



# Denton Tree Management Software

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**Haywood Morgan, Jr.**  
**Urban Forester**  
**Parks and Recreation**  
**November 12, 2024**

ID: COE24-010





# What is Tree Canopy Coverage?

- The layer of branches, leaves, and stems of trees that cover the ground when viewed from above.



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# How Fast does Tree Canopy Increase?

- 2016 Canopy 0.3%
- 2024 Canopy 3.3%
- Potential Canopy
  - 21.2%



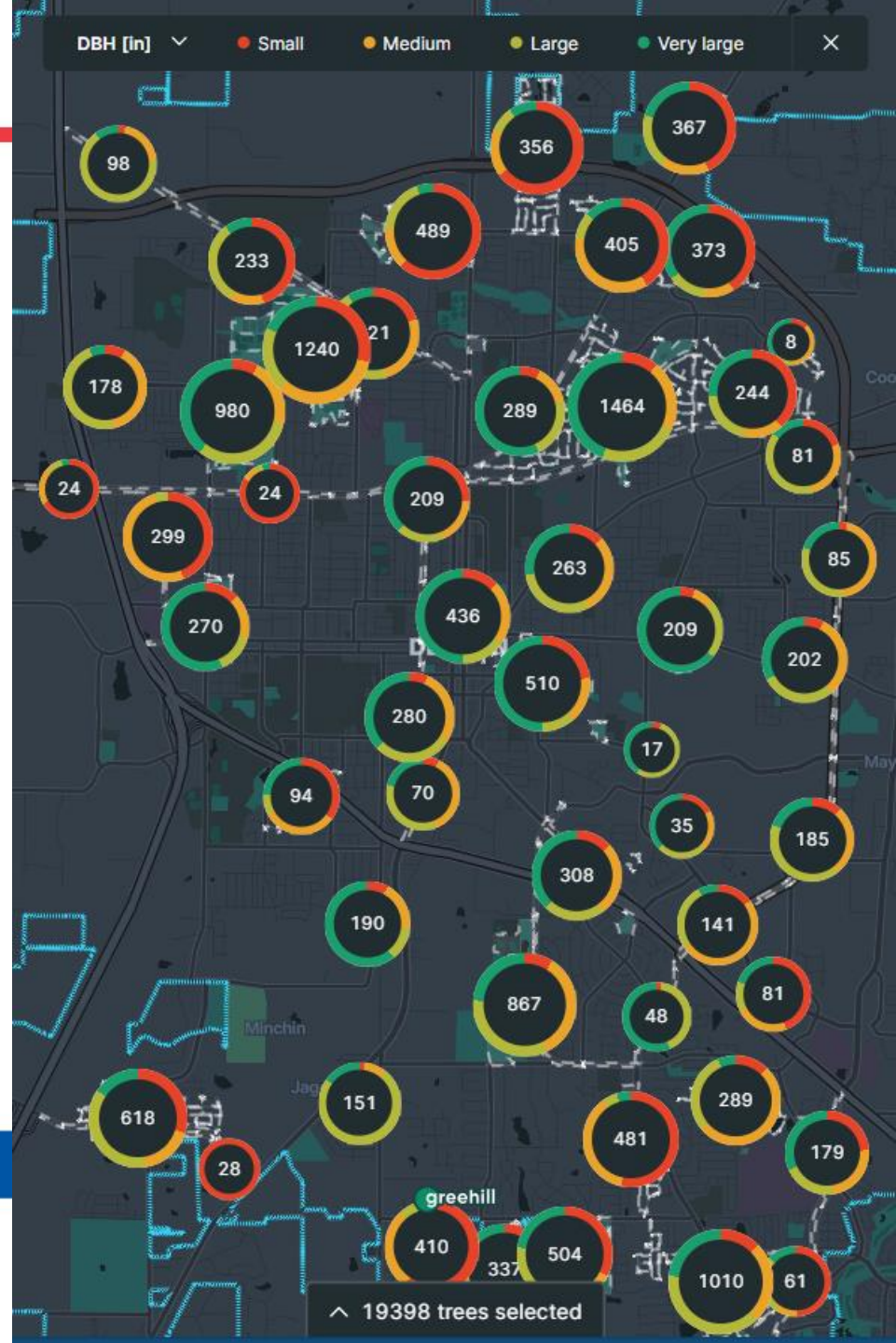
# Tree Management Software

- PlanIT Geo 2022-23
  - Tree Canopy Tracking on pause
- greehill 2023-present
  - Public Realm Tree Inventory
- TreeKeeper Coming this Fall/Winter
  - Tree Canopy and Inventory work management
- American Forest Tree Equity Map



