



City of Knoxville: Canopy Assessment
Executive Summary



CITY OF KNOXVILLE
July 13, 2021

WHY TREES?

Reduce stress, lower blood pressure and increase mood

Increase levels of physical activity

Improve air and water quality

Promote ecotourism- KUW

Increase business traffic

Reduce stormwater runoff and prevent water pollution

Shade and cools sidewalks and parking lots

Increase property value

Reduce crime rates

Provide food and shelter for animals

Reduce heating and cooling costs

Heal hospital patients faster and with less complications

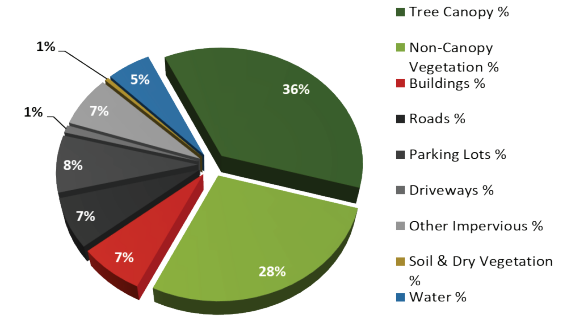
Beautify a space and reduce traffic sounds



Summary of Findings: Council Districts

24,000 acres
of urban tree canopy in the City of Knoxville.
This accounts for **38%** of the land area in the city

Land Cover breakdown



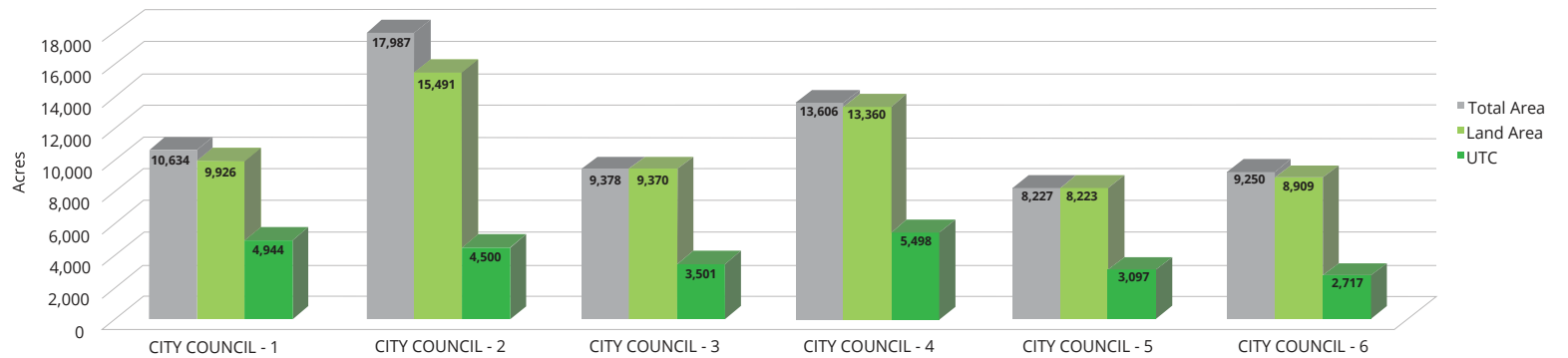
TERMS TO KNOW

Urban Tree Canopy (UTC) is the amount of leaves, twigs, branches, and trunks of trees that cover an area when looking from above.

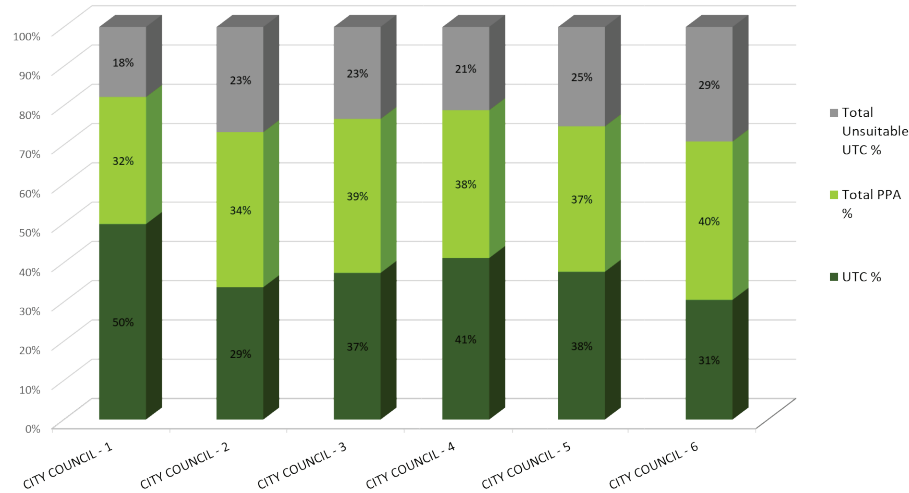
Impervious is surface that does not contain vegetation, such as pavement, buildings, trails and other hardscape.

