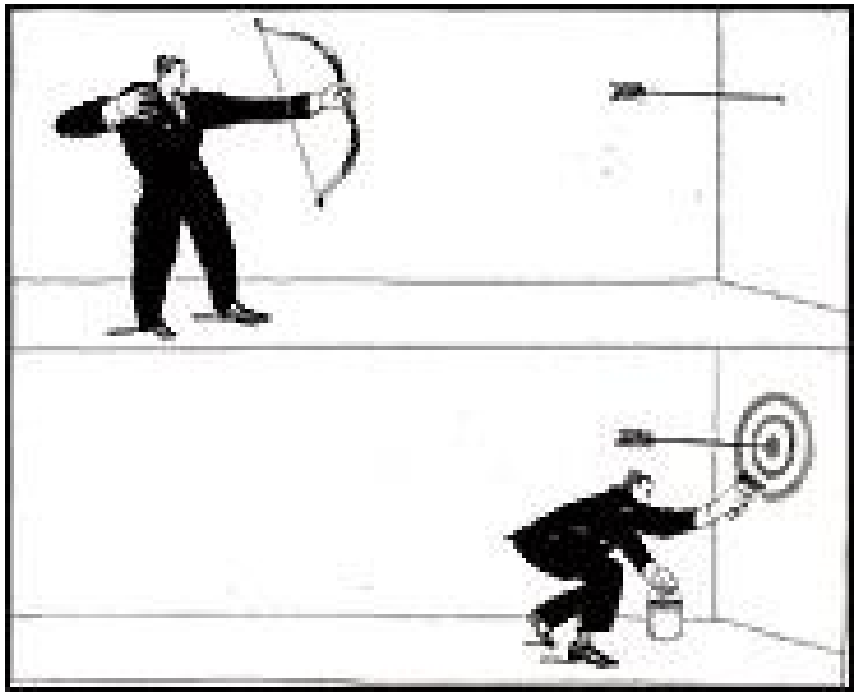
The Need for UTC Modeling



- What is the target?
- Need for high-resolution data and analysis?
- A million trees?
  - Salt Lake County, Denver, Los Angeles, Indianapolis
- Air & Water Quality?
  - NYC, Chesapeake Bay Program (Baltimore, Annapolis, Washington, D.C.)

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A New Direction to Urban Planning in the City of Dallas

1. Partnerships
2. "Roadmap" to Tree Planting
3. Data Sources
4. Outcomes
5. What's Next

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Successful Partnerships is the Key!

- City of Dallas Departments of:
  - Parks and Recreation
  - Office of Environmental Quality
  - GIS
- Texas Forest Service (TFS)
- US Forest Service (USFS)

- Environmental Protection Agency (EPA)
- Houston Advance Research Center (HARC)
- North Central Texas Council of Governments (NCTCG)
- Esurance
- Communities Foundation of Texas
- University of California, Davis (UC Davis)
- Southern Methodist University(SMU)

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Directions for the Roadmap

Step 1:
Where are there no Trees?

Step 2:
Where can we plant Trees?

Step 3:
Where is the ***best*** place to plant the trees?

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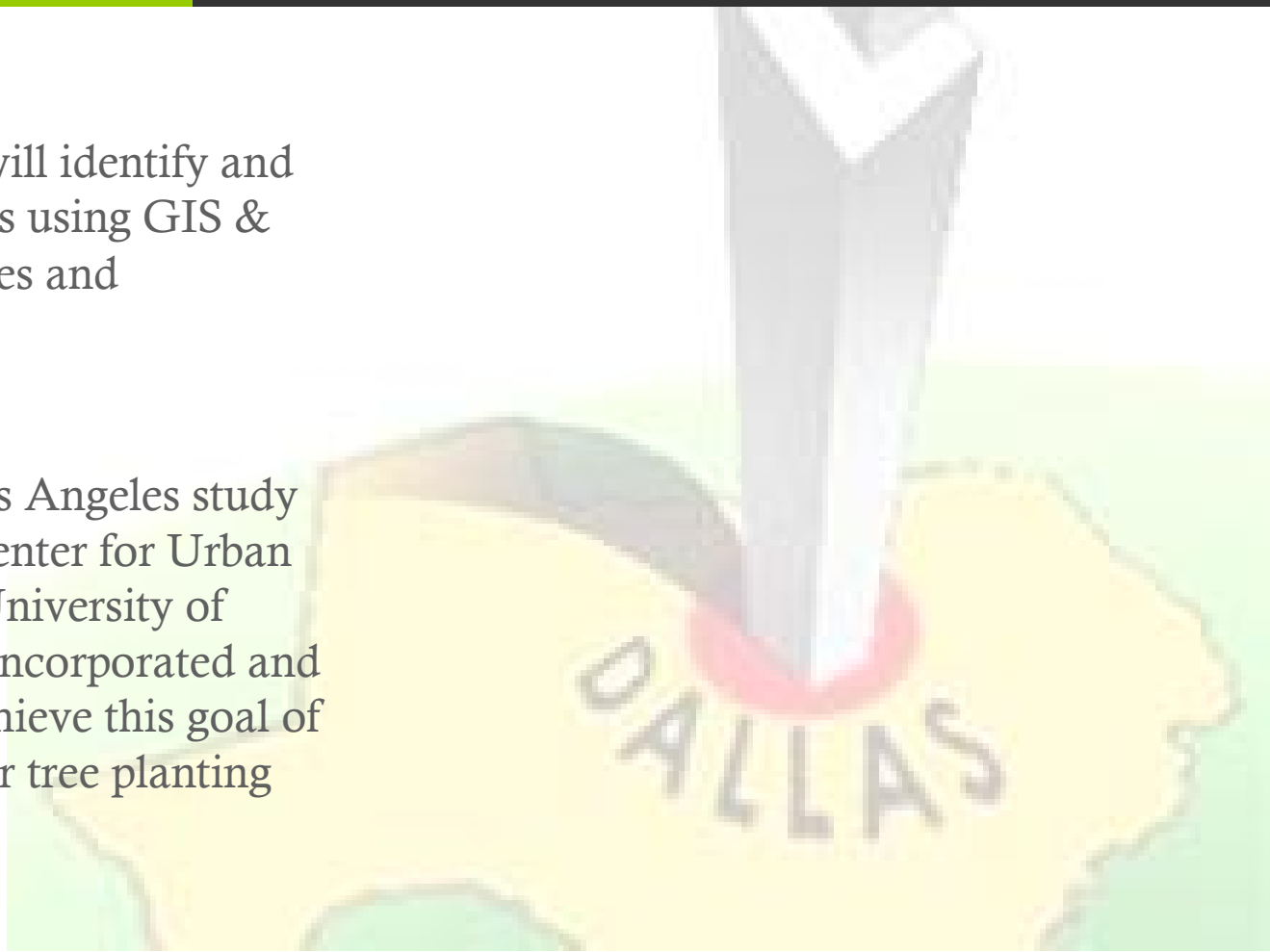
Roadmap to Tree Planting

Goal:
To develop a model that will identify and prioritize tree planting sites using GIS & remote sensing technologies and ***environmental factors*.**

How:
Functionality from the Los Angeles study developed by the USFS Center for Urban Forest Research and the University of California Davis will be incorporated and expanded upon to help achieve this goal of developing a 'roadmap' for tree planting success in Dallas.



