Austin

QUICK FACTS

WHO
Urban Forestry Programs within the city of Austin's Parks and Recreation Department and Planning and Development Review Department

STAFF
25 staff members, including a city arborist, an urban forester, utility line clearance personnel, neighborhood planners, professional foresters, forestry specialists for inspections, an environmental program coordinator and a planting supervisor

KEY FORESTRY TASKS
Private and public tree preservation and removals are regulated and enforced by the city arborist program. Public-tree management is handled by multiple departments and involves planning, planting, maintenance and emergency services.

PARTNERS
Austin Water Utility, Watershed Protection Department, Public Works Department, Austin Energy, Office of Sustainability and TreeFolks

KEY TOPICS

- Energy Conservation and Heat Islands
- Neighborhood Improvement Projects
- Public-Private Partnership
- Public-Public Partnership
- Tree Giveaways
- Tree-care Training Program
- Urban Forest Management Plan

IT gets hot in Texas.

The state's capital, Austin, experienced 90 days at temperatures higher than 100 degrees Fahrenheit in 2011[1], and each summer, the city basks in sunlight 75 percent of the time.[2] With city buildings and paved streets reflecting back this sunshine and heat, temperatures in Austin can be two to nine degrees hotter than in the surrounding countryside — a phenomenon known as an urban heat island. In 2001, Austin's city council recognized this problem in the capital and passed a resolution implementing a Heat Island Containment Policy, which created new initiatives for combating extra heat in the city.[3] Many of these initiatives revolved around trees, some of nature's best temperature regulators.

THE TREE LADY

She may have only served one two-year term on the Austin City Council, but Margret Hofmann's influence on the city of Austin has been felt long after her elected post in the 1970s.

KEY POINT

Austin passed its first tree ordinance in 1983, protecting trees on both public and private property.

Hofmann, a German Jewish immigrant who survived the horrors of World War II, was a devoted grassroots peace advocate and also a staunch supporter of Austin's historic trees. Her commitment to preserving Austin's natural treasures not only earned her the nickname of "Tree Lady," but also led to the creation of Austin's first tree ordinance in the early 1980s.

Hofmann's fight for Austin's trees in the 1970s revolved around recognizing trees for their value. Hofmann once told the *Austin American-Statesman*, "I've always been amazed that we pay so much attention and spend a great deal of money on old houses — historical buildings, often no more than 100 years old — whereas we don't consider trees that are 400, 500, 600 years old of the same importance."[4] Hofmann encouraged Austinites to protect and recognize Austin's historic trees and helped create a registry of 200 of the city's oldest, biggest trees.[5] In 1983, her efforts came to fruition when Austin passed a progressive tree ordinance that would set the basis for protecting the trees for decades to come.

In 2010, Austin passed a new ordinance, the Heritage Tree Ordinance, which offers even more protection for Austin's trees. Unlike many other cities around the country, Austin's tree ordinances don't just protect the public trees, but they also protect trees on private property. Austin's ordinances outline a classification system for trees based on size and species, and generally, the larger a tree is, the more protection it is given. Based on the economic and practical functions these trees provide to the city, the protection is warranted.

"Trees are working for us. They are the hardest working and most efficient of all city workers," says Michael Embesi, a city of Austin arborist. "They continually provide benefits with little to no investment. Trees don't take time off for vacation or sick leave, nor require medical coverage."

"[Trees] are the hardest working and most efficient of all city workers. They continually provide benefits with little to no investment."

MICHAEL EMBESI
Arborist
City of Austin

Austin skyline

VICTOR OVALLE / AUSTIN PARKS AND RECREATION

PIXAJEN

McKinney Falls State Park

A COOLING EFFECT

A 2006 tree canopy analysis conducted by the city's Watershed Protection Department revealed that approximately 32 percent of the city is shaded by trees. As explained by Leah Haynie, Austin's Heat Island program coordinator, trees can reduce summer temperatures through shading, by absorbing solar energy and through evapotranspiration. In addition, it's estimated that Austin's trees have the potential to store up to 100,000 tons of CO_2 per year,[6] which is why departments across Austin are focused on increasing and protecting the city's urban forest.