Possible Planting Area (PPA) is land that is suitable for planting.

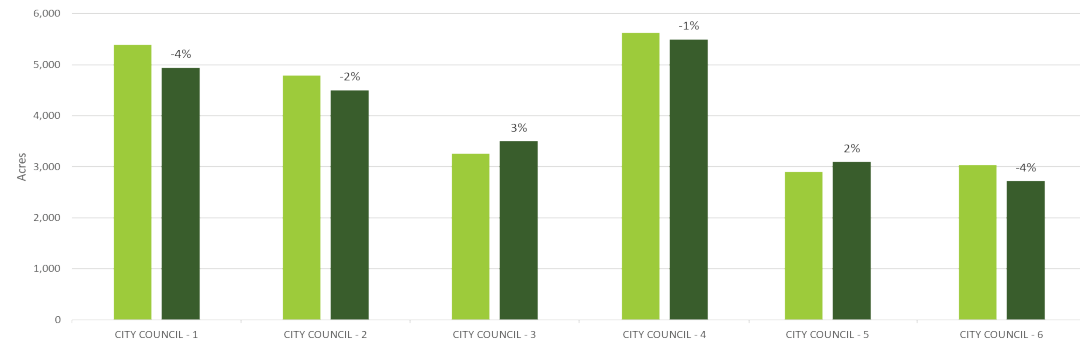
UTC Metrics by City Council Districts



UTC Potential (%) by Knoxville City Council Districts



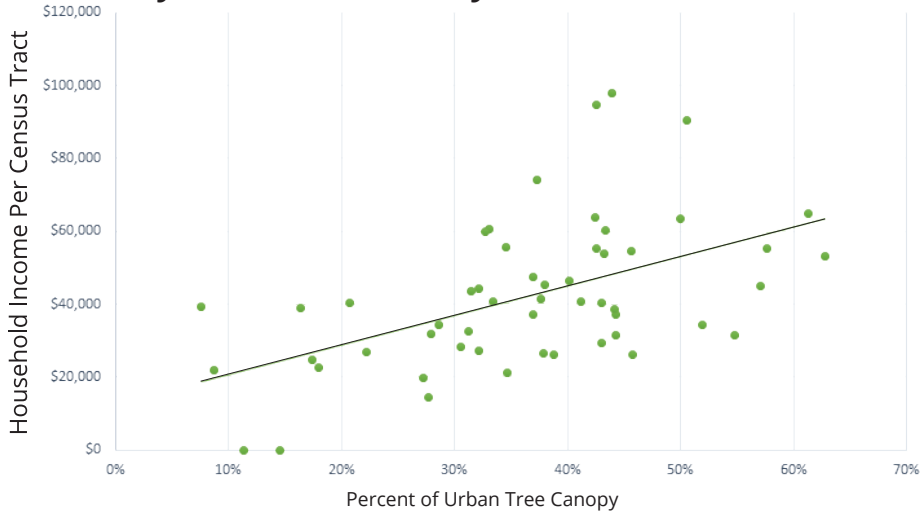
UTC Change by Knoxville City Council Districts 2008-2018



