

# URBAN FOREST MANAGEMENT PLAN

*January 2007*

## Executive Summary

## Table of Contents

Purpose Statement  
Introduction  
Austin's Urban Forest  
Tree Care  
Policies and Regulations  
Contact Information  
Definitions and Acronyms  
Index  
References and Acknowledgments  
Limitation, Suggestions, Deficiencies, Needs  
Appendices

## Purpose Statement

Resource and guidance document

The purpose of the Urban Forest Management Plan (UFMP) is to address long-term goals and strategic planning related to tree planting, removal, pruning, and maintenance needs of the community trees in Valley Center, thus encouraging the sustainability of the urban forest. The scope of the UFMP includes street trees, parks, right of ways and other public lands, but does not include private lands other than what

is covered by city ordinances relating to trees that constitute a hazard to life and or property or harbor insects and disease which constitute a potential threat to other trees within the city.

The American Forestry Association estimates that the economic value of a community tree is twenty-five times greater than the value of a tree grown strictly for lumber. This value is derived from the multitude of benefits an urban tree bestows on individual residents, the community, and the larger ecosystem.

A few of the tangible benefits trees provide are:

- Produce oxygen and filter airborne particulates
- Provide shade and help cool residences, reducing energy consumption and costs
- Help reduce runoff and storm water concerns
- Buffer noise
- Moderate the wind

Trees also help impart a distinctive character to a community and neighborhoods, enrich the aesthetic experience of a community, soften and screen urban development, enhance people's sense of connection to nature, history, civic pride and involvement.

The January 2005 ice storm highlighted the fact that Valley Center's Street Tree population is primarily a very mature monoculture of Siberian Elm. The UFMP provides a means to promote a healthier urban forest, improve safety, and reduce risk through planting the correct type of trees in the proper places.

## Introduction

Austin's urban forest is a thriving and sustainable mix of tree species and ages that creates a contiguous and healthy ecosystem that is valued and cared for by the City and all of its citizens as an essential environmental, economic, and community asset.

## Austin's Urban Forest

### Area History

The first humans to inhabit what is now Travis County probably arrived as the last Ice Age was drawing to a close more than 11,000 years ago. Hundreds of archeological sites throughout the region reflect a constant human presence since prehistoric times.

More recently, nomadic tribes of Comanche, Lipan Apache, Tonkawa, and Jumano Indians inhabited or roamed through the area. Records of early European settlers indicate that there was frequent contact between the Europeans and Native Americans.

Spanish explorers and missionaries were the first Europeans to have contact with the Texas Indians in the area -- as early as the mid-1700s. This Hispanic legacy is reflected in many Travis County place names. The first Anglo settlement came in 1837, after Texas won its independence from Mexico. Travis County was created in 1839, the same year Austin became the Texas capital.

### **Location**

Travis County (K-16) is in Central Texas, 150 miles inland from the Gulf of Mexico. Austin, the state capital and county seat, is at the intersection of Interstate Highway 35 and U.S. highways 183 and 290, 100 miles southwest of Waco and seventy-five miles northeast of San Antonio. The geographical center of the county lies two miles northwest of downtown Austin at 30°18' north latitude and 97°45' west longitude. Travis County comprises 989 square miles on the eastern edge of the Edwards Plateau<sup>qv</sup> and is divided by the Balcones Escarpment.<sup>qv</sup> Elevations in Travis County range from 400 to 1,300 feet above sea level.

### **Biotic & Abiotic Conditions**

The land west of the escarpment is more arid than that to the east, and the vegetation varies accordingly, ranging from juniper, mesquite,<sup>qv</sup> and scrub brush to oak, cottonwood, redbud, and pecan trees. Between 21 and 30 percent of the land is considered prime farmland. The Colorado River, which bisects the county from northwest to southeast, flows from the Hill Country<sup>qv</sup> onto the Coastal Plain<sup>qv</sup> and provides drainage for the entire area.

Three distinct ecological regions, often referred to as bioregions, converge in Travis County. The Edwards Plateau bioregion to the west of the Balcones fault line is honeycombed by caves and aquifers and covered by limestone and granite, providing homes to dozens of rare and endangered plant and animal species. The area is a gateway to the unique combination of the Hill Country and the Highland Lake. Abundant wildflowers and the remnants of the tallgrass prairie with its deep, rich soil typify the Blackland Prairies bioregion to the east. The Colorado River flows through these prairielands. The Crosstimbers and Prairies bioregion, the rolling, wooded savanna that extends north beyond the Texas-Oklahoma border, reaches its southern-most influence in northern Travis County. Named for the belts of blackjack and post oak that crossed strips of prairies, this region is home to plants and animals whose ranges stretch north into the Great Plains.

Wildlife in the area includes deer, coyote, bobcat, squirrel, beaver, opossum, ring-tailed cat, badger, fox, raccoon, and skunk, as well as a variety of birds, fish, and reptiles. Among the county's mineral resources are dolomite, limestone, industrial sand, gravel, oil, and gas. The climate is subtropical, with an average low temperature in January of 38° F and an average high in July of 96°. The average yearly rainfall is thirty-two inches, and the growing season is 270 days.

### **Canopy**

#### **List programs/departments**

A.F. 1992 study

# Tree Care

## Pruning standards

USDA Forest Service states that the objective of pruning is to produce strong, healthy, attractive plants. This objective can be achieved by understanding how, when and why to prune, and by following a few simple principles. Pruning cuts should be made so that only branch tissue is removed and stem tissue is not damaged. At the point where the branch attaches to the stem, branch and stem tissues remain separate, but are contiguous. If only branch tissues are cut when pruning, the stem tissues of the tree will probably not become decayed, and the wound will seal more effectively.

## Pruning Young Shade Trees for Strength and Form (from TFS)

A new tree in your landscape holds the promise of great things to come: cool shade on a hot afternoon, branches for children (and adults) to climb, rustling leaves, and maybe a splash of color in the fall. Like any youngster, your tree will need some discipline 'm order to live a long, productive life. You can think of careful pruning as a way of training your young tree to grow strong and healthy.

### Recently Planted Trees

Good branch structure actually starts in the nursery. When you select your tree, try to find one with a strong, dominant trunk and evenly spaced branches. Double leaders and low, slingshot crotches can create problems down the road.

