



PLANT. GROW. SUSTAIN.

Broad Street - 1938



Broad Street - 2010



Take Root – Early Beginnings

Pieces of the Mosaic - 2007

1. RPA estimates that our downtown tree canopy is 7-8% in the CBD.
2. Select Trees in Athens, GA offers trees as part of their Sustainable Tree Bank.
3. Owners of Chattz Coffee make a plea for more trees in the downtown and offer to help pay.
4. Leadership Chattanooga team wants a green project.

Leadership Chattanooga Class '08





Branding and Marketing

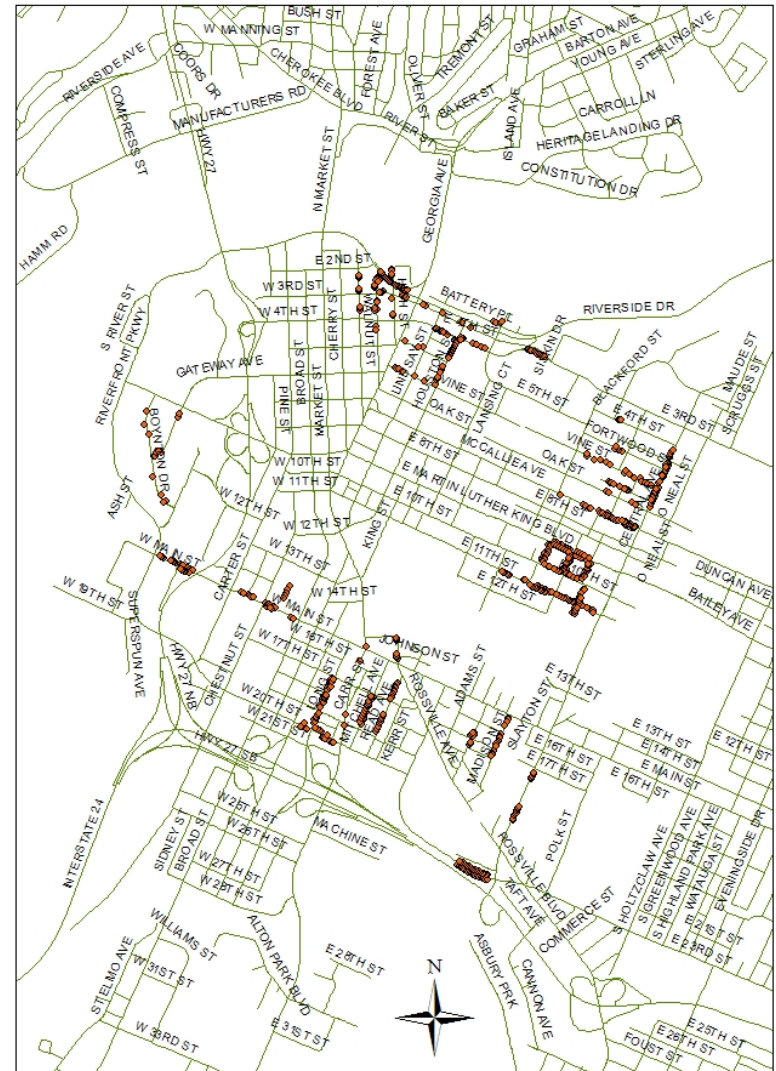


Take Root Initiative



0 1,050 2,100 4,200 Feet

Take Root Plantings - 2008



Species Diversity

Trident Maple
'Aristocrat' Pear
'Autumn Blaze' Maple

Blackgum

Chinese Elm 'Bosque'