"Here in Texas, we value our trees immensely for their cooling effects," says Ray Henning, line clearance superintendent for Austin Energy, one of the largest municipal utility services in the country, serving more than 400,000 customers in the greater Austin area.[7]

Therefore, when Austin's city council passed its Urban Heat Island Containment Policy in 2001, a program called NeighborWoods was a key part of its plans. Each year, this program, which began in Austin's Parks and Recreation Department and is now administered through a contract with the nonprofit TreeFolks, distributes between 3,000 and 4,000 trees to Austin Energy customers for planting near the city streets in the right of way. While technically these trees are on city land, Austinites are responsible for maintaining the trees and vegetation growing there, which means that neighborhood support is a key element of the program.

"Upfront outreach is really helpful to having success for the program," says April Rose, executive director of TreeFolks. "Getting someone in front of neighborhood groups talking with them about why it's important to plant street trees and what it can do for energy, ambient air temperature, property values, wildlife, etc., can get the community supportive of the program and excited about the opportunity to receive free street trees."

Beyond NeighborWoods, TreeFolks has a variety of other programs to increase tree canopy, including Sapling Days, which are held each fall. On these select days, approximately 3,000 tree saplings are given away to Austin-area residents for planting on their private property, as much of the available space for expanding the city's urban forest is available on homeowners' land.

KEY POINT

Homeowners' land comprises much of the available space for expanding the city's urban forest.

100,000

tons of CO_2 stored each year by Austin's trees

Zilker Botanical Garden

"The general spirit of volunteerism and the grassroots energy … is part of the Austin culture. People really want to get involved and support urban-tree causes."

APRIL ROSE
Executive Director
TreeFolks

Another way the city expands the tree canopy on private land is through its Austin Community Trees program, a partnership among neighborhoods, Austin's Planning and Development Review Department, Parks and Recreation Department and Austin Energy. Through this program, the city offers 10 species of large shade and small understory trees for planting on private property in neighborhoods with low tree canopies. This program specifically aims to engage neighborhoods in greening the city.

Rose says that one of the most helpful things to urban forest work in the city is "the general spirit of volunteerism and the grassroots energy that is part of the Austin culture. People really want to get involved and support urban-tree causes. We couldn't do all that we do without the thousands of volunteers that we engage with every year and the support of the business community."

Sometimes, though, especially in downtown spaces, trees may not be a feasible solution to urban heat island reduction, so in 2009, the Austin City Council passed a resolution to create a green roof stakeholder group to "explore the feasibility of offering energy and stormwater credits and other incentives, based on performance, to encourage the creation of green roofs in the city."[8]

A year later, in August 2010, the Green Roof Advisory Group submitted a Five-Year Policy Implementation Plan to the City Council[9] and requested an extension — which the council granted[10] — to initiate the implementation of the green roofs plan. Since then, the group has completed a downtown density bonus proposal, developed green roof performance standards and launched the program on the city's website. Now, city staff are writing the code for incorporating performance standards into building practices.[11]

Beyond planting trees and greening roofs, the city also has a Great Streets program, which is designed to improve the quality of downtown streets and sidewalks. Great Streets works with private developers to create streetscapes that go above and beyond the city's minimum requirements. To encourage private developers to improve their streetscape plans, the city offers financial assistance to help offset the costs of streetscape work beyond the city's minimum standards. In addition, when new lane miles are constructed, code requirements identify that one percent of the project's costs must be dedicated to incorporating and caring for trees.

KEY POINT

Beyond neighborhood tree planting programs, Austin is also using green roofs and streetscapes to address its heat island concerns.