When you plant a new tree, you shouldn't have to do any corrective pruning the first year. Plan to start your pruning regimen before@ the second growing season. Give your tree a little pruning help every year during the first five or six years after it has been planted. Then it will be well on its way to having a strong branch structure, and you can walk away from it for another five or ten years.

### What To Prune

1. Double Leaders: Try to maintain a dominant trunk for at least six to eight feet without a major fork. If the trunk divides into two or more relatively equal stems, favor one strong stem and remove the others. In some cases, you may need to do this gradually over several years. Cut one stem back to a lateral branch and let the other fill-out and become dominant. After a year or two, remove the less-dominant stem altogether. The rule of thumb is to prune-out no more than one third of the crown m a year, but on young trees you may be able to push the limit a little higher to remove a double leader.

2. Rubbing Branches: Eliminate branches that arc rubbing or will soon rub against another branch. Frequently, one branch will grow back toward the interior of the crown and cross several other branches. Removing this one branch may solve several problems.

3. Crowding: Give each branch room to grow with minimal competition for sunlight. Your goal is to have major lateral branches evenly spaced eight to ten inches apart along the trunk.

4. Narrow Branch Angles: Sometimes two branches will form a narrow, v-shaped crotch. As the two stems grow thicker each year, bark may be trapped between the two stems, preventing them from forming a strong union. This is called included bark. Branches with included bark at the point of attachment are more susceptible to failure under load from wind or ice. Occasionally, otherwise healthy limbs on mature shade

trees will fail on a clear 3 calm day -- with potentially tragic results - because of included bark. If you see bark becoming pinched between a branch and the trunk, remove the branch before it grows large enough to become a hazard.

5. Sprouts and Suckers: Fast-growing sprouts that shoot out of the trunk or main limbs have a weak point of attachment. If they are allowed to reach a large size, they may break during a storm and cause serious damage to the tree.

6. Temporary branches: While the tree is young, it may have small lateral branches along the main trunk. You can leave them on the tree for the first few years because they will help it develop a thicker trunk. Starting at the bottom, remove one or two of them each year until you reach the height you want the first permanent limb.

### **The Proper Pruning Cut**

At the base of each branch, you will see a slight swelling where it joins the trunk or main limb -- this is called the branch collar. The ideal pruning cut angles away from the main stem just beyond the branch collar. The finished cut will leave a little bump on the main stem, but not a pronounced stub.

When cutting a large branch with a saw, the weight of the branch may cause it to sag and peel bark down the side of the tree before the cut can be finished. Use the three-step method when removing a large limb. Make a cut on the bottom side of the branch, about one third of the way through (A). Make a second cut on the top of the branch an inch or so beyond the undercut (B). This will remove most of the weight of the limb without peeling bark. Finish the cut by removing the stub that is left (C).

Pruning paint is necessary only when pruning oaks in a community where oak wilt disease is a problem.

## **Fertilization**

### **Fertilizer Recommendations for the Austin Area**

Nitrogen, one of the three nutrients found in fertilizer, can travel quickly through soil to pollute our groundwater. The City's Watershed Protection and Development Review Department commissioned the study to find out which fertilizers would be least likely to pollute and still satisfy the desire for an attractive lawn. The Texas A&M conducted study compared nine different fertilizers and found that the certified organic or other natural fertilizers out-performed the synthetic ones for both appearance and pollution prevention.

Horticulturists, and soil and water quality scientists considered the new data along with other studies, scientific data and practical experience to revise the recommendations that have been promoted for the last twenty years. These new recommendations reduce fertilizer use by at least 75%!

- Test your soil - you can't know what to add to your soil unless you know what's missing
- Don't Bag It! - think of mowing as fertilizing. Your lawn clippings return 60% of the nitrogen, and 100% of the phosphorous and potassium (fertilizer ingredients) back to the soil. Think how much better it is for the landfill as well.
- Choose carefully -- certified organic or labeled, natural fertilizer is preferred for a healthier lawn and better water quality. (If using inorganic, apply only half as much, twice as often, to prevent the fertilizer from running off or leaching to our groundwater.)
- 

If your soil test                      Use:

shows:

Low to Very Low Nitrogen in Soil	½ lb. nitrogen/1,000 square feet 2 times/year
-------------------------------------	--

Moderate Nitrogen	½ lb. nitrogen/1,000 square feet 1 time/year
-------------------	---

High to Very High Nitrogen	DO NOT FERTILIZE
-------------------------------	------------------

- If you must fertilize without a soil test, never apply more than a moderate nitrogen rate or fertilize more than once a year.
- Never fertilize before a rain - otherwise the fertilizer can run off and fertilize our creeks, not your lawn

## Watering

If we experience significantly dry conditions citizens of Austin and surrounding areas are advised to water desirable young trees and valuable landscape plants. Problems occur when plants are subject to extended periods of low soil moisture. Trees that are young, those on shallow soils, and plants under construction stress will be at potential risk of damage unless supplemental watering is accomplished. An intense downpour quickly runs off and small volume rain events will not necessarily end the need to water.

The practical approach for watering trees is to locate an unrestricted hose end six feet from the base of a medium sized tree. Trickle water at the rate of one gallon per minute. Water small plants for 1-2 hours, graduating to a duration of 12 hours for large trees, which should be watered out to the dripline area. Move the hose to different sides of the plant every few hours. Additional measures that are beneficial to drought stressed plants include:

- Apply compost into or over the plants' root zone;
- Avoid the use of fertilizers during hot and dry conditions;
- Spread one to two inches of mulch material within the root zone; and,
- Consider replacing poor performing plants with native trees and shrubs.

## Planting

### What to Plant?

Obtain plants from a source which has plant material grown from your immediate area. Attempt to locate trees that have evolved locally and are being grown in native soils (versus artificial soil). Be aware of buying trees from retailers that do not grow their own stock. It is possible to purchase trees that appear to be native to Austin but are not adapted to the area. For example, a tree can be grown from live oak acorns collected in Florida, germinated and grown for two years in Tennessee, shipped to East Texas, grown for two years and wholesaled across the state. These trees are not adapted to central Texas conditions and are likely destined to perform poorly. Also strive to obtain plants that have a good root-to-shoot ratio, meaning that the top growth does not appear to be out of balance with the root ball size.