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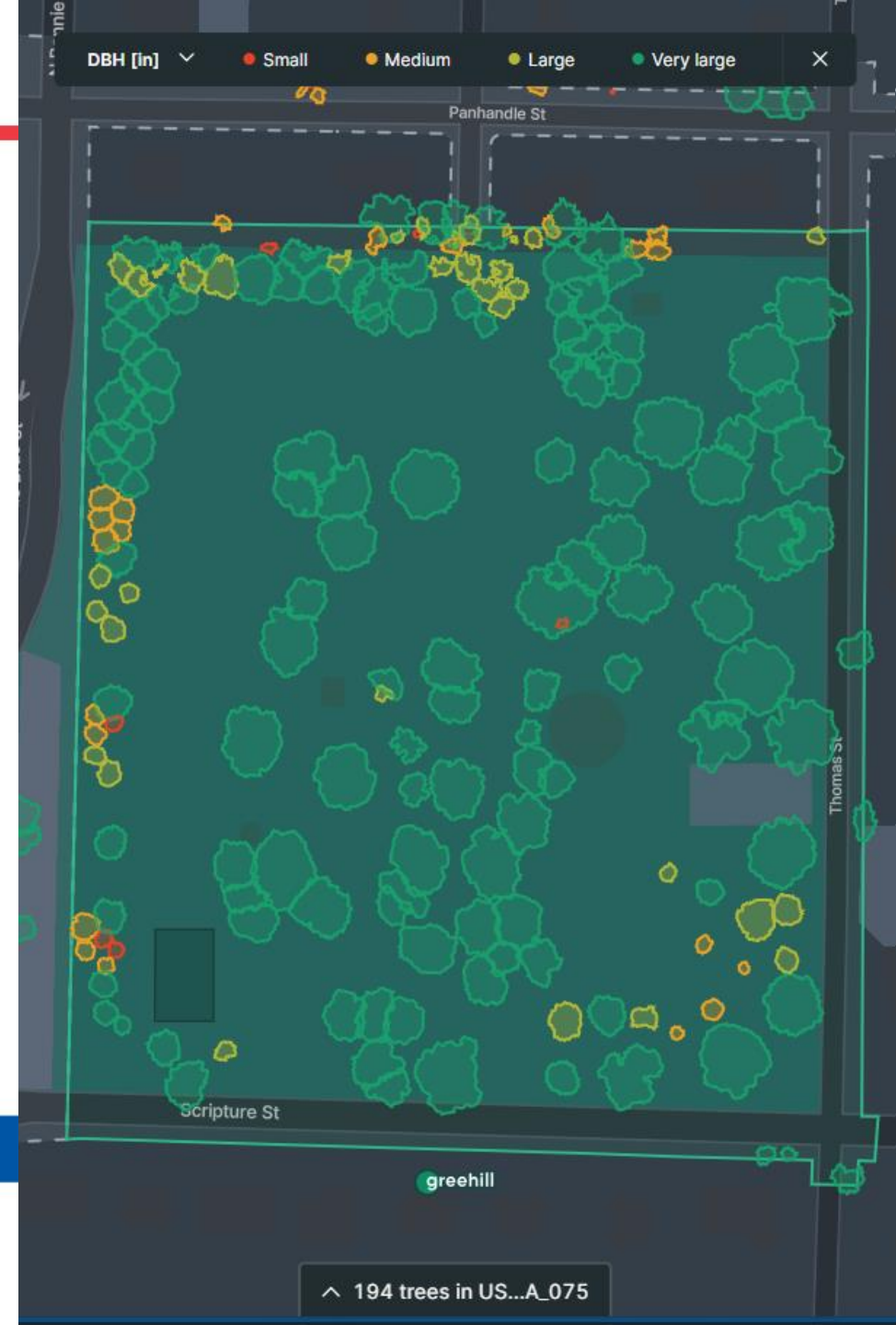
# Tree Management Software greehill

- Objective
  - To develop an inventory of trees in maintained areas of parks, city properties and public right-of-way as called for in the 2020 UFMP.



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## How was it done?

- Data was captured using sensitive car-mounted LiDAR and a high-resolution 360° cameras to capture every tree.