Chinese Pistache

Crapemyrtle – Dynamite

Muscogee

Natchez

Sioux

Tuskegee

Eastern Dogwood

English Oak 'Fastigiata

'Ginkgo

'Princeton Sentry' Ginkgo

Goldenrain Tree

'Hightower' Willow Oak

Kentucky Coffeetree

Pin Oak

Overcup Oak

'Princeton' American Elm

Red maple

Redbud

'Redmond' Linden

'Regal Prince' Oak

Saucer Magnolia

Sweetgum

Seedless Sweetgum

'Slender Silhouette' Sweet-
gum

'Strawberry Parfait' Cra-
bapple

Trident Maple

'Village Green' Zelkova

'Winter King' Hawthorne

Yellow-poplar

Yellowwood

Yoshino Cherry

New in 2010

American Fringetree 'Prodigy'

Chinese Fringetree

'Duraheat' River Birch

'Autumn Brilliance' Serviceberry

Nutall Oak

Wes Kelly

Mountain City Landscape



Volunteer Planting Opportunities



Plantings in February, 2009.



February, 2009



October, 2009

U.S. Conference of Mayors Climate Protection Agreement



Chattanooga Signed on August 2006

GOAL: Reduce Greenhouse
Gas Emissions to
7% below 1990 levels.

1,044 cities have signed on.

In Tennessee:

Chattanooga

Cookeville

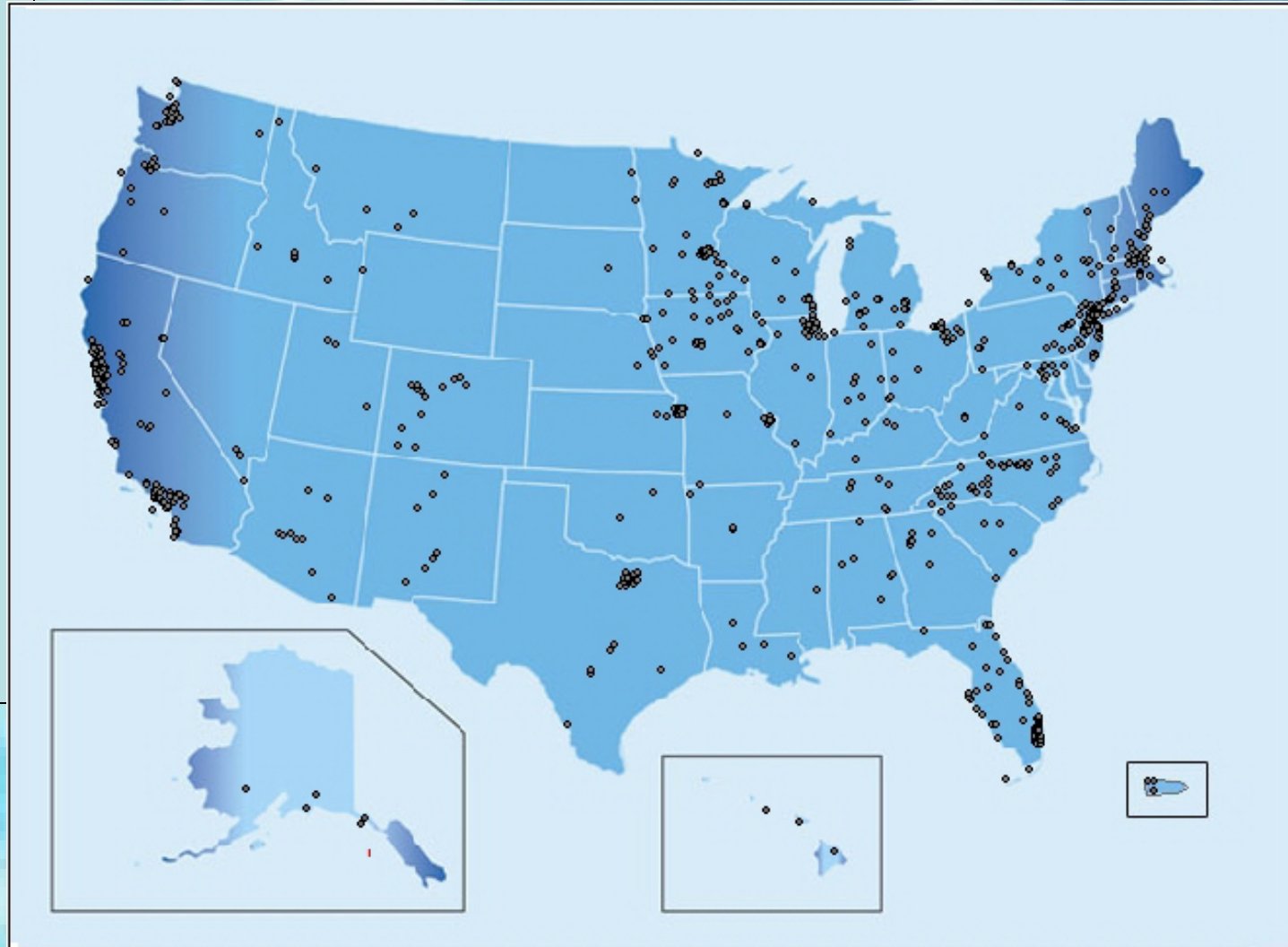
Crossville

Franklin

Manchester

Nashville

Signal Mountain



www.mayors.org/climateprotection

Climate Protection Agreement

Reduce sprawl

Preserve open space

Create walkable communities

**Diversify transportation
options**

**Develop alternative energy
sources**

Promote energy efficiency

Purchase green products

Promote green buildings

**Increase efficiency of
municipal fleets**

Conserve water

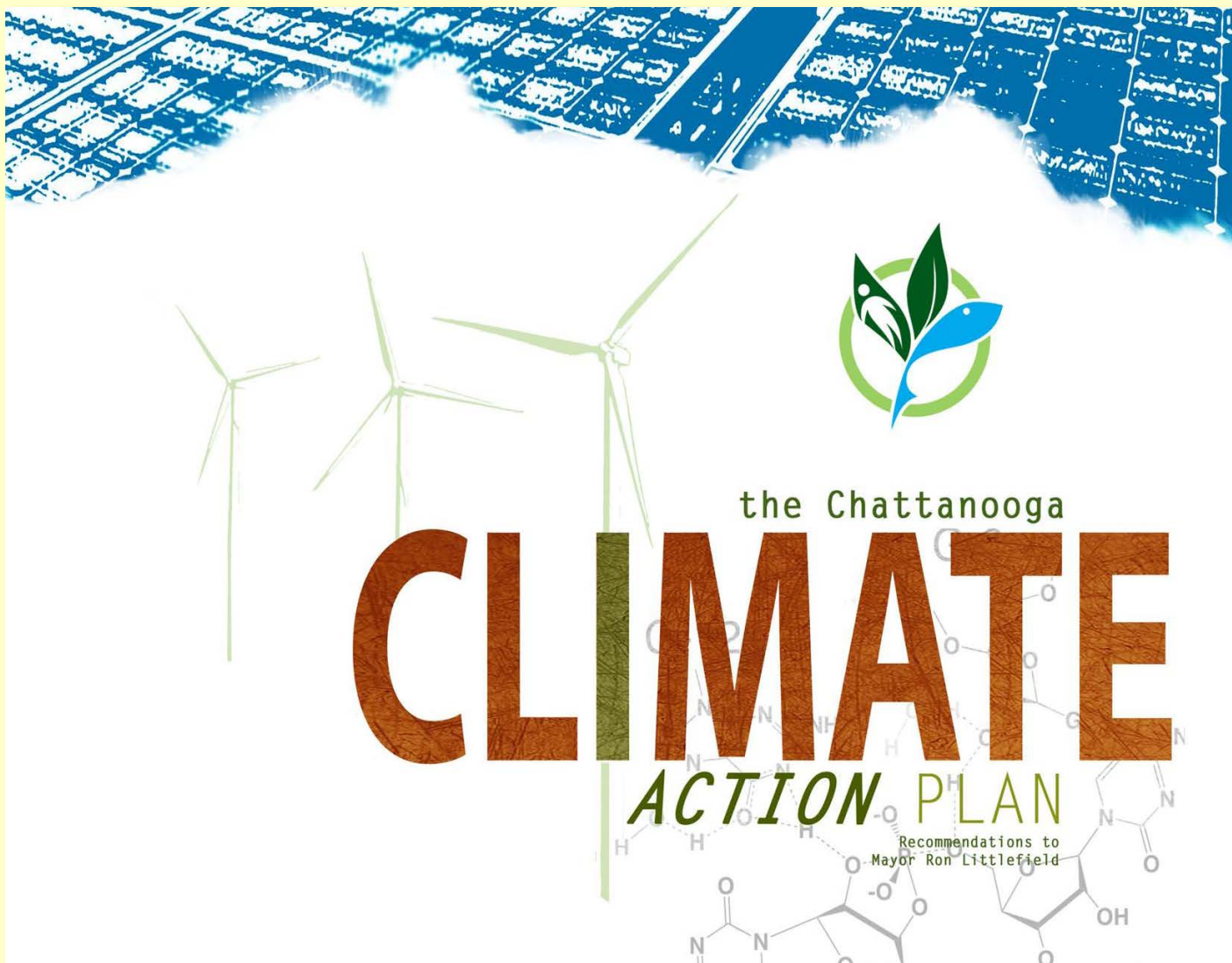
Increase recycling rates

Educate everyone

Plant trees

**Maintain healthy urban forests;
promote tree planting to increase
shading and to absorb CO₂.**





URBAN AND REGIONAL FORESTS

**OBJECTIVE L:** Expand and maintain healthy URBAN and REGIONAL FORESTS.

Potential Action L1: Strive to obtain ideal tree canopy cover in Chattanooga.

Why? Tree plantings have a significant impact on reducing GHGs and cleaning our air (See Figure 35). Increasing the tree canopy and forested areas of the community is an achievable goal. Many practices have been put into place including a working Tree Commission, a City urban forestry program and streetscape improvements in the downtown. However, we have room to improve and should continue the greening of our community by engaging both the private and public sectors in programs such as "Take Root" and urban forestry awards that acknowledge participation. Additional economic benefits are provided as the desirability and attractiveness of the community are enhanced with tree plantings. The following crown cover amounts are recommended by *American Forests* as a minimum for community health:

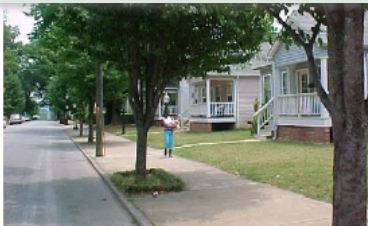
15% in the Downtown
25% in urban residential areas
50% in suburban residential areas
40% overall

How? Expand the Take Root initiative to new areas of the community. Analyze the Landscape Ordinance to increase the number of trees in new developments, renovations and parking lots. This will also require an ecosystems analysis, to be performed by the City, to determine the existing canopy cover and other metrics we can use as benchmarks to track our progress.

Potential Action L2: When new development occurs, encourage the retention of existing high quality trees rather than removing them and replanting with younger trees.

Why? According to a STRATUM Analysis conducted in 2007, Chattanooga's street tree population removes 18,143 metric tons of CO₂ from the atmosphere

Potential Action L1: Strive to obtain ideal tree canopy cover in Chattanooga.



Street trees provide shade, reduce urban heat build up, sequester carbon and increase property values.



Potential Action L2: When new development occurs, encourage the retention of existing high quality trees rather than removing them and replanting with younger ones.



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NATURAL RESOURCES - CLIMATE ACTION PLAN RECOMMENDATIONS



URBAN AND REGIONAL FORESTS



Potential Action L3: Maintain ridges and hillsides as forested areas with limited development.