**When to Plant?**

Plant trees during late October through November (in decreasing preference: December, September, January and February). Late October and November are best because conditions are such that optimal root growth and establishment can occur. Plants that are more established when hot weather arrives survive, thrive, and need less water. Do not plant later than January unless you can provide extensive supplemental waterings. It is not recommended to plant trees in June, July or August.

**Where to Plant?**

Evaluate soils for appropriateness of future plantings. Plant where the soil type and moisture amount will properly match the needs of the intended plant. Do not plant if the soil and the species requirements fail to match. Make adjustments as necessary by altering species selection or by digging "test holes" until a soil/plant match is achieved. Dig "test holes" in areas where trees are anticipated, evaluate soils for appropriateness of planned species. Make adjustments as necessary by altering species selection. Digging more test holes can assist with obtaining a better match for the proposed planting. "Test holes" are generally twelve inches deep; observe the soil texture, color, depth, and amount of organic matter. At this point species selection can be decided.

When planting trees analyze the site and evaluate what is to be accomplished. Take a tree inventory (avoid attempting to save trees that are in poor condition), notice drainage patterns, and incorporate the location of buildings and utilities. Next prioritize areas that need to be protected or enhanced by developing a plan. Remember to make objectives to include long-term plans. It is suggested to start with projects that are easily accomplished, then refine your efforts from information gained throughout this process.

**How to Plant?**

Consider the following items when embarking on tree planting: contemplate desired objectives, dig "test holes," evaluate your watering capability, and secure tree protection materials. Commonly trees are planted too deeply. Trees should be planted so that the top of the "true root ball" is no lower in the ground than the elevation of the existing soil line. It is important to remember that tree roots are located in the top eighteen inches of soil. Roots planted too deeply will actually suffocate, atrophy and die from lack of oxygen. This typically results in poor top growth or even plant death.

The "planting hole" is ideally square and has a bottom that is no deeper than the height of the "true root ball." Test holes can be enlarged to be planting holes. Trees should be planted as soon as the holes are dug. Don't use potting soil in the planting hole. The soil that came out of the hole should be used (avoid using soil amendments). Remove the tree from the container. Gently loosen the roots with a pencil. Dust off extraneous material from the top of the root ball. Place tree in hole and check for depth. Using well-tamped soil or a rock, adjust root ball height so that top of ball is not lower than the surrounding soil line. Do not plant trees on loose soil that will gradually subside over time leaving you with a "buried tree." Using the existing soil, back-fill the hole gently tamping the soil into place.

**[Tree Planting Diagram](#)****After Planting**

The planting hole should be watered when half of the backfill soil has been placed in the hole and again when the hole is completely filled in. Use approximately four gallons each time. After planting the trees will require two years to become established. Proper tree health will include timely application of water during this time. This will ensure that new plantings are not forced to endure long periods of low soil moisture. Additionally applying a soil loss preventative blanket, such as two inches of mulch, can assist with tree health. This blanket provides a mulch layer that impedes moisture loss and protects the soil from direct sunlight. It is best to prevent the mulch from touching the tree trunk.

New plantings can be top dressed with fertilizer provided that you use a high quality, slow release, balanced fertilizer. Do not use standard agricultural fertilizers or any inexpensive garden fertilizer. It is much better not using any fertilizer as opposed to a cheap fertilizer.

Mulching is absolutely necessary. Any material that will provide the attributes of native mulch is acceptable. Consider cutting native grasses, usually found in the vicinity, and lay them around the tree. Exclude from placing mulch against the trunk. Tree health is dependant that this area (root collar) remains untouched.

Where deer habitat, or rural, conditions exist install protective fencing as soon the tree is planted. It is better to plant and protect only three trees in a day than to leave trees unprotected overnight. Temporary protection can be established by placing fallen tree branches and brush around and on top of saplings. This method can be used successfully for permanent protection of new plantings in open range situations provided that the covering is dense enough and generally with a 12-18 month re-application of brush over the tree. Secure protection devices (i.e. fencing materials, posts). Locate protection devices near planting sites. Fencing material should be able to keep deer and cattle heads from passing through the fence. Also existing cedar trees can be trimmed and cut to form posts for "protectors."

# Policies and Regulations

## Tree Care Overview

### Tree Maintenance

The City of Austin code of ordinances sets standards for vegetation management, such as street clearance and intersection clearance. The City is responsible for maintaining all trees that grow on public property to acceptable levels of safety and code standards. In addition, a cycle pruning program will soon begin that will place a priority on correctly pruning all city trees in a proactive effort to improve the overall health of our urban forest. Austin Energy cycle prunes trees that grow within the utility service distribution areas for line clearance.

The response to trimming and removal of unsafe and dead trees on the public right of way (ROW) and parkland is a priority in Austin. Eliminating deadwood, addressing low limbs and correctly pruning young trees are equally important in minimizing liability and maintaining a healthy, attractive urban forest. Currently, the majority of tree work is brought to the City's attention via citizen requests through 311, the City-Wide Call Center. The Parks and Recreation Department responds to citizen concerns about tree related problems in parks, preserves, and public rights of way. PARD administers the cycle pruning program for right of way trees. This program places a priority on correctly pruning all city street trees. Public Works Department responds to tree related problems in alleys, tree limbs causing obstructions of traffic signals, and also removes debris from streets, alleys, and sidewalks. Solid Waste Services Code Compliance is responsible for notifying property owners of violations caused by trees growing on private property. Austin Energy administers a cycle pruning program for electric utility line clearance that was created to minimize service problems caused by trees. Additionally, Austin Energy responds to "trouble calls" on a request basis. Watershed Protection and Development Review works with trees in relation to erosion problems on stream banks, as well as trees growing on property overseen by the department.

### Tree Planting

The City of Austin has multiple programs dedicated to planting trees. The Parks and Recreation Department plants trees in parks, medians, and on the public right of way. Austin Energy is responsible for funding tree planting programs, such as NeighborWoods. AE also gives citizens trees to plant as mitigation for tree removal due to utility line clearance needs. The Watershed Protection and Development Review Department requires trees to be planted when development impacts cause existing trees to be removed. WPDR also manages the Urban Forest Replenishment Fund.