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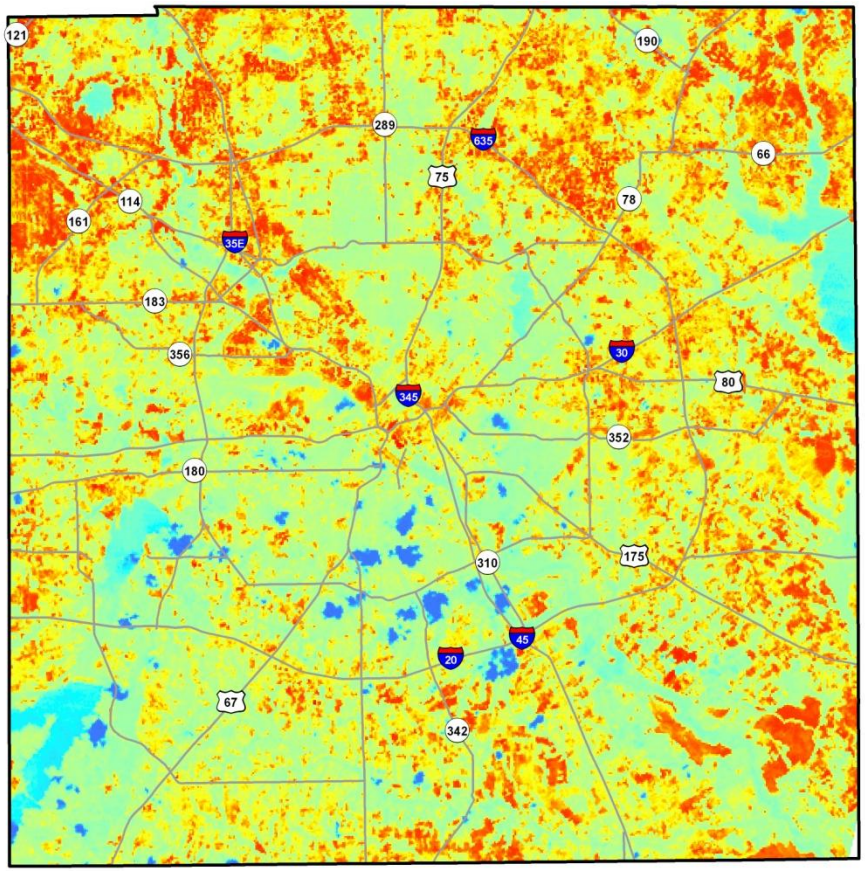
Data Sources

HARC

Hot Spot Data

- City of Dallas Office of Environmental Quality (OEQ)
- Houston Advanced Research Center (HARC)
- Funding through EPA
- Big Piece of the Puzzle!!!



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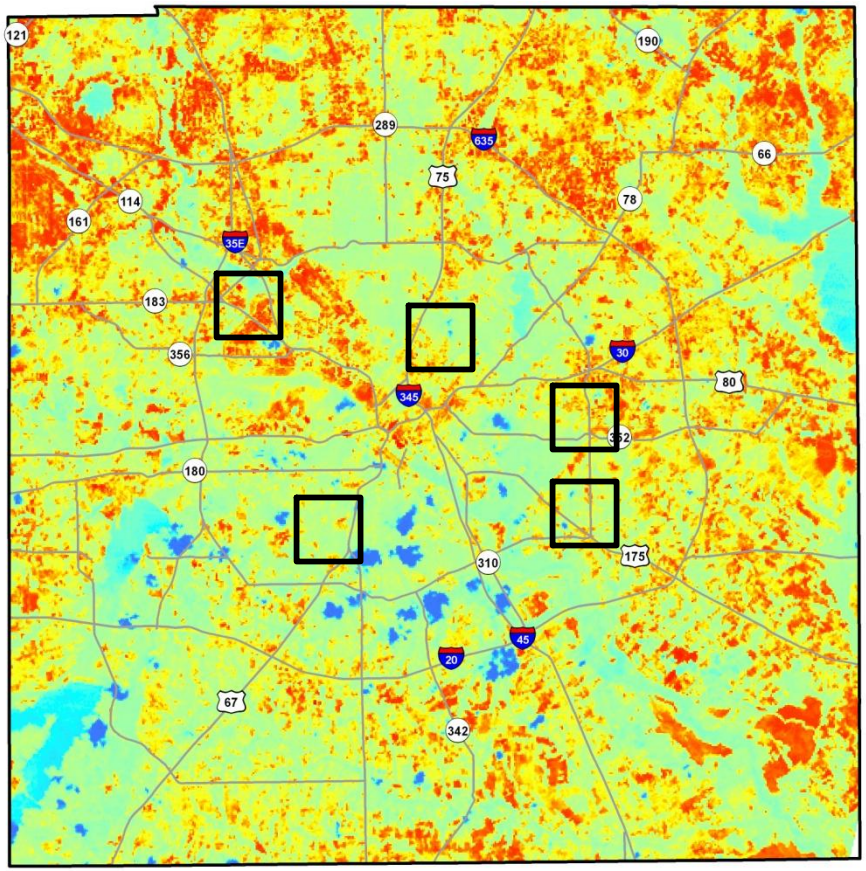
Roadmap to Tree Planting