Summary of Findings: Census Data

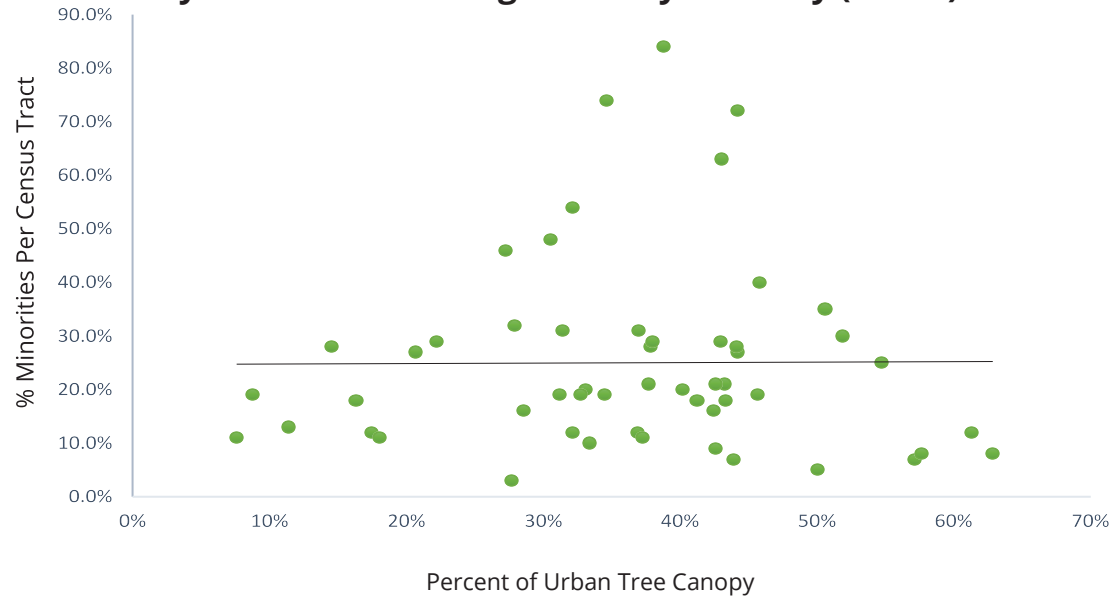
Tree equity is important to ensure all neighborhoods have adequate UTC, so all members of the community can obtain the health, economic, and environmental benefits that trees offer.

City of Knoxville UTC by Household Income



Household income **does** correlate to the amount of UTC in a community.

City of Knoxville Changes UTC by Minority (BIPOC)

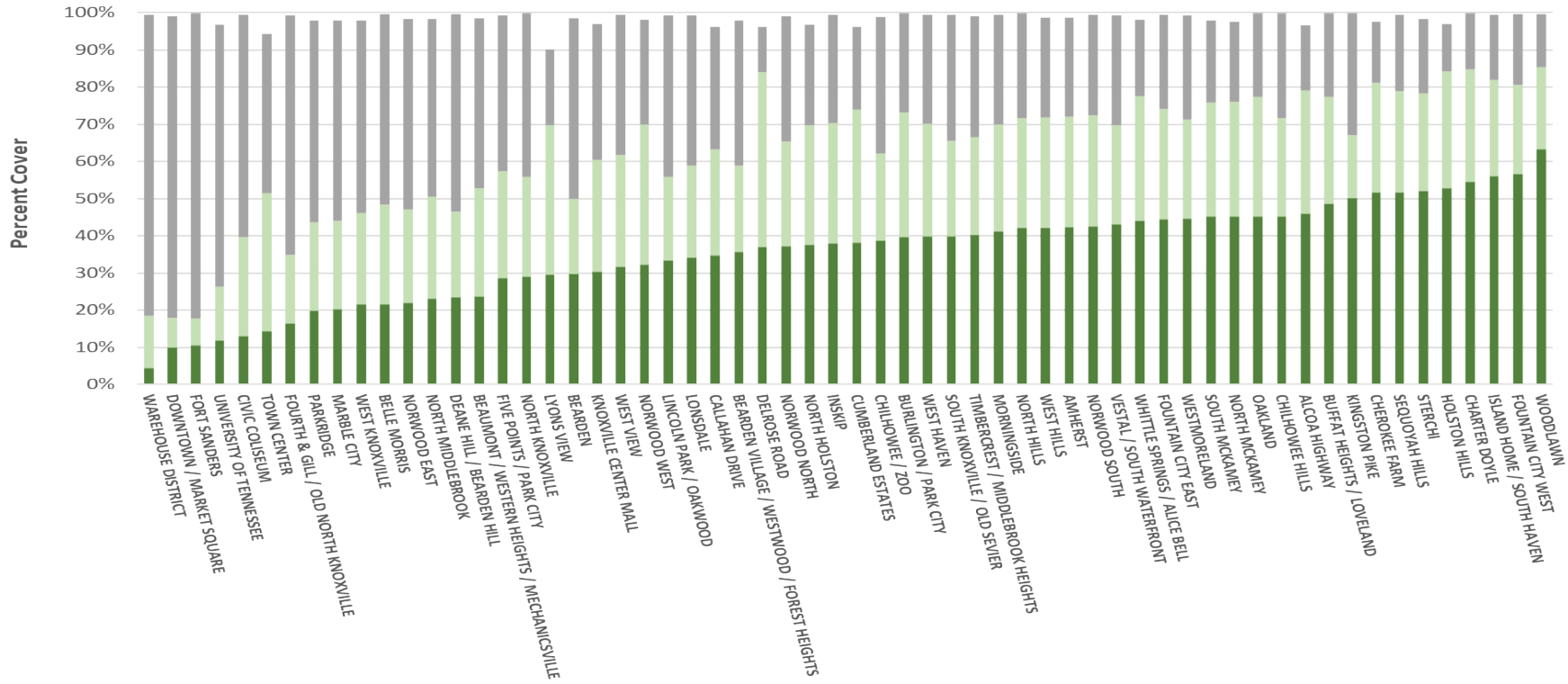


Minority communities were not likely to see lower or higher UTC when compared to other communities across the City