The Parks and Recreation tree planting program is funded by the Planting for the Future fund. Locations for tree plantings are primarily chosen based on neighborhood requests. The planting schedule is laid out during the summer prior to the planting season. The planting season for our area is October through March. PARD works closely with TreeFolks, a local nonprofit, to coordinate the tree plantings and the volunteers who help plant the trees. PARD maintains all newly planted trees on a two year watering schedule, keeps the young trees mulched, and train-prunes on the third year post planting.

Austin Energy provides funds for another popular tree planting program: NeighborWoods. The NeighborWoods program contract is administered by TreeFolks. This program provides citizens with free trees to be planted in the public right of way adjacent to their property, and in return the citizens agree to plant, water, and maintain the trees for two years. This program is designed to help reduce the Urban Heat Island Effect by cooling their neighborhoods. Every property offered a tree is evaluated in order to determine the proper placement of the tree, as well as the proper species of tree offered for the environment.

(i.e. if utility lines are present, only small growing trees will be offered). Austin Energy is also responsible for providing funding for a pilot tree planting program. Austin Community Trees is a tree planting program that is organized by the Neighborhood Planning and Zoning Department. This program focuses on neighborhoods that have completed a comprehensive Neighborhood Plan and also have a low overall tree canopy cover. Austin Community Trees depends on volunteers from the neighborhood to help promote and run the program. Austin Energy's cycle pruning program for utility line clearance provides citizens with replacement trees in cases when it is necessary to remove entire trees to achieve proper line clearance. AE's "Right Tree in the Right Place" program is emphasized through their mitigation efforts by offering replacement trees that are utility line compatible.

The City of Austin Urban Heat Island Initiative is an on-going project that has raised awareness about the need for increased canopy cover in the urban environment. This project is multifaceted and includes the Great Streets Tree planting initiatives, and increased requirements for private development shade tree plantings. The Green Garden program is another comprehensive city program, housed by Watershed Protection and Development Review. This program is a collaboration of five City departments, and has established guidelines to create attractive, efficient, and environmental friendly landscapes. The City Arborists office is also located in WPDR. The City Arborist assists with development and tree preservation issues. The tree preservation ordinance places great emphasis on tree preservation. However, some development sites are unable to save existing trees and replacement trees are necessary. WPDR requires mitigation trees to be planted based on site specific details, such as the number of inches of tree trunk removed and species of tree removed. WPDR also oversees the Urban Forest Replenishment Fund. This fund was created to mitigate the impact of tree removals by enhancing the urban forest through projects associated with tree planting, education, public service announcements, award programs, disease control, inventorying, and other related efforts. The source of funds collected may include donations, payment for tree preservation violations/noncompliance, and mitigation for tree replacements within a proposed development.

Emergency debris removal is handled by multiple city departments. Parks and Recreation is responsible for all trees that fall into streets during regular working hours, at night, and on the weekends. When a tree falls from public property (i.e. right of way) into a street, PARD will clear the street and remove all related brush. When a tree falls from private property into a street, PARD will clear the street and all related brush is placed on the tree owner's property. Public Works responds when a tree limb completely breaks out of a tree and is in the middle of the street. Austin Energy responds to all emergency conflicts involving trees and utility lines. After storm events, Solid Waste Services, Parks and Recreation, Public Works, Watershed Protection, and Austin Energy work to clear vegetation obstructions.

## **PARD Urban Forestry Program Work Plan**

The Urban Forestry Program of the Austin Parks and Recreation Department (PARD) is responsible for the maintaining, removing and planting trees growing on City of Austin property. The Program's goal is to provide maximum customer satisfaction with their services and to maintain public trees in a safe and healthy condition within the resources allocated to the program. PARD is responsible for over 2,000 miles of right-of-way (ROW) and over 16,800 acres of park land. All work is done on a customer request basis. The demand for services increases in the spring and early summer and after large storms. Currently no routine tree maintenance is done on public ROW trees.

### **Work Order System**

The Parks and Recreation Departments tracks and issues all work orders utilizing an internal Computer Maintenance Management System (CMMS).

There are 2 types of work orders issued. The first is scheduled work orders that the CMMS automatically issues on a specified timeframe. Examples of such are: mowing and daily servicing of parks. The second

type is a demand work request. These are requests for a specific action, such as a removing a downed tree. All demand requests are processed through the Work Order Team. Requests are received, determined if a duplicated request or valid request, assigned a priority and forwarded to the appropriate supervisor. The priorities are 1-4, with a 1 being an emergency that dictates an immediate response and 4 a request that is scheduled and given a 30 day due date. (If the supervisor is unable to complete the work within the allotted time frame an extension is requested on the work order. The Work order team will change the due date within the system and reissue the work order.) All Forestry work orders are demand.

Forestry receives demand work orders from 2 areas. The first are requests from PARD employees, these are requests for assistance for a tree issue within the park system. When such a request comes in the inspector will first inspect the tree to determine the proper course of action (i.e. pruning or removal). If the issue is an emergency, the Maintenance crew will be dispatched immediately.

The second requests for work are from citizens. These requests come in from the City's 311 Customer Service Request System (CSR), this is a 24/7 service request system. Request from the 311 System are turned into work orders utilizing the CMMS. An inspector will make a site visit to determine a course of action based "Obstruction of ROW" SOPS. If the issue is an emergency, the Maintenance crew will be dispatched immediately.

All completed work orders, be they completed by the inspectors or the Maintenance crew, will be turned into the Work Order team for closing within the CMMS. If the work order has a CSR number attached it will also be closed with the CSR system.

#### ROW Trees Low Limbs

The City of Austin is responsible by ordinance for the removal of low limbs over sidewalks for pedestrians and over streets for vehicular traffic. If the tree base is growing on the area between the owner's property line and the edge of the pavement, the City is responsible for low limbs over the sidewalk and the street. When requests for tree issues are made an inspector will make a site visit to determine a course of action based "Obstruction of ROW" SOPS. If the tree is on private property, the resident is responsible for trimming the limb(s) to 14 feet tall at the curb. Response time for removal of low limbs on public trees is 30 days.

#### Blind Corner Clearance

PARD Forestry is responsible by City ordinance to remove hazardous visual obstructions at intersections by clearing brush and other vegetation. All work is done on a request basis and the average response time is five (5) working days. After PARD receives a request for a blind corner, an inspector will make a site visit to determine a course of action based "Obstruction of ROW" SOPS.