Protecting Trees and Educating the Public

All properties (public and private) are subject to the city's tree preservation ordinance, and Austin's various ordinances provide protection on all land within the city of Austin zoning jurisdiction. Regulatory recognition starts with all trees on public property, trees six inches DBH within scenic roadways, trees eight inches DBH on commercial properties and trees 19 inches DBH on single-family home sites. Selective species are considered heritage trees once their trunks reach 24 inches DBH. If a healthy heritage tree has a trunk 30 inches DBH, a public meeting is required to determine the fate of the tree.

A team of 20 employees in varying offices review proposed development projects (e.g. capital improvement, subdivision, commercial, residential projects) and, once approved, inspect to ensure compliance with the tree ordinances. If non-compliance is identified, work is stopped, and/or citations can be issued.

Beyond protecting the city's trees, Austin's various departments — with the help of private partners — also try to engage city residents in urban forestry through a number of programs designed to provide information and education on the benefits trees provide to the city.

Austin Tree of the Year: Since 2007, Austin citizens have had the opportunity to nominate trees that they feel are the most valuable to the city. This annual event has been viewed as a virtual beauty pageant for trees. For more information, visit http://treefolks.org/treeoftheyear.

Grow Green: This interdepartmental program is designed to promote sustainable landscaping practices. Grow Green works with community members to spread multiple messages, including planting native and well-adapted species, protecting and promoting wildlife, fertilizing only when needed, conserving energy and improving air quality. For more information, visit http://www.austintexas.gov/department/grow-green.

Oak Wilt Suppression: Since 1988, the city has been addressing the loss of live oaks and red oaks to oak wilt. Working in partnership with the U.S. Forest Service, the Texas Forest Service and local neighborhood associations, this project educates the public on the issue, locates the disease, provides technical and cost-sharing assistance and monitors treatments for any continued spread.

Urban Forest Grant Program: This program — established to promote conservation and other projects that benefit Austin's urban forest — has $350,000 in funding to help preserve and grow Austin's canopy of trees. Projects eligible for funding include tree planting and preservation, education, public service announcements, disease control and management of invasive species.

Urban Forest Steward: The city has teamed up with TreeFolks to train citizens in all aspects of tree stewardship to sustain and grow Austin's tree canopy. Urban Forest Stewards receive 30 hours of training from arboriculture and forestry professionals. During the training, they learn how trees grow, how to care for them and how to organize urban forestry projects to improve the tree canopy in their neighborhood or park. For more information, visit http://treefolks.org/ufs.

Live oaks on the University of Texas campus

SPEAKING FOR THE TREES

Austin's tree ordinances and activities are driven by Austinites according to Austin City Council Aide Shannon Halley. For more than 30 years, the city's Urban Forestry Board, a city council-appointed group, has been meeting monthly to study, investigate, plan, advise, report and recommend any action, program, plan or legislation that the board determines advisable. Citizen involvement extends beyond the board, though.

"Many times, the city's departments have different goals. We're speaking more with one voice now."

KEITH MARS
Environmental Program Coordinator
City of Austin

In 2006, a neighborhood was concerned about the number of trees being trimmed in their community and asked for the Austin City Council to enact a tree-trimming moratorium to evaluate the issue. The council complied, and that year, a tree task force was formed to look into Austin's urban canopy practices. This task force proposed a number of broad strategies for improving the city's urban canopy practices, which included providing the framework for updating Austin's tree ordinances to include heritage trees. The task force also recommended the formation of an interdepartmental tree group that would meet once a month, a recommendation that would prove beneficial to the city's urban forest.

"Many times, the city's departments have different goals," says Keith Mars, an environmental program coordinator for the City of Austin. "We're speaking more with one voice now. We use these meetings to discuss conflicts and make decisions so the city can minimize any confusion for its citizens regarding tree issues."

KEY POINT

Austin's new urban forest plan will address the specific ecologies and land-use needs of its two distinct geographic areas.