Phase 1: Sample Sites

1. Too expensive to get initial funding for entire city.

2. Five 1 square mile sample sites where chosen to show the benefits of the 'Roadmap'.

3. Sites chosen based on:
   - Location
   - Land use type
   - Hot spot data



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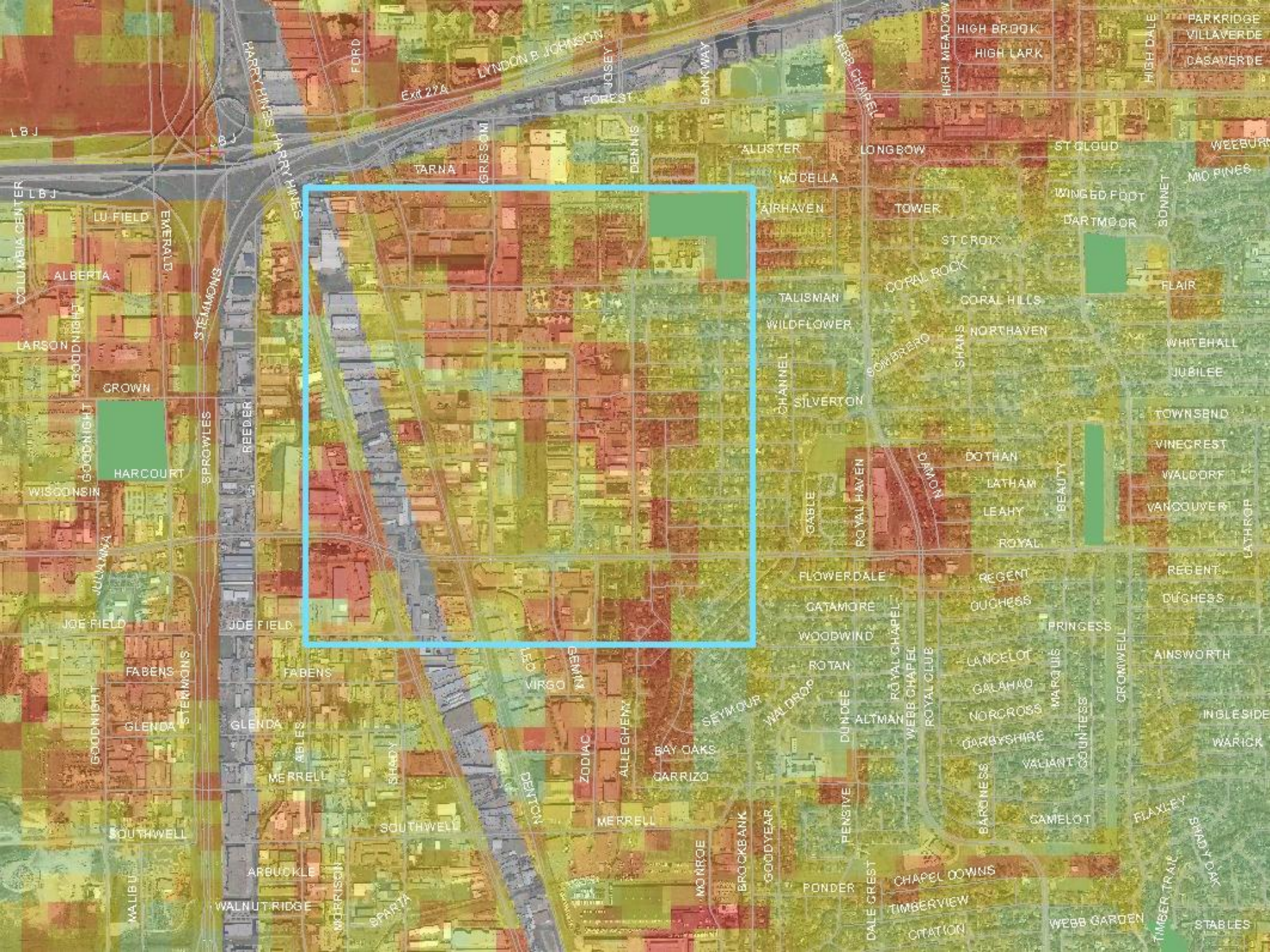
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HIGH MEADOW
HIGH BROOK
HIGH LARK
HIGH DALE
PARKRIDGE
VILLAVERDE
CASAVERDE
COLUMBIA CENTER
LU FIELD
EMERALD
ALBERTA
GOODNIGHT
LARSON
STEMMONS
GROWN
HARCOURT
WISCONSIN
SPROWLES
REEDER
JUANITA
JOE FIELD
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ALLEGHENY
SEYMOUR
WALDROP
BAY OAKS
GARRIZO
MONROE
BROCKBANK
GOODYEAR
PONDER
DALE CREST
CHAPEL DOWNS
TIMBERVIEW
CITATION
WEBB GARDEN
TIMBER TRAIL
STABLES
SHADY OAK
FLAXLEY
INGLESIDE
WARICK
TARNA
GRISSOM
DENNIS
ALLISTER
MODELLA
AIRHAVEN
LONGBOW
ST CLOUD
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MID PINES
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DARTMOOR
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ST CROIX
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FLAIR
TALISMAN
WILDFLOWER
SOMBRERO
SHANE
NORTHAVEN
WHITEHALL
JUBILEE
CHANNEL
SILVERTON
TOWNSEND
VINECREST
DOTHAN
WALDORF
LATHAM
VANCOUVER
LEAHY
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ROYAL
FLOWERDALE
REGENT
DUCHESS
CATAMORE
WOODWIND
PRINCESS
ROTAN
LANCELOT
AINSWORTH
GALAHAD
ROYAL CHAPEL
WEBB CHAPEL
ROYAL CLUB
MARQUIS
CROMWELL
ALTMAN
DUNDEE
NORCROSS
DARBYSHIRE
COUNTESS
VALIANT
BARONESS
PENSIVE
CAMELOT