#### Tree Removal

When PARD receives a request to remove trees from the ROW or from park land, the Forester will inspect the tree. The determination will be made as to the tree's health. If the tree is considered a threat to persons and property it is promptly removed. A tree removal permit is secured from the City Arborist if the tree is over 19" in diameter at 4.5 feet off the ground.

#### Hauling Woody Debris From Streets and Parks

Once woody debris or brush has been generated by tree trimming or tree removal, either on streets or parks, Forestry will remove the debris and haul it to the landfill to be ground up by SWS for Dillo dirt. Large logs are for the annual Yule Fest fire at Zilker Park.

#### Park Trees

Pruning is done on park trees on a request basis only. Districts are to follow Park Tree Maintenance SOP.

## Public Tree Planting

PARD Forestry also has a public Tree planting program which plants between 500-1000 trees a year in parks, roadway medians and ROW. Plantings are normally done on Saturdays with the use of volunteers to help offset the additional man-hours. PARD works with a local non-profit, TreeFolks, to organize the volunteers. The tree planting season runs from October thru the end of March. Once an area has been planted, trees are watered once a week for 2 years to get them established by PARD Forestry Technicians. The areas that are planted are usually at the request of neighborhood associations.

## Austin Energy Tree Trimming

Austin Energy has a comprehensive tree trimming program. We trim and remove tree limbs away from power lines and electrical equipment. By trimming, we reduce outages and improve the overall reliability of the electric grid.

### Tree Trimming Improves Reliability

Tree limbs coming into contact with power lines during storms are the major cause of outages in Austin. Outages drop by 60% or more in neighborhoods with trimmed trees.

### Tree Trimming Is A Safety Issue

The electric utility standard for tree trimming is a four-year maintenance cycle. This means the clearance obtained from power lines through trimming and removals should last at least four years.

State law and the National Electrical Safety Code require that we maintain established minimum clearance distances. Tree limbs touching power lines pose a danger to the public, especially children, and utility workers.

By being cooperative with tree trimming needs, property owners play a direct role in reducing the number of outages they and their neighbors will experience. In the end, cooperation results in improved overall safety and reliability of the electric grid. If you have any questions concerning your Austin Energy Vegetation Work Plan, please call the number located at the bottom of the work plan.

## Environmental Regulations

### City of Austin Development and Tree Preservation

In 1983 the City Council adopted one of the most progressive Tree Ordinances in the country. [The Tree and Natural Area Protection Code](#) is based on the fundamental precepts of sound urban forest management; diversification, preservation, and replenishment. Proposed developments are reviewed to assure that a final product is achieved which results in a diversified and sustainable urban forest. [City requirements](#) are designed to achieve a balance of re-forestation and preservation, frequently emphasizing one of the two elements to achieve the best long-term benefit for the community. Trees 8 inches in diameter and larger are scrutinized for preservation potential, trees 19 inches and larger are classified as "protected sized trees" which receive enhanced evaluation for preservation. Austin-ites recognize that trees are valuable in economic, aesthetic, and environmental sustainability of the region.

### Tree and Natural Area Preservation Ordinance

[The Tree and Natural Area Preservation code](#) is designed to assure that trees are an integral part of new development projects. Proposed development projects are evaluated on a case-by-case (and tree-by-tree) basis. The plan review process entails evaluating the existing tree resources on a site, understanding the dynamics of trees and development impacts, and negotiating a solution that results in a development with a balanced mixture young and mature trees, and a good diversity of species. Trees 8 inches in diameter and larger on a commercial sites (19 inches in diameter on a single family home sites) are evaluated for protection and replacement. The goal of each review is to assure that a final product is achieved which results in a diversified and sustainable urban forest. Existing trees are preserved when possible, additionally high quality native and adapted trees are required to be planted on development sites. Environmental Inspectors regulate the site during construction. More specifics on the City of Austin tree ordinance can be obtained within the [Land Development Code \(LDC\) 25-8, Subchapter B](#).

### City of Austin Environmental Inspection

The environmental inspectors provide monitoring and enforcement for environmental compliance. Prior to starting a commercial development an environmental inspector meets with the owner, civil engineer, and construction superintendant. A discussion is held to determine limitations and challenges during all phases (i.e. clearing, utilities, construction, revegetation) of the development. The environmental inspector checks for compliance throughout the construction process. If a non-compliant issue is discovered, the inspector may issue a non-compliance notice. A notice can be verbal or written and remains until the non-compliant issue is rectified. Tree compliance items at a development site may include ensuring a 5-foot chain link fence is installed and maintained, limbs and roots are cut cleanly, and 6-inches of mulch is placed under a tree's exposed areas.

### City of Austin Environmental Resource Management

The purpose of the [water quality protection program](#) is to protect and improve water quality in Austin's creeks, lakes, and aquifers for our community and aquatic life by preventing, detecting, evaluating and reducing water pollution. They are categorized into the following divisions: Community Education, Planning and Geographical Information System, Stormwater Monitoring, Environmental Assessment, Stormwater Treatment, Pollution Prevention and Reduction, and Pollution Detection, Tracking & Forecasting.

### City of Austin Landscape Inspection

Landscape Inspection performs investigations of permitted commercial land developments, construction sites, and businesses to ensure compliance with City of Austin Landscape and Irrigation Ordinance, Tree and Natural Area Preservation, and Texas Water Code irrigation guidelines and regulations. Additionally they investigate and process applications for Right of Way vacations, easement releases, license agreements, and provide technical assistance to citizens and developers.

## RELATED PROGRAMS

The City of Austin's Air Quality Program works to promote healthy outdoor air for all citizens. As part of the Transportation, Planning & Sustainability Department, the Air Quality Program addresses the City's impacts on air quality. And as part of the larger Austin community, the Air Quality Program is active in regional efforts to improve air quality throughout Central Texas.

**The mission of the City of Austin Air Quality Program is to:**

Develop and implement programs that reduce the impact of our business activities on regional air quality;

Promote air quality education and outreach to citizens and local businesses; and

Work with regional partners to promote healthy air in Central Texas.

## **City of Austin Urban Heat Island Initiative**

On warm summer days, temperatures in an urban area can be anywhere from 2 - 9°F warmer than in the surrounding areas. Cities experiencing elevated temperatures are referred to as Urban Heat Islands (UHI) because the urban area appears to be an island of heat within cooler surroundings. The UHI effect increases energy use, the emissions that contribute to global warming, and the conditions that cause smog. For further information, see [EPA's Heat Island explanation](#).