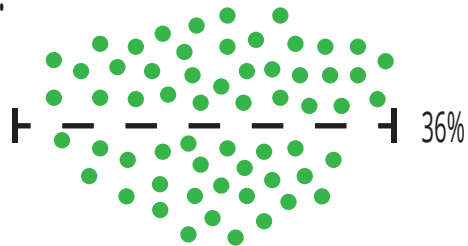


Knoxville Neighborhoods: Land Cover

Land Cover for City of Knoxville Neighborhoods



The average UTC in each neighborhood is **36%**
34 of the 60 neighborhoods are above
 the City average.



Neighborhood Ranking from Lowest to Highest % UTC

- UTC 2018 %
- Total Impervious Area %
- Possible Planting Area %

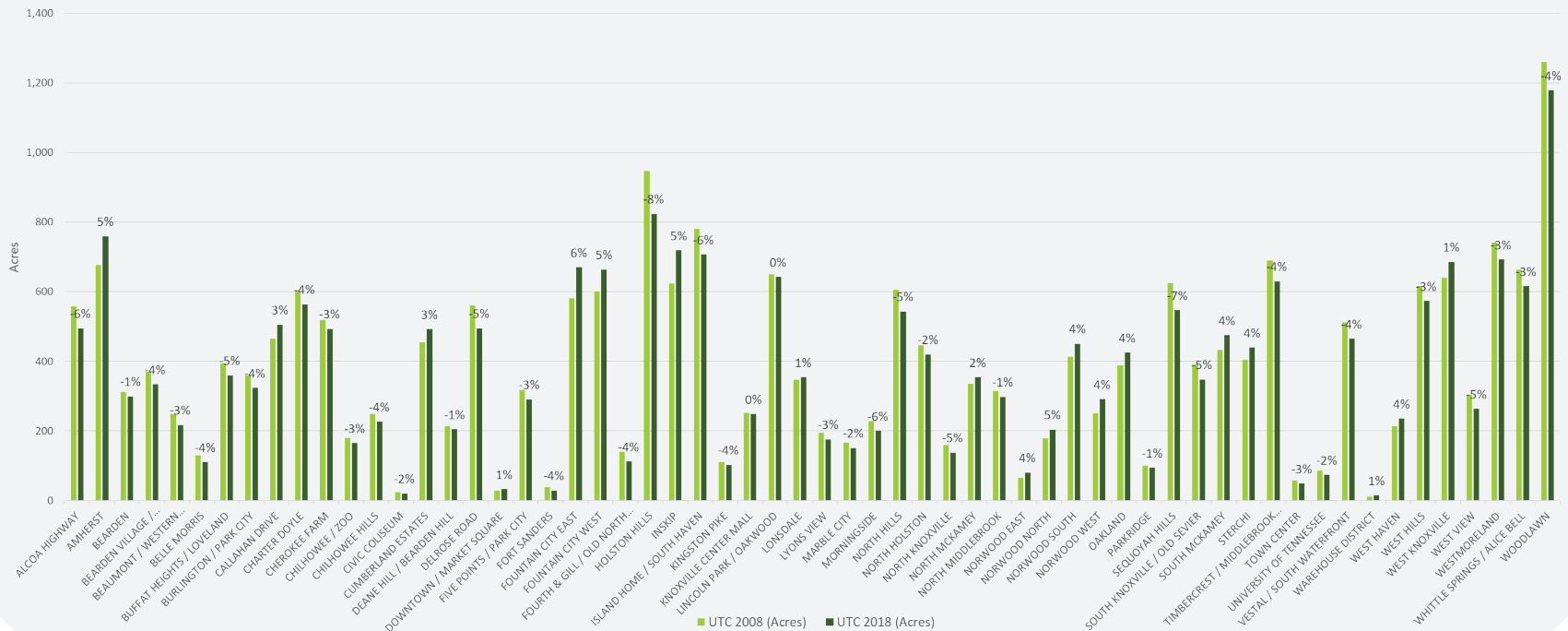
Knoxville Neighborhoods: Changes in UTC

19 of the 60 (33%) of neighborhoods are trending towards an increase in tree canopy.