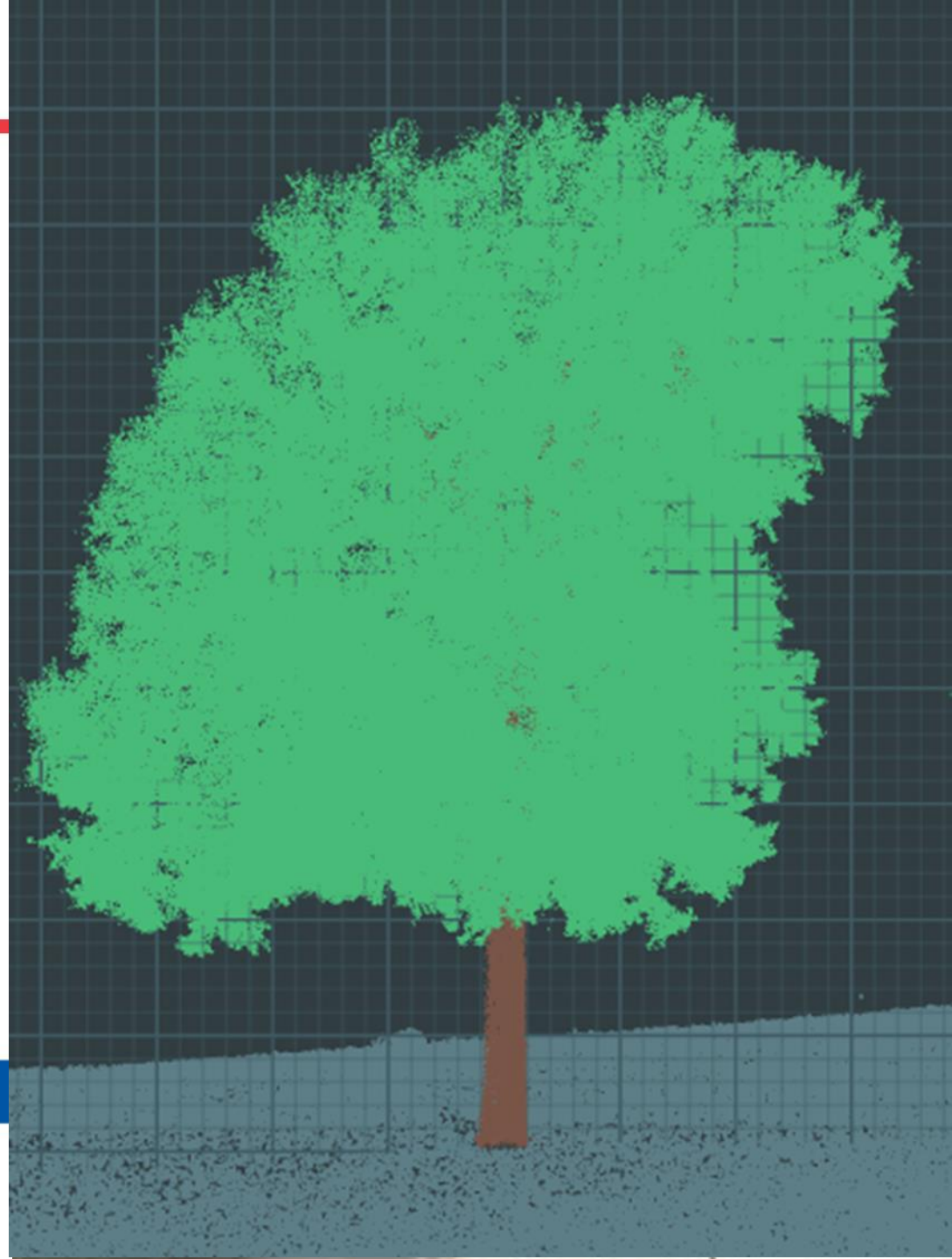
# What Did We Get?