The Austin City Council passed a [resolution in 2001](#) to implement a Heat Island Containment Policy. Incentives for reflective roofs, requirements for increased private development shade tree plantings, and the Great Streets Tree planting initiatives were begun. The initiative is an on-going project and additional measures are being put into place to offset the heat island effect.

Ground level ozone is more likely to form at higher temperatures, so the hotter Austin gets the more ozone is formed. The UHI effect prolongs and intensifies heat waves in cities, making residents and workers uncomfortable and putting them at increased risk for heat exhaustion and heat stroke. Trees are a defense against the heat. Trees provide shade and absorb solar energy. Trees literally cool the air around them. Through evapotranspiration, they cool the air by releasing moisture from the surface of their leaves. Trees shading the south and west sides of a building, block the summer sun and reduce the amount of heat absorbed by the building. Air conditioning units in an area shaded by trees or other means work more efficiently and use up to 10% less electricity.

## **City of Austin - Great Streets**

A community's downtown is the heart of that community and its streets are its primary public spaces for downtown life and commerce. In downtown Austin, the street network comprises about half of the land area. Downtown Austin belongs to all Austinites, and it has always represented the community culturally, economically and politically. In Austin, the concept of [Great Streets](#) in downtown Austin came from the architectural community. For Austin to create great streets and public spaces, we must set forth a vision about our downtown and design a public right-of-way network to support that vision. Until very recently, our community had not articulated that vision. As a result, we have streets that serve only one function: moving cars. The design of our streets should be primarily an issue of urban design, not traffic engineering.

## **City of Austin Green Garden**

[The Green Garden program](#) has established guidelines to create attractive, efficient, and environmental friendly landscapes. In May 2001, the Austin City Council asked staff to assess the City's landscaping programs for their water quality benefits. There were four components to the Council request:

1. Evaluate Austin's programs against others throughout the country
2. Organize a landscaping summit (with 100 citizen participants)
3. Ensure City departments' landscaping practices are environmentally responsible
4. Assess six City programs for water quality enhancements including:

[Grow Green](#)

[Water Conservation](#)

[Green Building](#)

[Dillo Dirt](#)

[Composting](#)

[Zilker Garden in Parks and Recreation](#)

## City of Austin Water Conservation

[Water Conservation](#) offers several free programs and incentives to help you save water by lowering your operating costs. They can conduct a water audit of your whole property or just audit your irrigation system to ensure it is operating as efficiently as possible. They also can help you swap out your old, large capacity toilets or give you rebates for installing high-efficiency clothes washers. Commercial customers are eligible to participate in the City's water conservations incentive programs. Hotels, restaurants, office buildings, shopping centers and manufacturing plants and all other commercial customers can take part in the City's effort to reduce water consumption. The City of Austin wants to help you save water and lower your water bill. Water Conservation offers programs varying from replacing old toilets to planting a drought resistant landscape.

## City of Austin Solid Waste Services

[Bulky Item Collection and Large Brush Collection](#) are two separate collections with different crews and equipment that occur during different weeks throughout the year. Bulky items and large brush must be at the curb by 6:30 a.m. on the first day of the scheduled collection week(s). Try to keep them five feet apart from your garbage cart. Place bulky items and large brush at the curb in front of your house (items will not be collected if they are in an alley or in front of a vacant lot). To prevent damage to your property, never place bulky items or large brush in front of your mailbox, in front of a fence or wall, on top of your water meter, next to a telephone connection box, under low hanging tree limbs or telephone or electrical wires or behind a parked car.

### Code Compliance

City codes protect the health, safety and quality of life of Austin residents. Solid Waste Services enforces many of these codes. Common Code Violations

- [Illegal Dumping](#)
- [Tree Limbs Blocking Right-of-Way](#)
- [Weeds/Grass over 12 inches](#)

Most code compliance cases are initiated by Austin residents. If you suspect a code violation in your neighborhood, please report it to Code Enforcement by calling 3-1-1 or by [emailing](#) us. If a problem reoccurs after having been corrected, please report the problem again.

### Dillo Dirt

## **Oak Wilt Program**

The City of Austin is losing one of its most important assets--the beautiful live oaks and red oaks that form a shady, green canopy over the city. These oak trees are being threatened by a contagious disease called oak wilt. Over the past twenty years, Austin has lost more than 10,000 oaks to the deadly and infectious oak wilt disease. For both individuals and the City as a whole, this loss is felt by increased utility bills, reduced property values, and a sense of devastation.

To address this issue, the City of Austin's Parks and Recreation Department (PARC) began the Oak Wilt Suppression Project in 1988 and it originally ran until September 2002. The City worked in partnership with the USDA Forest Service, the Texas Forest Service, and local neighborhood associations. The purpose of the project was to educate the public, locate the disease, provide technical and cost-share assistance, and monitor treatments for any continued spread. From 2002 until January 2006, the City of Austin was not involved in the oak wilt suppression partnership. Beginning in 2006, the City's Watershed Protection and Development Review Department (WPDR) renewed its partnership with state and federal agencies as well as neighborhood associations.

## **NeighborWoods**

Together, NeighborWoods and Austin Energy are helping communities plant the right tree in the right place. Trees are valuable to communities as they simultaneously clean the air, save energy by cooling the neighborhood, make areas more aesthetically pleasing and increase property value.

A project of the Parks and Recreation Department, the mission of NeighborWoods is to purchase trees and coordinate with residential homeowners to plant trees in the right of way in front of homes.

## **Tree Folks**

[TreeFolks](#) grows the urban forest through tree planting, education and community partnerships. They invite businesses, schools, government, citizen groups and individuals to join them in creating a healthier environment and enhancing the quality of urban life. As a volunteer tree planting organization, TreeFolks provides a valuable service to the Central Texas community. TreeFolks works closely with other groups to educate and involve citizens in the tree planting and care. Since its inception, TreeFolks has planted thousands of trees in the Austin and Central Texas area at schools, retirement homes, treatment centers, parks, hostels, streets and medians, and neighborhoods.