Most of the neighborhoods trending in the right direction tend to be located on the **north side of the city.**



UTC Change by Knoxville Neighborhoods, 2008-2018

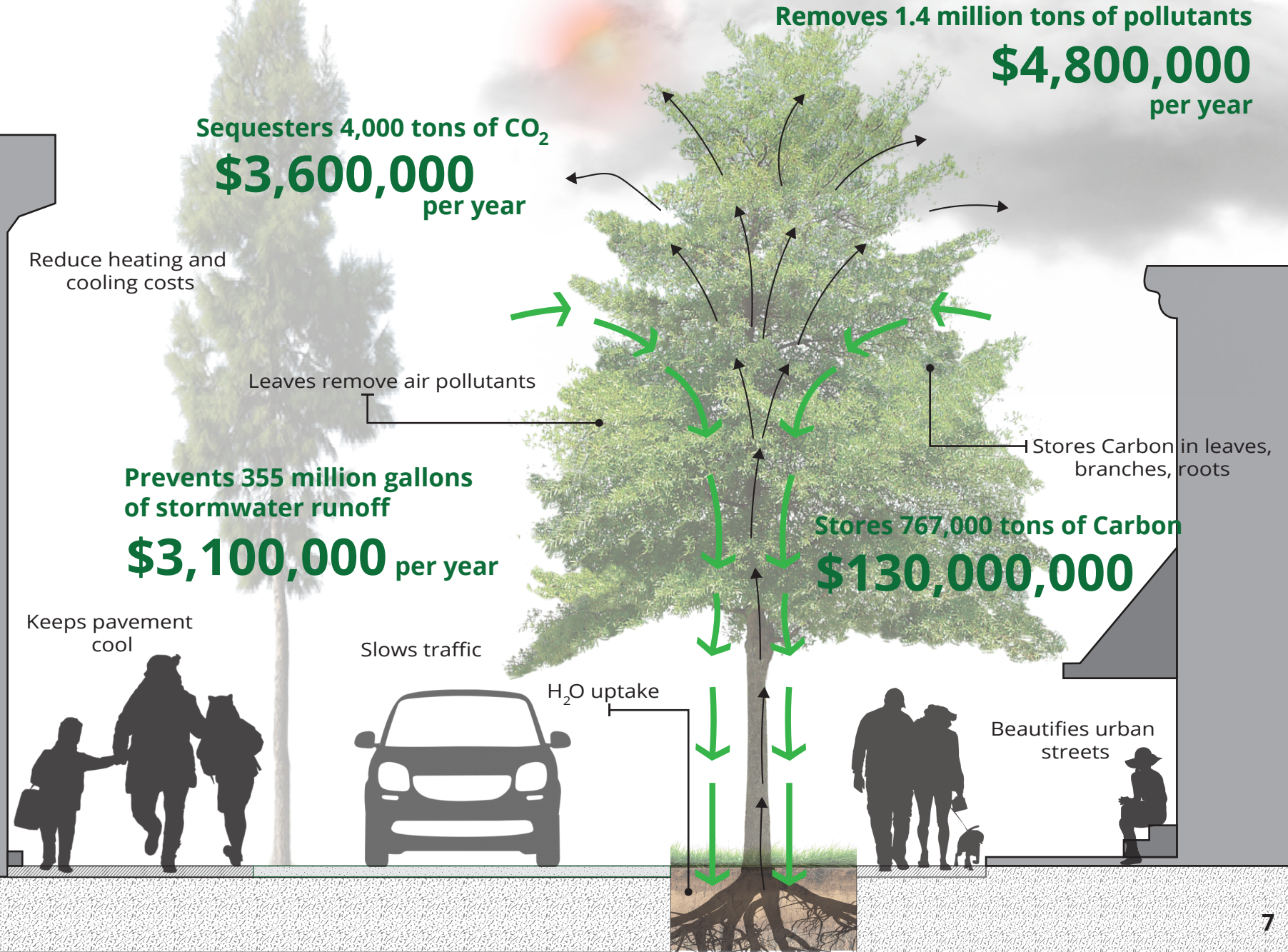


Land Cover for City of Knoxville Zoning District

Zoning Type_	Total Area_	Urban Tree Canopy (Acres)_		% Urban Tree Canopy_	Impervious Area (Acres)_	% Impervious_	Potential Planting Area (Acres)_	% Potential Planting Area_
		2008	2018					
City Wide	63,114	25,002	24,246	38%	20,023	32%	17,887	28%
Agricultural	2,504	1,197	1,162	46%	147	6%	1,042	42%
Commercial	7,146	1,504	1,508	21%	3,967	56%	1,603	22%
Cumberland	32	3	2	6%	29	91%	1	3%
Downtown	245	17	19	8%	211	86%	15	6%
Industrial	5,313	1,289	1,243	23%	2,679	50%	1,299	24%
Institutional	2,074	411	411	20%	963	46%	573	28%
Open Space/ Natural Area	5,022	2,983	2,862	57%	370	7%	1,499	30%
Residential	29,114	14,987	14,472	50%	5,490	19%	8,984	31%
ROW	11,434	2,544	2,515	22%	6,050	53%	2,813	25%
South Waterfront	229	67	52	23%	118	51%	59	26%