- Improved work management
  - Improved tree health
  - Increased Safety/Reduced liability
- Data driven decision making
- Budgeting
- Guidance on new planting




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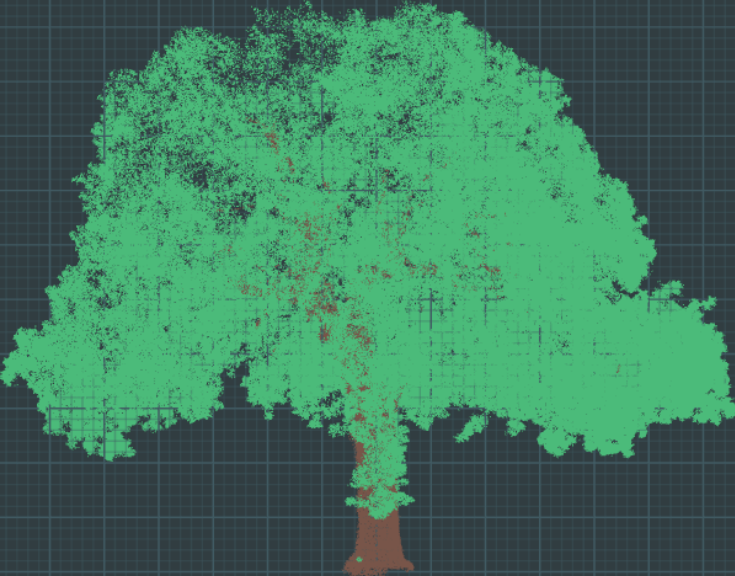
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# What Did We Get?

← MAP Tree 12010 



7/2/2023   Twin view

### > Inventory

GENUS	SPECIES	COMMON NAME	STREET NAME AND NUMBER
Quercus	stellata	No data	No data

▼ Risk Health & Vitality Environment **Benefits**

#### Water management

Avoided runoff	20.91 ft <sup>3</sup> /yr	Evaporation	222.38 ft <sup>3</sup> /yr
Potential Evapotranspiration	2902.01 ft <sup>3</sup> /yr	Transpiration	1071.11 ft <sup>3</sup> /yr
Water Intercepted	222.64 ft <sup>3</sup> /yr		

#### Ecosystem services

Carbon Storage	3747.60 lb	CO <sub>2</sub>	0.03 lb/yr
Gross CO <sub>2</sub> Sequestration	378.10 lb/yr	NO <sub>2</sub>	0.09 lb/yr
Oxygen Production	999.15 lb/yr	O <sub>3</sub>	1.49 lb/yr
PM <sub>2.5</sub>	0.06 lb/yr	SO <sub>2</sub>	0.01 lb/yr