**Maintain Tree City USA Status: Austin has been a Tree City USA community for 14 years.**

Tree City USA is a national award which recognizes communities that achieve a certain level of urban forestry management. Tree City status is often a requirement for being awarded state and federal urban forestry assistance grants. There are four criteria for receiving Tree City USA status:

- Have an Urban Forestry Advisory Commission.
- Have a tree ordinance in place.
- Hold an annual Arbor Day celebration.
- Spend a minimum of two dollars per year per capita on urban forestry.

The City shall strive to gain additional recognition annually through national award programs; i.e. Growth Award which recognizes even higher levels of community tree care programs.

## Urban Forestry Board

**Purpose:** To act in an advisory capacity to the City Council, the City Manager and the Director of Parks and Recreation in all matters pertaining to the City's urban forest. The Board is authorized to study, investigate, plan, advise, report and recommend any action, program, plan or legislation which the Board finds or determines necessary or advisable for the care, preservation, pruning, planting, replanting, removal or disposition of trees and shrubs and other landscaping in public parks, along streets and in other public areas. The Urban Forestry Board shall develop and establish a comprehensive urban forest plan for the planting, maintenance and replacement of trees in parks, along streets and in other public areas. When a portion of such a plan has been developed and established, it shall be submitted to the City Council for adoption prior to implementation. (Section 2-4-455 Austin City Code).

**Authority:** Established by City Ordinance.

**Membership:** Expertise in arboriculture, urban forestry or landscape architecture  
Citizens

**Number of Members:** 9

**City Staff:** Jay Culver, Parks & Recreation Department, (512) 440-5195  
Emily King, Parks & Recreation Department, (512) 440-5194

**Term:** Two year staggered terms.

**Meeting:** Third Wednesday of the month, 6:30 p.m. PARD Board Room, 200 South Lamar

Current Membership	First Appointed	Date Reappointed	Term Expires
Tim Mahoney, <i>Chair</i>	06/17/04	09/01/05	06/01/07

Contact Phone: (512) 326-9944 E-mail Address: <a href="mailto:mahoney2@infohiwy.net">mahoney2@infohiwy.net</a> Nominated by: Council Member Mike Martinez Representing: Citizens			
<b>Keith Babberney</b> , <i>Secretary</i> Contact Phone: (512) 924-1245 E-mail Address: <a href="mailto:arborworks@austintx.com">arborworks@austintx.com</a> Nominated by: Council Member Daryl Slusher Representing: Expertise in arboriculture, urban forestry or landscape architecture	01/27/05		06/01/06
<b>Joyce Basciano</b> Contact Phone: (512) 454-0207 E-mail Address: <a href="mailto:JBASCIANO@austin.rr.com">JBASCIANO@austin.rr.com</a> Nominated by: Mayor Will Wynn Representing: Citizens	04/27/95	07/29/04	06/01/06
<b>Mark Brooks</b> Contact Phone: (512) 394-0335 E-mail Address: <a href="mailto:mhbla@earthlink.net">mhbla@earthlink.net</a> Nominated by: Council Member Betty Dunkerley Representing: Citizens	03/03/05		06/01/05
<b>Nevic Donnelly</b> Contact Phone: (512) 445-2614 E-mail Address: <a href="mailto:texastreecare@hotmail.com">texastreecare@hotmail.com</a> Nominated by: Consensus Representing: Expertise in arboriculture, urban forestry or landscape architecture	01/13/05	08/18/05	06/01/07
<b>Mary Lehmann</b> Contact Phone: (512) 478-9812 E-mail Address: <a href="mailto:mlehmann1@austin.rr.com">mlehmann1@austin.rr.com</a> Nominated by: Council Member Danny Thomas Representing: Citizens	04/06/06		06/01/07
<b>Larry Maginnis</b> Contact Phone: (512) 291-6413 E-mail Address: <a href="mailto:larry.maginnis@austin.utexas.edu">larry.maginnis@austin.utexas.edu</a> Nominated by: Consensus Representing: Expertise in arboriculture, urban forestry or landscape architecture	04/27/06	07/27/06	06/01/08
<b>Howie Richey</b> Contact Phone: (512) 383-8989 E-mail Address: <a href="mailto:zow@io.com">zow@io.com</a> Nominated by: Council Member Brewster McCracken Representing: Citizens	06/23/05		06/01/07
<b>Jim Temple</b> Contact Phone: (512) 415-5666 E-mail Address: <a href="mailto:temple.jim@gmail.com">temple.jim@gmail.com</a> Nominated by: Council Member Jennifer Kim Representing: Citizens	03/09/06		06/01/06

Watershed Protection Master Plan

[Overview](#)

The mission of the Watershed Protection Department (WPD) is to reduce the impact of flooding, erosion and water pollution on our community in order to protect lives, property and the environment. To accomplish this mission, WPD completed Phase I of a Watershed Protection Master Plan to better prioritize service needs and refine program direction.

The Master Plan inventories existing watershed problems and gauges the impact of future urbanization in [seventeen \(17\) watersheds](#) - including all of the urban watersheds and five surrounding non-urban watersheds:

**Urban**

Blunn (BLU)  
Boggy (BOG)  
Buttermilk (BMK)  
East Bouldin (EBO)  
Fort Branch (FOR)  
Harper's Branch (HRP)  
Johnson (JOH)  
Little Walnut (LWA)  
Shoal (SHL)  
Tannehill (TAN)  
Waller (WLR)  
West Bouldin (WBO)

**NonUrban**

Barton (BAR)  
Bull (BUL)  
Country Club (CNT)  
Walnut (WLN)  
Williamson (WMS)

Phase I studies helped to locate and prioritize problem areas where watershed protection goals and objectives are not currently being met or are not expected to be met in the future. The problem area studies are categorized by mission as [creek flooding](#), [localized flooding](#), [streambank erosion](#) and [water quality degradation](#). [Integrated problem areas](#) were determined by overlaying the results of the individual mission studies to identify areas of concurrent flooding, erosion and water quality problems. Integrated problem areas demonstrate an increased need for multi-purpose solutions.

These studies determined that watershed problems are pervasive and will worsen if corrective action is not taken. Creek flooding poses a recurring citywide risk to public safety and property. For example, a relatively small 2-year storm creates structure flooding in 14 of the 17 Phase I watersheds. Localized flooding also threatens property across the City due to undersized, deteriorated, clogged or inadequate storm drain systems. Over 4000 localized flooding complaints have been logged over the last ten years. New erosion data identifies numerous existing threats to property with nearly 500 sites currently threatened. Increased stormflows from urban development have accelerated streambank erosion, leading to enlarged and unstable creek channels. Water quality studies document the fact that urbanization has led to the degradation of our urban creeks and receiving waters. Future development is predicted to continue the trend of degrading habitat and creek biology and increasing pollutant levels in local surface waters.