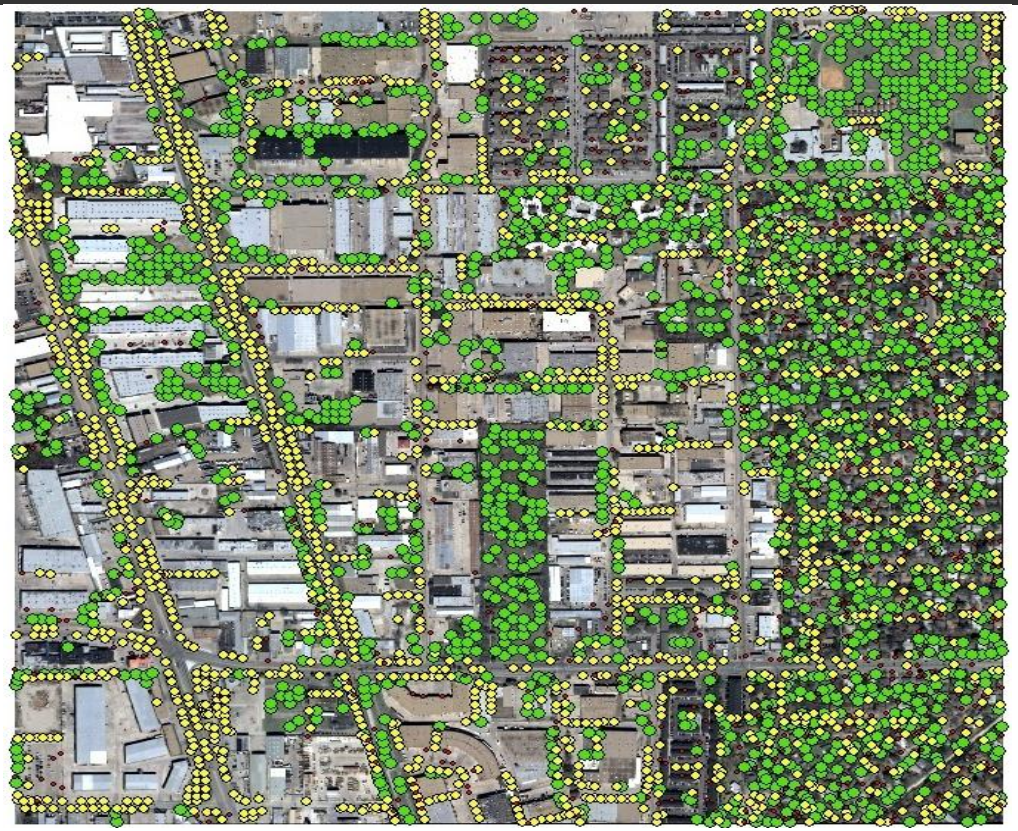
Outcomes

Outcome 1:

1. Using Land Cover data an Analysis of the Existing Urban Tree Canopy (UTC).

2. Determine & illustrate the Existing, Possible & Potential tree canopy and planting space for individual parcels, land use and as a whole for each of the five 1 square mile areas.

3. Portions of this model are based on tools developed by the U.S. Forest Service.



Existing UTC: 8% **Potential UTC: 30%**

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Outcomes

Outcome 2 & 3:

1. The model identifies small, medium and large planting space.

2. This is critical to realistic planting scenarios, and starts by allocating spaces for large trees, then medium and lastly small trees.

Total Planting Spaces: 4,754 in AOI 1

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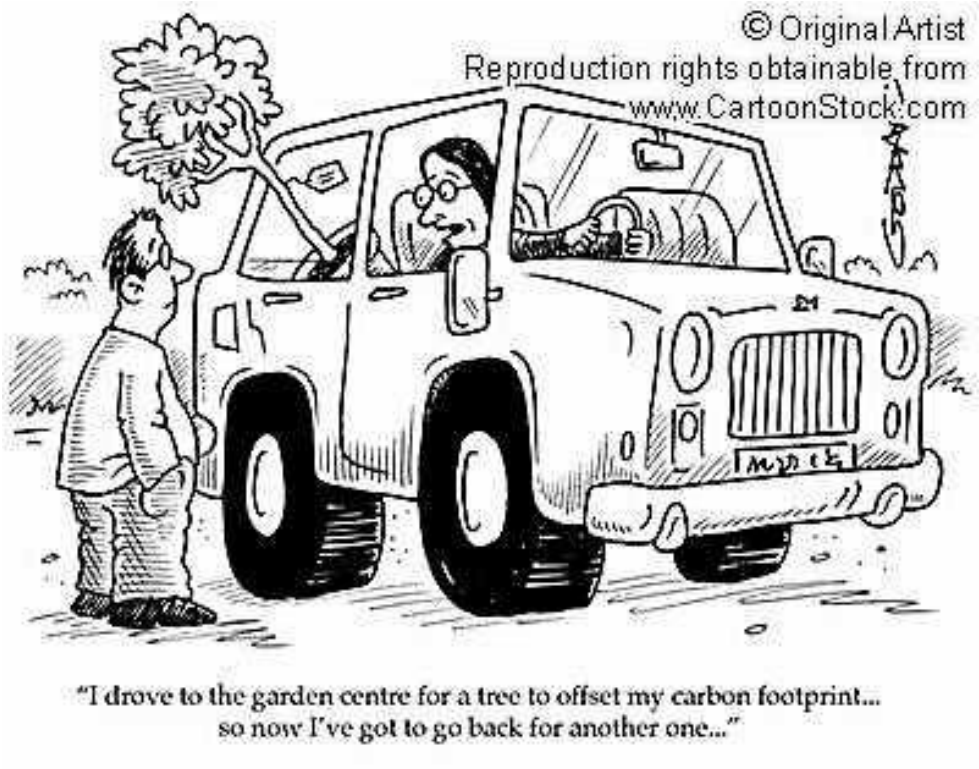
Outcomes

Outcome 4: Prioritize Potential Tree Planting Sites

For example, the data set can be queried for proximity to a building for energy conservation benefits.

- To a stream for riparian values.
- By land use type (public, private, governmental, etc).
- By soil classification for species selection.

Example query: planting sites on commercial property with less than 10% tree cover, is within an urban heat island zone, is within a priority watershed and could support at least one small, medium and large sized tree.



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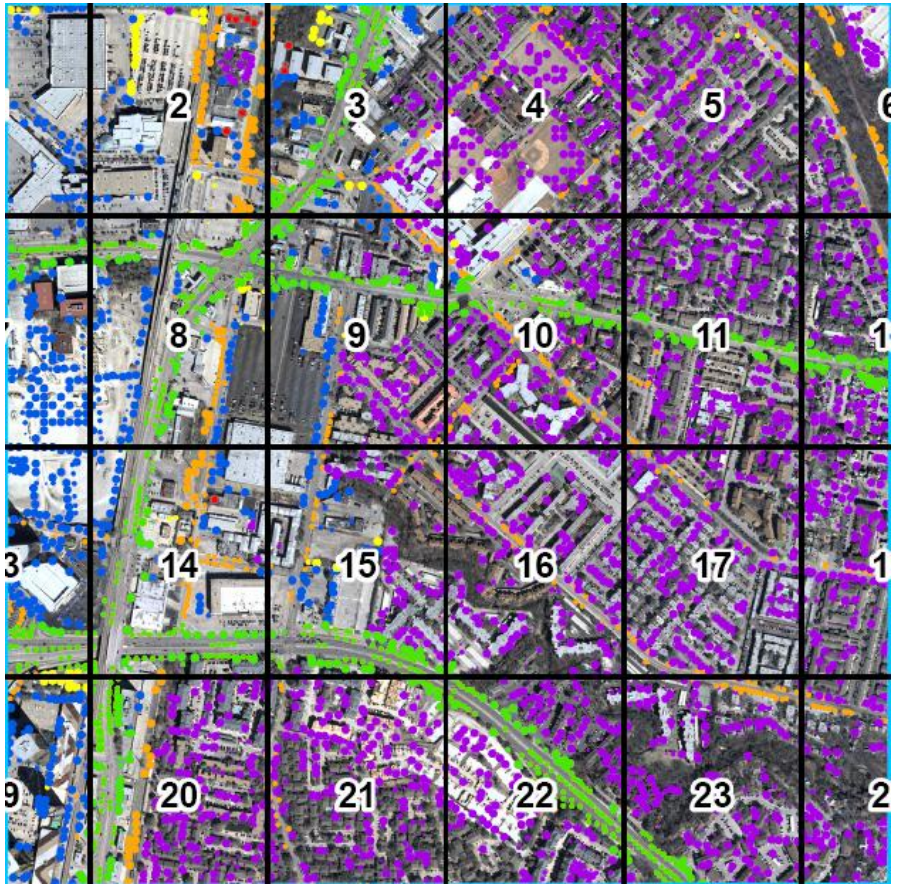
Outcomes

Outcome 4: Prioritize Potential Tree Planting Sites

1. A series of data overlays will be incorporate.

2. Each tree planting site or area will be attributed by the level or presence / absence of heat islands, watershed boundaries, transportation corridors, parks, soils and other data.