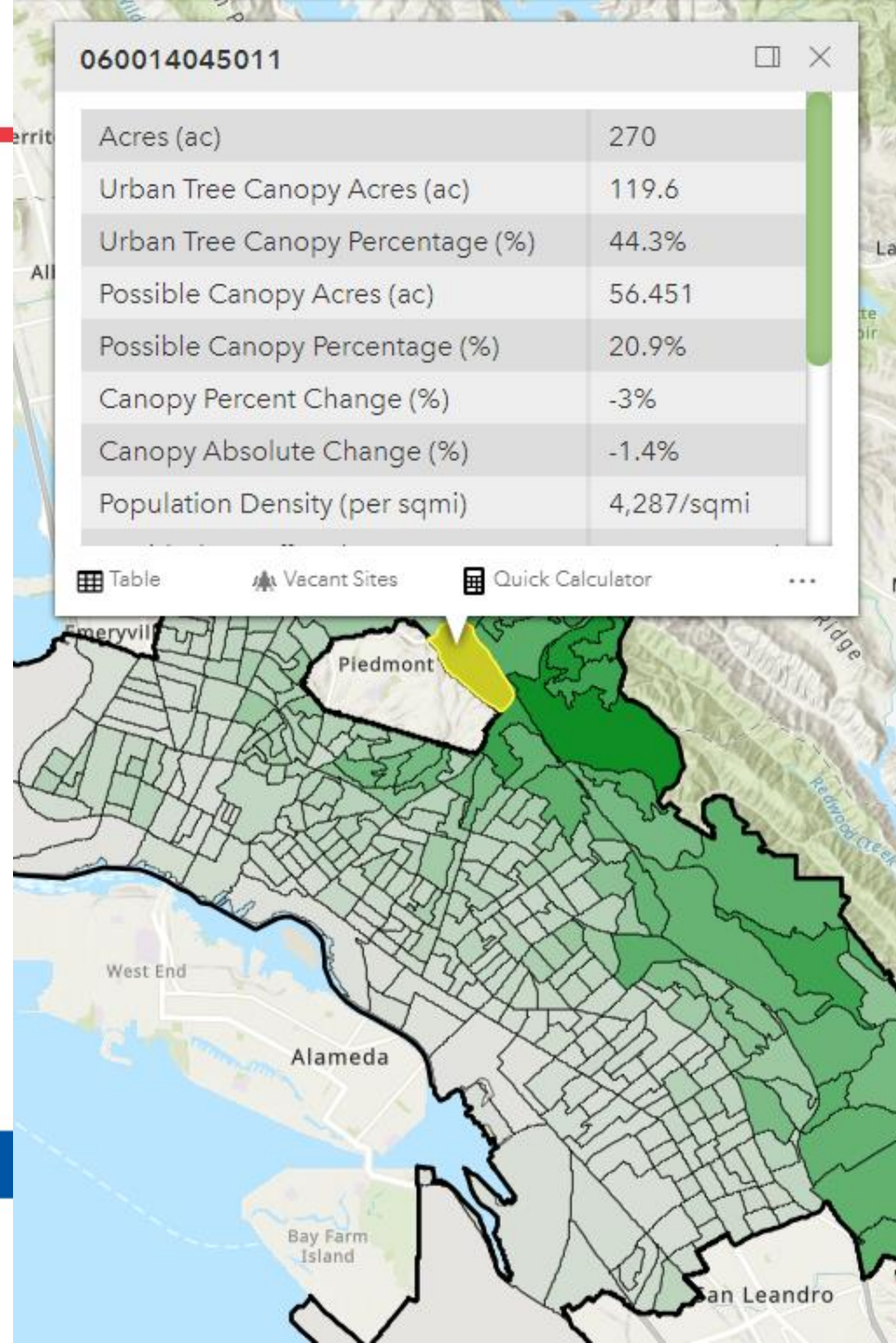
#### Economical value

Cavat value	17573.08 £	Koch value	12405.90 €
Rado value	1274.48 Ft		



# Tree Management Software TreeKeeper

- Companion software to greehill tree inventory software.
- Tree Inventory Data
- Tree Canopy Data