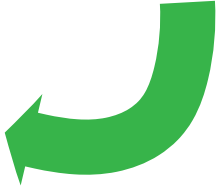
City of Knoxville Tree Benefits

The following data is estimated benefits that UTC provides the community when modeling the amount of UTC in the City using i-Tree Landscape



The Loss of Tree Canopy Cover in 10 years: **1%**

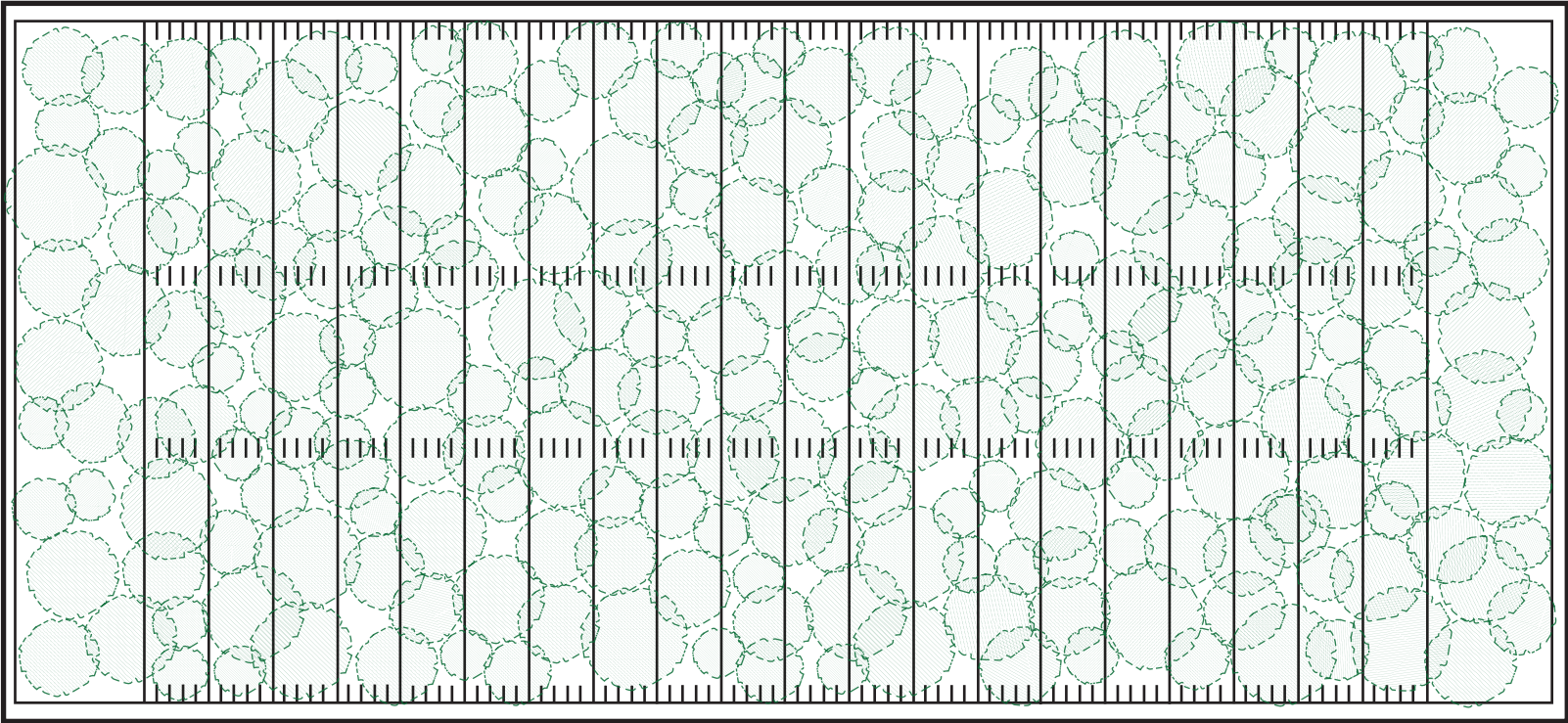
732 ACRES



Majority of the tree loss occurred on private, residential property.