3. Each site can now be queried to determine the optimum planting area by a mix of environmental factors associated with it.



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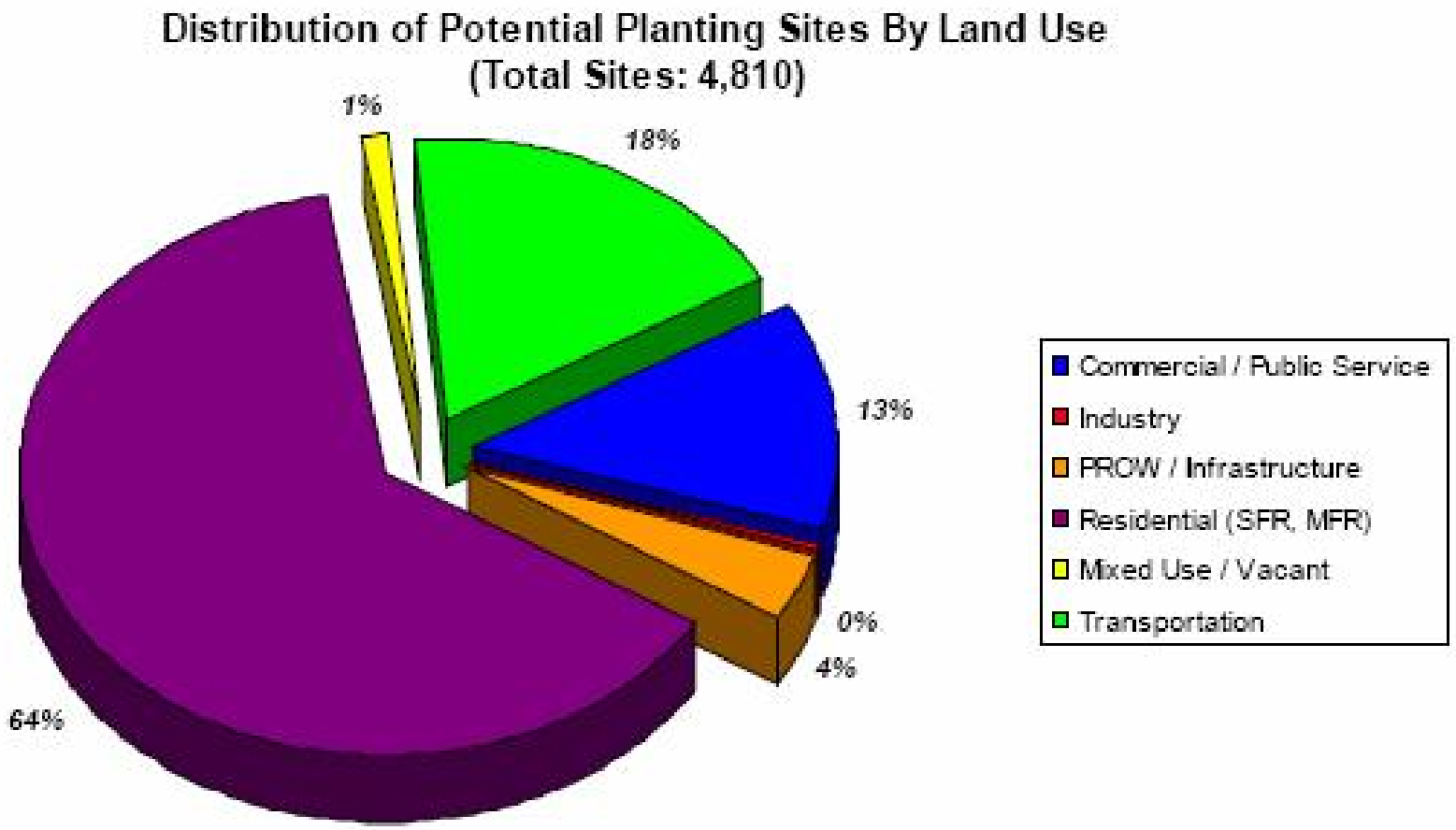
Outcomes



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Outcomes

Energy Efficiency Tree Plantings:

- East, West or South Side of Single-Family Residential Buildings.