Because many municipal operations and social requirements lead to encroachment into areas needed for to sustain trees, a transparent, scientific approach is needed, according to members of the city's Urban Forestry Program, to address:

- Maximizing soil volumes for trees within rights of way and within proposed development projects;
- Quantifying the value of existing vegetation, as opposed to removing it and planting new vegetation, and receiving incentives for preserving these areas;
- Determining the potential impacts from using non-native nursery stock;
- Minimizing tree impacts from utility conflicts;
- Developing a GIS database and statistical analysis from development plans and tree mortality permits; and,
- Assessing potential population decline of native species, such as post oak and Texas madrone.

By working collaboratively — between departments and with the arborist, development and neighborhood communities — Austin hopes to create a winning formula that maximizes trees and their benefits throughout the city. With approximately 6,000 trees being planted each year through the city's Heat Island program, the city's forestry team is eagerly awaiting an updated canopy report and tree inventory that will be available this year to see how much the needle has moved in recent years, especially considering Texas' recent troubles with drought and Austin's continued development.

While this new report will be a beneficial snapshot of the city's current canopy, Arborist Embesi reveals that the city is currently developing a plan, the Comprehensive Urban Forest Plan, to address the city's canopy. This plan would dive deeper than just the number of trees and would focus on plans that take into account Austin's two distinct geographic areas — one a prairie and one a plateau — with their specific ecologies and land-use needs. This plan will address trees within all of its sections: land use and transportation, housing and neighborhoods, conservation and environment, city facilities and services, and

PAUL LOWRY

Lady Bird Lake

more. Getting the right tree in the right place is tantamount to increasing the benefits the trees provide while also saving the city money.

Austin Energy is very aware of the money that can be saved through constructive planning of the city's urban forest. When a tree has to be removed because of issues related to the utility line, the energy company gives the homeowner a new tree — free of charge — that is utility compatible, meaning that when the tree is mature, it will still be below the property's utility lines. Therefore, homeowners can take care of the tree, while Austin Energy focuses its green activities elsewhere.

Henning relates how important it is to educate homeowners on the right types of trees to plant in the right location. "If we could get the right tree in the right place and didn't have to spend money pruning trees away from power lines, we could spend that money for a lot better uses like improving the urban forest," he says. "We can afford to get the right trees in the right place. We need to look at the long-term solutions."

While the Comprehensive Urban Forest Plan underway is essential to providing some of the long-term solutions, like many cities around the country, Austin also finds itself with limited staff and resources to complete the work required to maintain and enhance its urban forest. Twenty five Parks and Recreation Department and Planning and Development Review Department Urban Forestry Programs employees are responsible for 300,000 public trees in Austin, plus all of the public programs designed to engage Austin's citizens in helping care for and protect the city's greenspaces. It's a daunting task, but one that Austin is committed to tackling.

One of the ways the city hopes to improve the urban canopy in the future is by using greenspaces to increase alternative means of transportation, especially biking and walking paths, according to Ana González, a forester with the city's Parks and Recreation Department. Studies have shown that well-vegetated areas encourage people to get outside and enjoy their surroundings. By strategically planting trees to enhance these corridors, fitness opportunities will be up, air pollution from cars will be down and Austinites will be healthier. A win-win-win proposition.

And beyond their practical applications, trees also provide another much needed asset to any city: beauty. As City Council Aide Halley relates, a University of Texas-Austin president once asked, "Would you rather your children looked at bricks or branches?"

SPECIAL THANKS TO:

Michael Embesi, city arborist, City of Austin Planning & Development Review Department

Ana González, forester, City of Austin Parks & Recreation Department

Shannon Halley, policy aide, Austin City Council

Leah Haynie, program coordinator, City of Austin Office of Sustainability

Ray Henning, line clearance superintendent, Austin Energy

Keith Mars, environmental program coordinator, City of Austin Planning & Development Review Department

April Rose, executive director, TreeFolks

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