The 1% loss equates to an estimated loss of about **\$115,000** of annual benefits to the community.

The size of 554 football fields



The 1% loss:

- \$36,000 annual loss in Carbon Sequestration
- \$47,000 annual loss in Air Pollution Removal
- \$32,000 annual loss in Avoided Run off

CITY OF KNOXVILLE URBAN FORESTRY ADVANCEMENT:

TREE MAINTENANCE*

- Hired an Urban Forester
- Created an Urban Forestry Division
- Structurally prunes young trees
- Provides follow up care for newly planted trees
- Enforces proper pruning and mulching
- Start a cyclical maintenance cycle

TREE PLANTING RECOMMENDATIONS*

- Updated the recommended species list
- Tags and inspects trees selected at the nursery
- Inspects contractor plantings
- Actively engages with owners and KUB about proper tree locations around utilities

TREE INVENTORY*

- Completed the tree inventory of public trees
- Updates the inventory on a regular basis

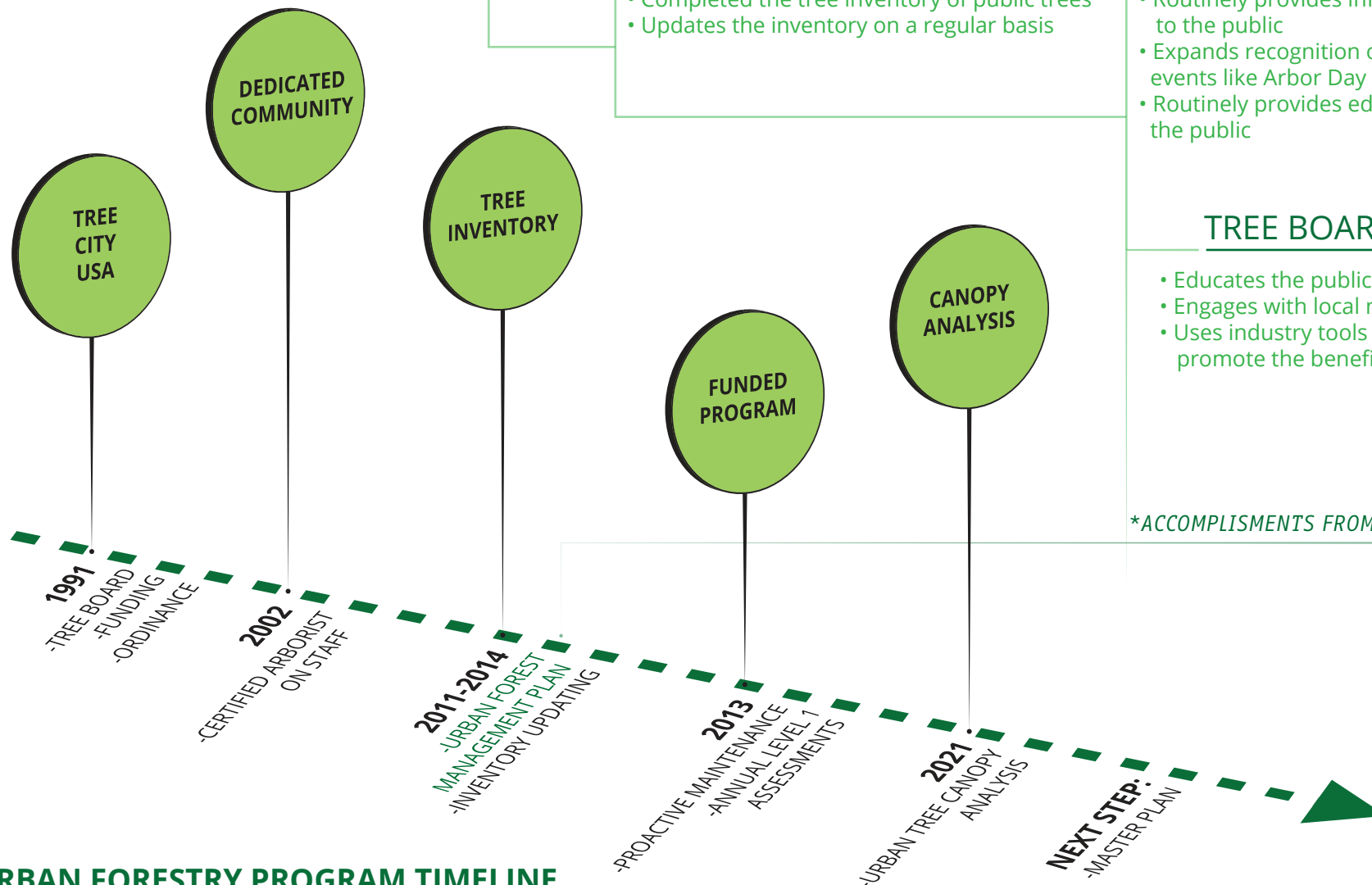
PUBLIC RELATIONS*

- Routinely provides information about trees to the public
- Expands recognition of trees such as events like Arbor Day
- Routinely provides education material for the public