•Existing Canopy: **14%**

•Total # Planting Sites: **7,249**

•Planting Sites with Greatest
•Impact on Energy Conservation: **3,128**

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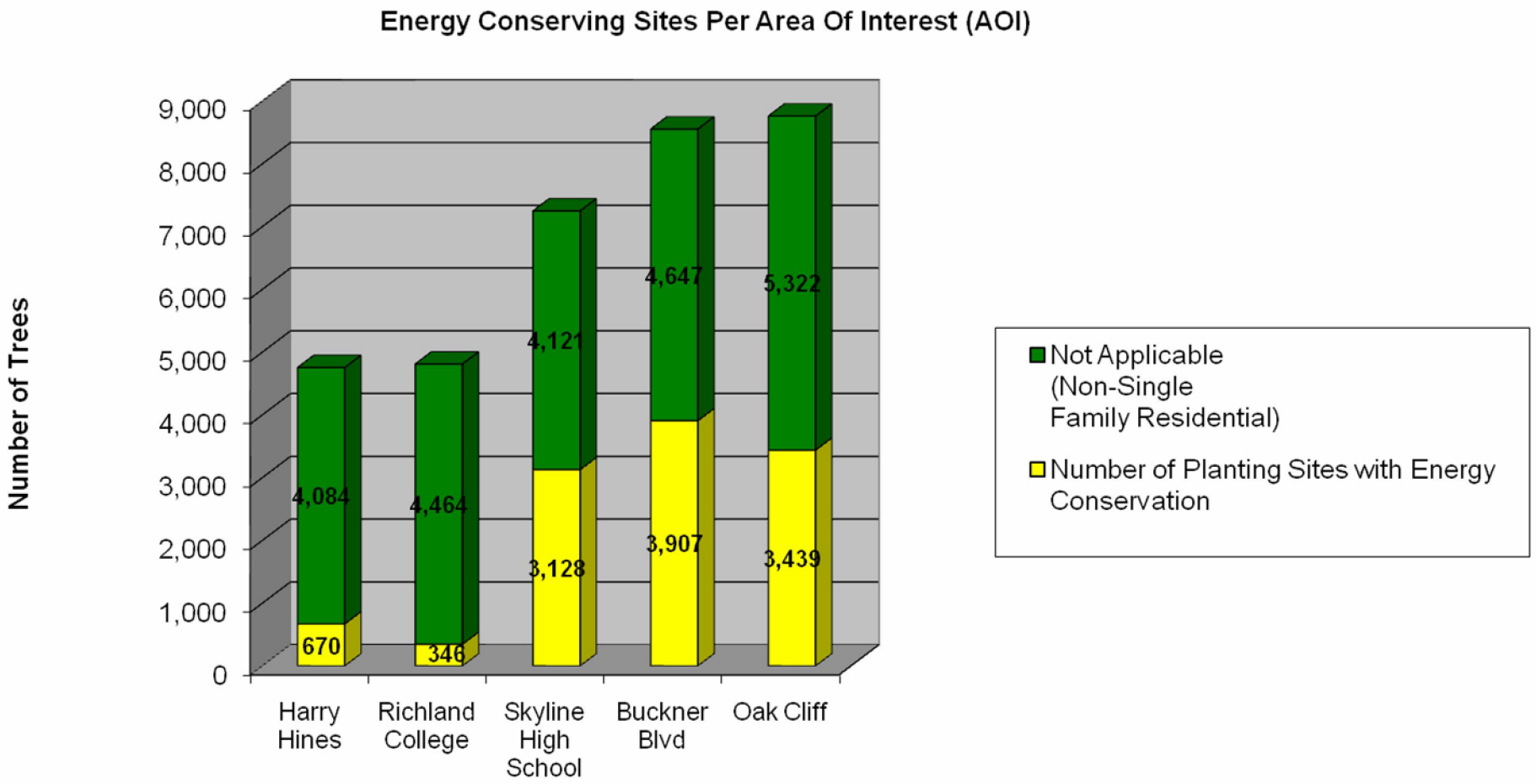
Outcomes



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Outcomes

Storm Water Management:

- 499 Planting Sites That Would Provide More Than 50% Cover Over Impervious Surfaces!

Existing Tree Canopy – **8%**

Potential Tree Canopy – **30%**

Additional Storm Water Savings: $397,439.00

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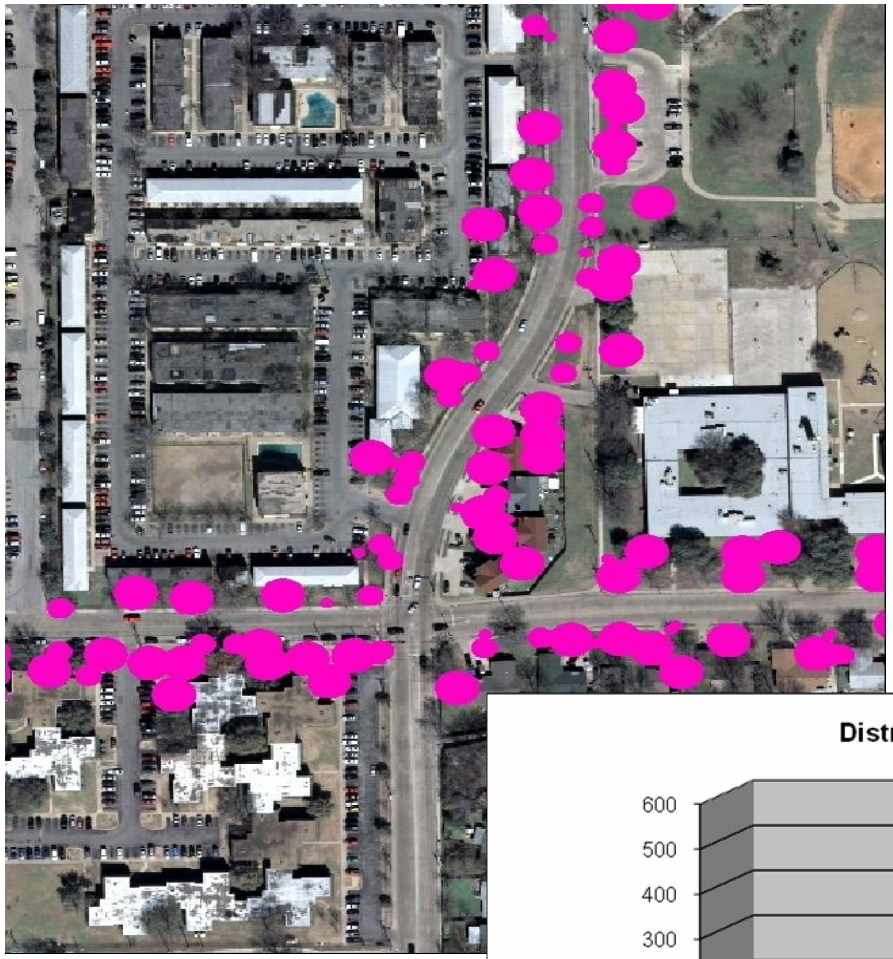
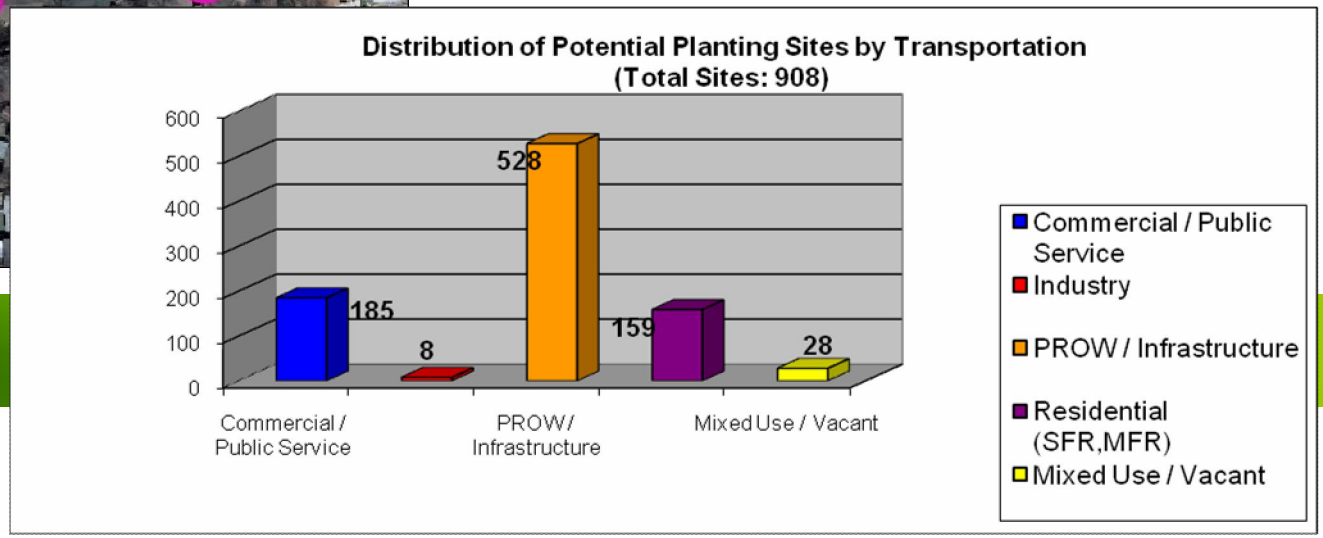
Outcomes