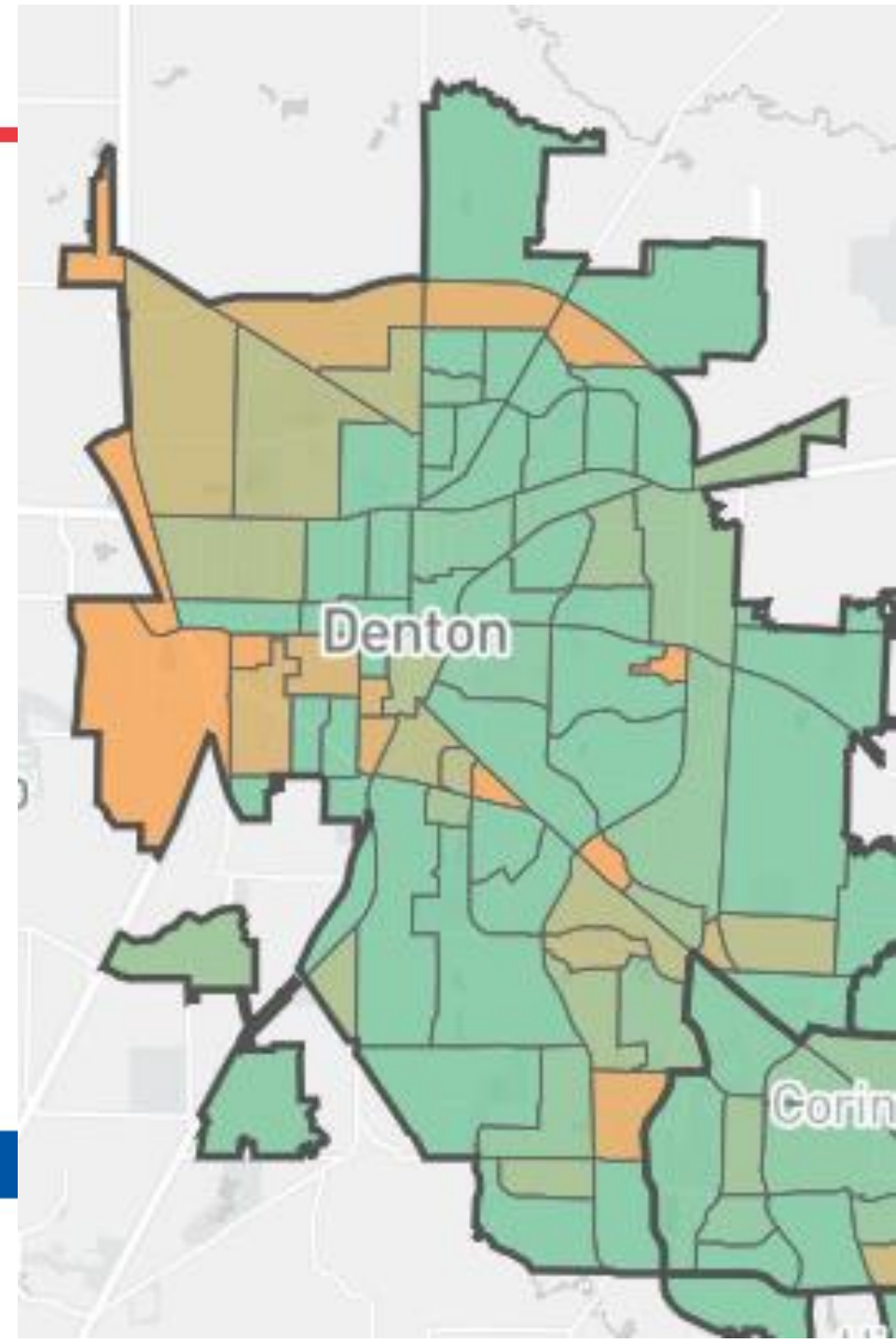
# American Forest – Tree Equity Map

- Tree Equity Score – is a metric that helps cities assess how they are delivering equitable tree canopy cover to all residents. It takes into consideration tree canopy, climate, demographic and socioeconomic data.



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# American Forest – Tree Equity Map

TARGET SCORE: 80

Target block groups: 17



	CURRENT SCORE	SCORE GAIN	CURRENT CANOPY	CANOPY GAIN	TREES NEEDED	POP	POV	POC	UNEMPL	AGE	LANG	HEALTH	HEAT
BG 481210212031	44	+36	7.1%	+14.6%	652	1,256	74%	60%	30%	48%	8%	64	+4.4°F
BG 481210213011	61	+19	9.1%	+10.0%	453	961	55%	66%	0%	13%	10%	56	+8.0°F
BG 481210203102	62	+18	3.2%	+12.4%	2,665	1,221	21%	12%	3%	44%	0%	50	-3.3°F
BG 481210208002	64	+16	10.0%	+8.7%	8,812	1,768	71%	34%	12%	9%	5%	67	+5.6°F
BG 481210209002	66	+14	13.2%	+6.6%	356	2,624	80%	59%	9%	9%	9%	56	+7.7°F
BG 481210212043	69	+11	10.7%	+6.6%	387	1,108	75%	47%	2%	3%	0%	64	+4.3°F
BG 481210204051	71	+9	8.0%	+6.5%	6,563	2,001	25%	19%	9%	30%	2%	48	-0.1°F



# 5-Year Planting Plan Draft

- Focuses on areas near pavement (street, parking lots and paved trails)
- Plants and irrigates 1322 tree
- Replaces 262 trees



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Locaiton	Year	Number of Trees
<b>Five-Year Tree Planting Plan 2024-25</b>		

Locaiton	Year	Number of Trees
Mayhill Rd South of McKinney	2027-28	150
Bell Ave TWU	2027-28	40
North Lakes Park Soccer	2027-28	35
Paisley & Audra (2" cal)	2027-28	19
Mac Park South	2027-28	14
Patrick Park (2" Arbor Day)	2027-28	19
Tree Replacement	2027-28	50
<b>Total</b>		<b>327</b>

<b>Five-Year Tree Planting Plan 2028-29</b>		
Mayhill Rd North of McKinney	2028-29	150
San Jacinto Blvd	2028-29	19
Lake Forest Park II (2" cal. Arborday)	2028-29	26
Linda McNatt Entrance	2028-29	22
South Lakes Trail West Section 6	2028-29	23
South Lakes Trail West Section 5	2028-29	17
Bonnie Brae II	2027-28	8
Windsor Dr NL	2028-29	6
Tree Replacement	2028-29	50
<b>Total</b>		<b>321</b>

Windsor Dr NE (North Side of rd)	2026-27	22
Hurcules Ln	2026-27	15
Mac Park N	2026-27	6
Fred Moore Park (2"cal. Arbor Day)	2026-27	20
Tree Replacement	2026-27	50
<b>Total</b>		<b>345</b>



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# Questions?

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