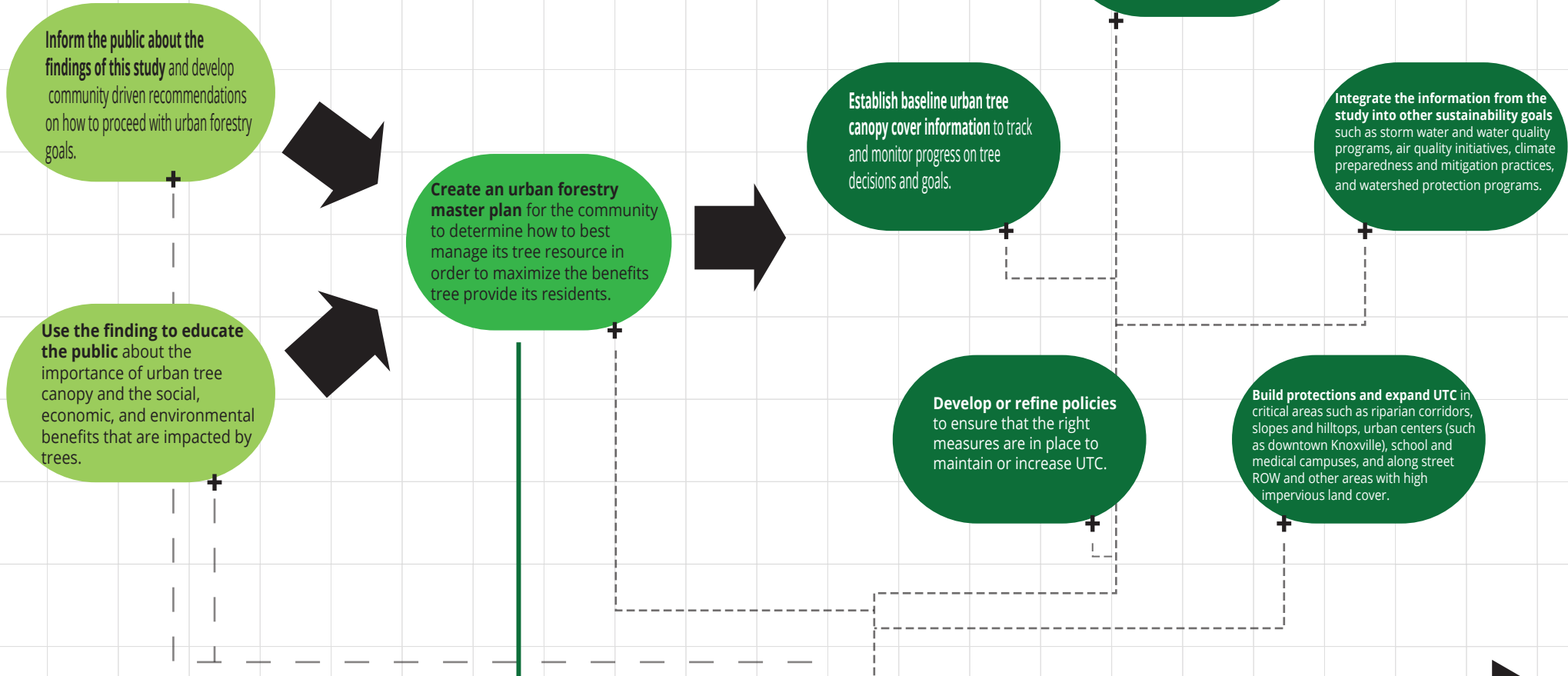
TREE BOARD*

- Educates the public on proper tree care
- Engages with local non-profits
- Uses industry tools and technology to promote the benefits of trees

*ACCOMPLISHMENTS FROM MANAGEMENT PLAN



RECOMMENDATIONS



MASTER PLAN VS. MANAGEMENT PLAN:

A **master plan** is intended to provide direction for improvement over a long time frame

A **management plan** is the process of defining the direction and resource allocation for improvement

CONTRIBUTERS:

- COK Communications
- Public Service
- Tree Board
- Nonprofits
- Community Stakeholders
- Urban Forestry Consultant
- City Council
- All City Departments