FIGURE 35: INCREASE URBAN FOREST

| Estimated GHG Reduction (metric tons) | Estimated Cost | Estimated \$ Savings | |
|---------------------------------------|----------------|----------------------|--|
| 63 | \$ | ★ | |

Potential Action M1: Implement changes to Chattanooga's current codes and regulations to address current water quality issues.

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| | | | |
|-----|----------------|---|--|
| 501 | NOT CALCULATED | ★ | |
|-----|----------------|---|--|

per year. The City Forester projects that the entire tree population within the city absorbs 1.81 million metric tons of CO₂ and provides the following approximate benefits: Energy savings - \$128 million; Stormwater - \$297 million; Air quality - \$31 million. It is clear that trees offer many valuable services that can now be quantified.

How? Amend the landscape ordinance to create incentives to retain existing trees rather than removing trees and replanting in new developments. (See Figure 36) Educate and encourage builders and developers to follow the procedures prescribed by the "Tree Protection Best Management Practices (BMPs) for Contractors and Builders" in order to conserve as much high quality tree canopy as reasonably possible, especially when it is technically sound to do so.

Potential Action L3: Maintain ridges and hillsides as forested areas with limited development.

Why? Tree cover on hillsides and ridges contribute to the natural beauty of this region. These green spaces also cool the city, clean the air, and reduce erosion.

How? Analyze regulations addressing clear-cutting and erosion control for these areas to determine their effectiveness.

OBJECTIVE M: Improve current WATER QUALITY and protect WATER QUANTITY.

Potential Action M1: Implement changes to Chattanooga's current codes and regulations to address current water quality issues.

Why? Human activities can result in diminished water quality. Rooftops, paved streets and parking lots lessen the natural ability of the land to absorb stormwater. Secondarily, impervious surfaces receive (from human activities) pollutants such as oils, trash, and contaminated sediments. During storm events, exposed pollutants are directly transported into receiving streams if no structural control is in place for mitigation. Improper construction activities

THE CHATTANOOGA CLIMATE ACTION PLAN



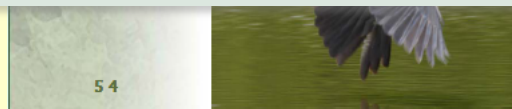


BIODIVERSITY

Potential Action J1: Protect native wildlife and plant species.



Potential Action J2: Initiate an urban ecosystems analysis.



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OBJECTIVE J. Protect our region's natural BIODIVERSITY.

Potential Action J1: Protect native wildlife and plant species.

Why? The City includes a diverse community of biological resources that are sometimes overlooked and underappreciated in the urban environment. Chattanooga is truly blessed with a wonderful blend of mountains, ridges, rivers, creeks, and streams. In addition, Chattanooga's geographic location lends to the mixing of northern and southern flora and fauna. The Southern Appalachian region is well known as possessing one of the most diverse biological populations in the world. Maintaining this diversity provides habitat for native plants and wildlife as well as beauty and interest in natural settings. The promotion of Chattanooga as a livable city, a tourism destination, and a mecca for outdoor activities is greatly enhanced if we protect these biological resources.

How? Incentivize the inclusion of biodiversity assets in the existing pre-construction review of development plans. Developers should be encouraged to retain high quality trees (See Potential Action L-2). Reflection Riding, CALP, and other organizations should be engaged to educate residents on the benefits of utilizing native species where appropriate. (See Figure 32) Local nurseries should be encouraged to promote native species. Develop incentives for the use of bioretention and erosion control systems that incorporate native species instead of rip rap along rivers and streams. Encourage the use of either natural methods or benign herbicides for roadside vegetation control while discouraging the use of harsh chemicals, such as persistent soil sterilants and other herbicides listed as moderately toxic or stronger.

Potential Action J2: Initiate an urban ecosystems analysis.