Tree Planting for Transportation and Air Quality:

- Trees within 100 feet of Major Arterials.



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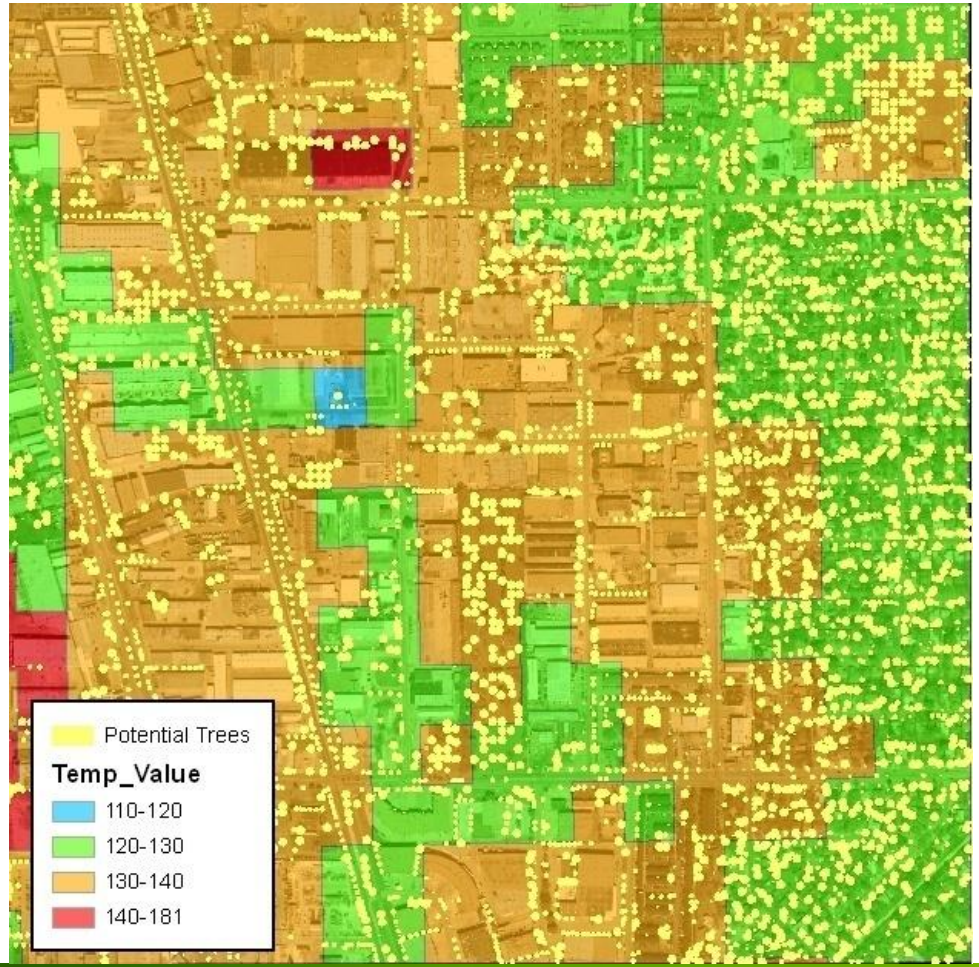
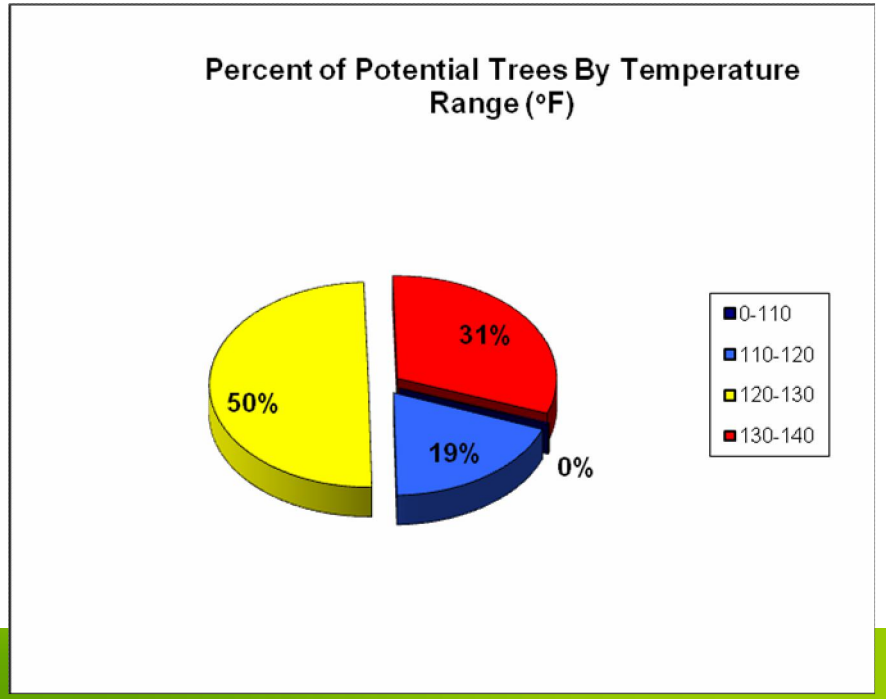
Outcomes