The Master Plan identifies opportunities for optimizing existing resources through improved prioritization, mission integration and a renewed commitment to the use of environmentally responsible, cost-effective and sustainable solutions. Problem priorities were established based on the severity of the identified problem at each location and the number and type of affected community resources (such as homes, roadways and receiving waters). To address the problems characterized by the watershed studies, the Master Plan identifies the need to implement a combination of watershed solutions including:

[Capital Infrastructure Projects](#) - Over \$800 million in capital funds are required to construct integrated watershed protection facilities including detention ponds, channel stabilization projects and other flood, erosion and water quality controls.

[Operating Program Enhancements](#) - Additional funding of \$2 - 5 million per year is needed to provide essential levels of service for several City programs and activities including infrastructure maintenance, development review and inspection, public education and design support.

[Regulatory Modifications](#) - Various code and criteria changes are required to improve customer service, provide developer incentives, reduce long-term maintenance needs and prevent the creation of new watershed problems in the future.

As detailed above, additional resources and funding will be necessary to achieve watershed protection goals. While attainment of erosion and flood goals may be possible given sufficient funding, water quality goals are not attainable through implementation of solutions evaluated in Phase I. Limited regional retrofit opportunities in urban watersheds and inadequate regulatory controls in areas outside the City's jurisdiction are examples of the various physical and institutional constraints that currently exist. Given these considerations, Phase I Master Plan recommendations are to:

1. Integrate watershed solutions to the extent possible to effectively promote watershed protection goals attainment.
2. Develop collaborative multi-agency partnerships (that include federal, state, and local entities along with other City Departments, community groups and concerned citizens) to achieve watershed protection goals.
3. Develop long-range funding proposals to support solution implementation.
4. Implement integrated capital projects using a needs-based, watershed management area approach as funding becomes available.
5. Use Master Plan results to assist in the development of proposed WPD budget increases to fund priority program enhancements.
6. Involve stake holders in the comment and review process for proposed regulatory modifications before Council consideration as final language is developed.
7. Refine watershed protection goals based on continued public involvement and additional studies.
8. Continue development and evaluation of innovative water quality solutions to attain water quality goals. Lower or revise water goals to reflect additional evaluation and feasibility of solution implementation.
9. Update Phase I Master Plan information as better data becomes available and solutions are implemented.
10. Expand master planning efforts beyond the Phase I watersheds as funding allows.

# Contact Information

Add web sites to the following

The City Arborist responsible for the Oak Wilt Suppression Program is Chris Dolan. He may be contacted at 974-1881 or at [chris.dolan@ci.austin.tx.us](mailto:chris.dolan@ci.austin.tx.us).

[City of Austin - Development Process](#)

[City of Austin - Environmental Criteria Manual](#)

[City of Austin - Green Building](#)

[City of Austin - Grow Green](#)

[City of Austin - Land Development Code](#)

[City of Austin - Parks and Recreation Department \(Urban Forestry\)](#)

[City of Austin - Water Conservation](#)

[City of Austin - Watershed Protection & Development Review Department](#)

[International Society of Arboriculture \(Texas Chapter\)](#)

[Lady Bird Johnson Wildflower Center](#)

[Lower Colorado River Authority \(Environmental & Education\)](#)

[Oak Wilt](#)

[Texas Cooperative Extension \(Texas A&M University System\)](#)

[Texas Forest Service](#)

[Tree Folks](#)

[Tree Identification](#)

[Urban Heat Island](#)

[USDA Urban Forestry Information](#)

Definitions and Acronyms

[Urban forest](#)

Formatted: Normal

Formatted: Font: Bold

## Index

## References and Acknowledgments

The Handbook of Texas Online <http://www.tsha.utexas.edu/handbook/online/index.html>

## Limitation, Suggestions, Deficiencies, Needs

Importance of a Street tree inventory  
Staffing/resources  
Public tree cycle maintenance  
Coordination efforts

## Appendices

## **OBSTRUCTION OF RIGHT OF WAY**

Low tree limbs: Originating from any tree or plant growing on private property  
Standard Operating Procedure  
8-25-05

### **PROCEDURE:**

- 1) Respond to Low Limbs by complaint basis.
- 2) Work request is checked against other PARD work orders to ensure that no duplication occurs.
- 3) Property in question is inspected, and a conclusion drawn regarding ownership of tree or plant causing obstruction.
- 4) If tree or plant causing obstruction originates from private property, the following information is then forwarded to Solid Waste Services Code Compliance:
  - a. Location
  - b. Pertinent comments or observations made by inspector
  - c. Description of request made by original requestor
  - d. Requestor's name and phone number (if available)
  - e. Date the PARD Work Order was created
  - f. PARD Work Order number
- 5) SWS will issue written notice of obstruction of public right-of-way by a tree or plant to property owner. Per City Ordinance 6-3-25, the notice must include the following:
  - a. A description of the corrective action required; and
  - b. A statement that the corrective action must be complete not later than the 10th day after receipt of the notice.
- 6) SWS will perform re-inspection of property 10 days following property owner's receipt of notice, in order to determine if obstruction has been abated.
- 7) If obstruction persists, SWS will forward the property address to PARD to abate problem.

- 8) At this point in time, however, PARD is not equipped to abate obstructions caused by trees or plants originating from private property.

### **OBSTRUCTION OF RIGHT OF WAY**

Low tree limbs: Originating from any tree or plant growing on City Right of Way  
Standard Operating Procedure  
12-2-05

#### **PROCEDURE:**

- 9) Respond to low tree limbs by complaint basis.
- 10) Work request is checked against other PARD work orders to ensure that no duplication occurs.
- 11) Property in question is inspected, and a conclusion drawn regarding ownership of tree or plant causing obstruction and legitimacy of complaint.
- 12) If tree or plant causing obstruction originates from City right of way the tree is inspected and flagged. The work order is passed to the PARD Forestry crew.
- 13) PARD Forestry crew will prune the tree to the specified height.