Why? In its simplest form, an Ecosystems Analysis is the cataloging of natural resources, mostly vegetation, in any prescribed geographic area. In many cases it is possible to assign monetary benefits to the services which plants and trees provide.

Business Recruiting



Mr. Jacoby said environmental sustainability is a core value at Volkswagen, and Chattanooga has moved to make environmental awareness part of the city's fabric.

“Your values complement our own.”

Site Preparation





New trees in Jefferson Heights Park



New street trees in the Highland Park Neighborhood



Why Successful?

Cross disciplinary

Solves a problem

Provides an opportunity for immediate gratification – “I can own it”

Positive for the environment

Initiative was ambitious yet scalable

Grants Received

Benwood - \$100,000

Lyndhurst - \$100,000

Volkswagen - \$126,500 Mitigation monies

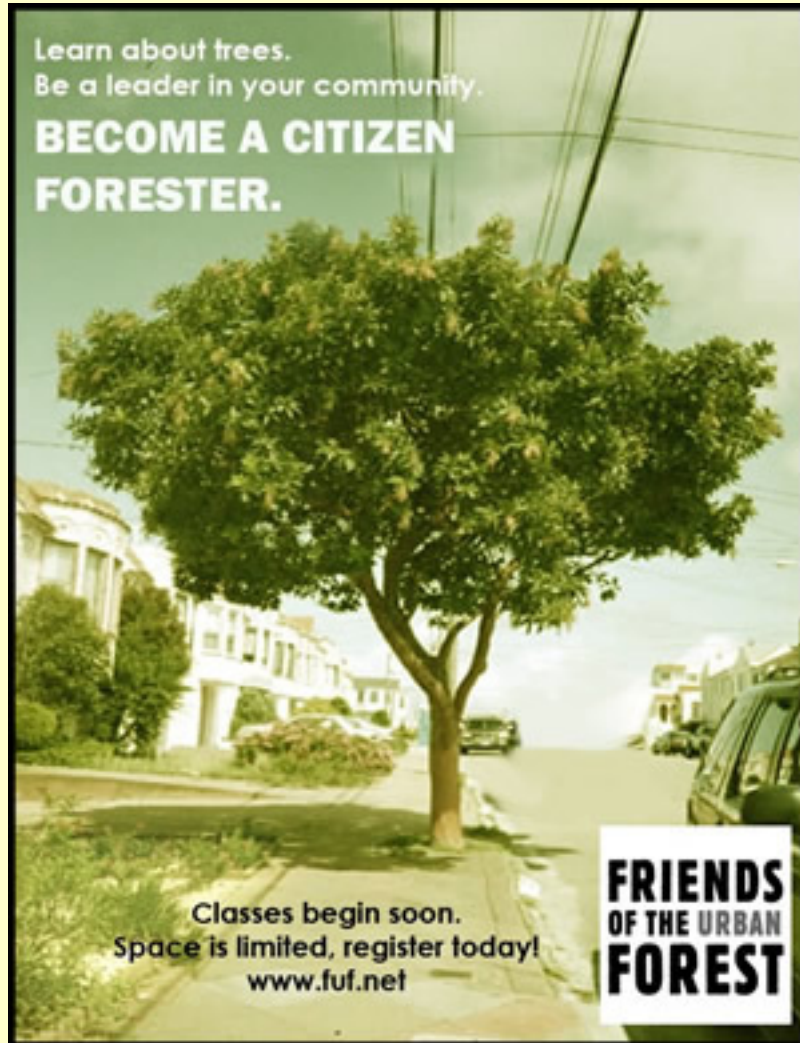
TAEP – \$30,644

General contributions - \$19,537

TOTAL: \$376,681



Future of Take Root



Other Volunteer Opportunities



**Scout Projects
Elm Research Institute**



Citizens Involvement Award Recipient Ms. Keith McCallie

**Tree Commission Annual
Awards Ceremony**