Tree Planting Sites by Hot Spot Information



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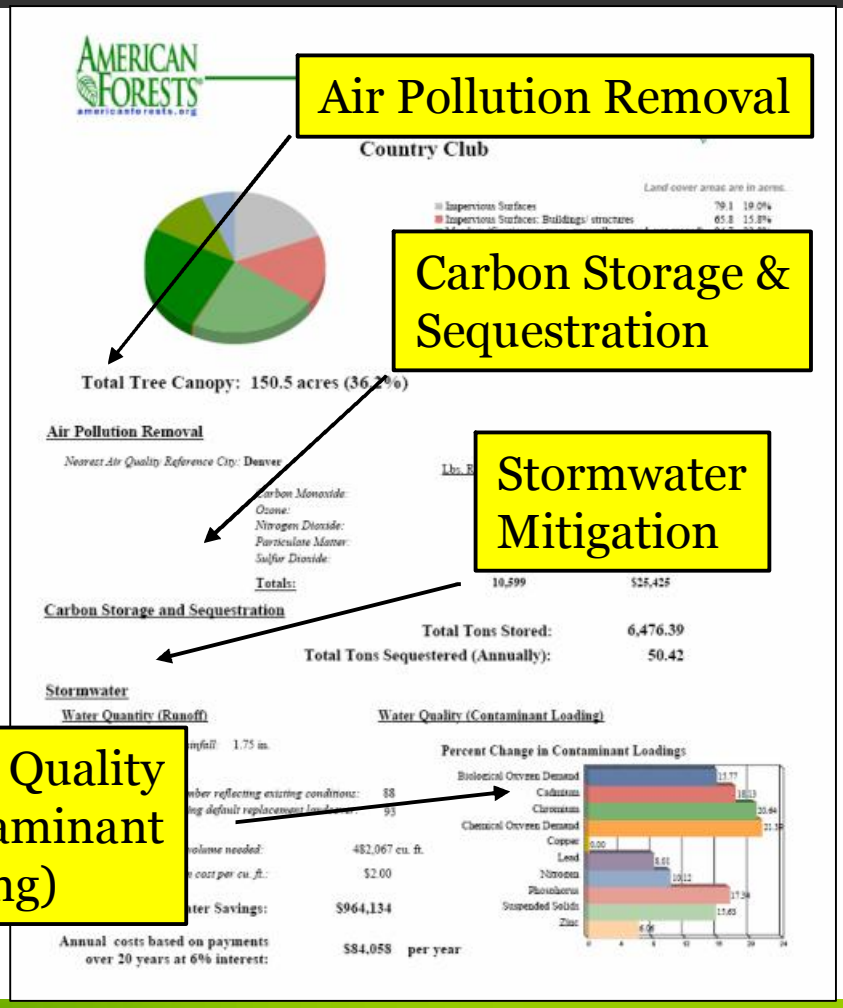
Outcomes

Outcome 5:

CityGreen Report for the 5 sample areas.



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What's Next

Phase 2: The City of Dallas!

1. Use pilot project to help raise funds for phase 2.

2. Bring on new partners and potential funders.

3. Continue to search out possible data sources for more detailed queries.
   - Education!
   - Crime
   - Asthma
   - Water ways
   - Ect..

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What's Next

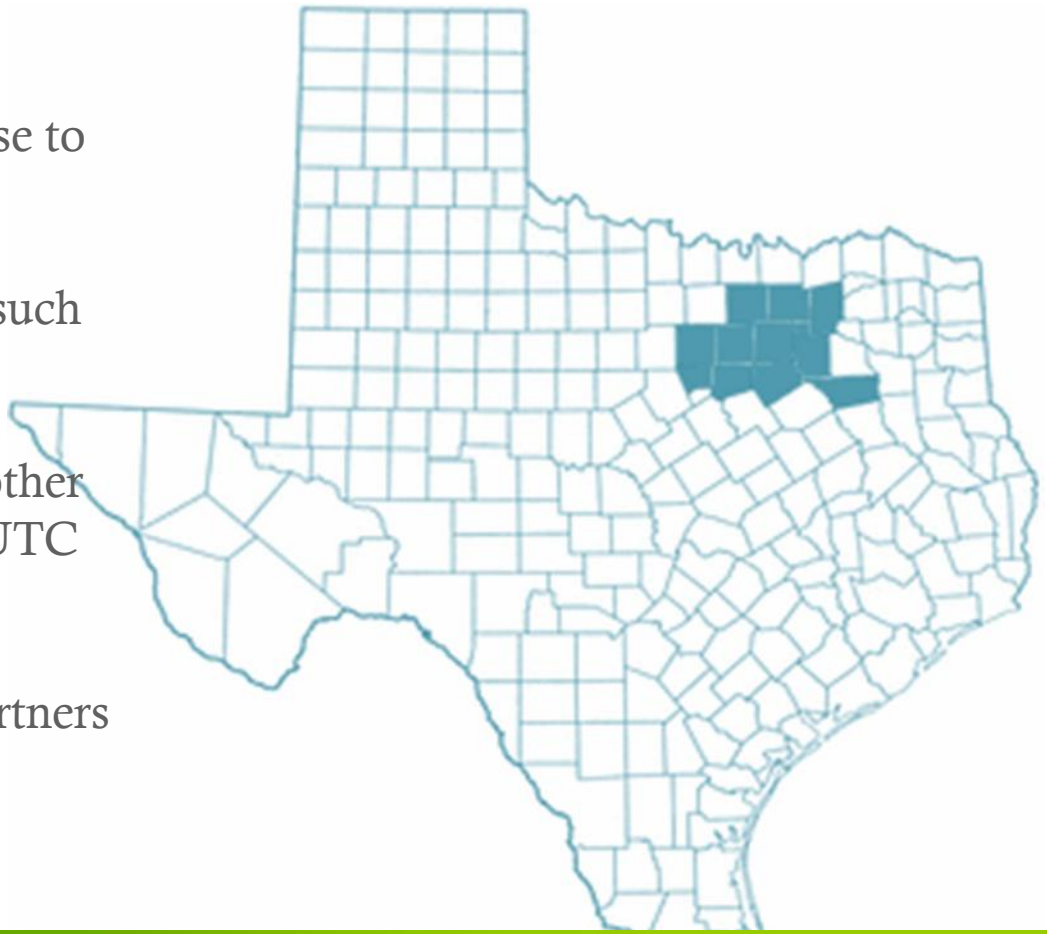
Phase 3: A Regional Approach!

1. Use the Dallas project as a showcase to other municipalities.

2. Partner with other regional efforts such as Vision North Texas.

3. Gather necessary data needed for other communities to perform their own UTC or "Roadmap" project.

4. Help them locate and recognize partners for potential tree planting projects.



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A New Innovative Approach to an Old Problem

Thank You

Questions?

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Texas Trees Foundation

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Credits: Morgan Grove (USFS), Jarlath O'Neil-Dunne (University of Vermont), Dr. Greg McPherson (Center for Urban Forest Research) , Ian Hanou & Jason San Souci (NCDC Imaging), and David Hitchcock (Houston Advance Research Center), Texas Forest Service.