Comprehensive

Tree Management Plan

For Public Property in Terrebonne Parish Louisiana

Prepared by

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Terrebonne Tree Board

Terrebonne Parish Consolidated Government

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Introduction

Caring for Community Forests

Terrebonne Parish residents and the Terrebonne Parish Consolidated Government have recognized the benefits of trees and made the preservation, planting, care and maintenance of trees a priority for the environmental benefits and quality of life of the parish. Trees conserve energy, by providing shade and evaporative cooling through transpiration; improve local and global air quality by absorbing carbon dioxide and ozone, adsorbing particulate matter, and producing oxygen; reduce wind speed and directing air flow; reduce noise pollution; provide habitat for birds, small mammals, and other wildlife; reduce storm runoff and the potential for soil erosion and water pollution; increase real property values; enhance visual and aesthetic qualities that attract visitors and businesses and serve as a source of community image and pride.

The development of a Tree Management Plan is a vital tool in managing Terrebonne Parish's community forest and is the first step in the process of caring for the parish's trees. This Tree Management Plan will guide the individuals responsible for taking care of the parish's community forest and will be effective in meeting the needs of the parish's urban forest. This management plan establishes a clear set of goals and objectives as defined by the community. The parish tree manager and parish officials can use this plan as a guideline to maintain and create a healthy resource for all people to enjoy.

Introduction

Community Forest

The term community forestry will be used to describe five zones of forests extending from the *coastal forests* which are part of first line of defense in storm protection to the *urban forest* of the city center where trees provide a variety of economical, ecological and societal benefits. The community forest includes the coastal forest which extends from coastal marshes to the rural/urban interface of the *suburban fringe* where trees are valued for wildlife and ecological benefits; to the *suburbs* made up of established subdivisions and strip commercial development where the majority of trees have been planted and some remnants of the natural forests exist usually along bayous; to *city residential areas* consisting of individual homes just outside of the commercial districts with older more mature trees; to the *city center* where trees are growing with sidewalks, buildings, parking lots and vacant lots. For the purposes of this plan forested areas of the parish that are managed for timber production are not included in the community forestry designation.

The Terrebonne Parish Tree Management Plan will identify current parish tree programs and policies and recommend future tree management programs and policies necessary to achieve improved management of the community forest. A clear set of community forestry goals and objectives will be developed with

input from a variety of stakeholders.

Stakeholder Strategy

The Management Plan will include a strategy to establish a dialogue with stakeholders to discuss tree issues on public rights of way including utility companies, parish public works and legal departments and the Louisiana Department of Transportation and Development. Engaging these stakeholders is essential to insure implementation of the Management Plan's recommended policies and programs. A tree management strategy will guide the parish in developing a well managed community forest. This strategy will identify what the parish has in relation to the community forest resources and tree management practices, identify community forestry needs, establish goals to address the needs and recommend actions to implement desired community forestry results.

Guidelines

The Management Plan will also include guidelines for the care, preservation, pruning, planting, replanting, removal or disposition of trees and shrubs in parks, within public rights-of-way along streets, and in other public areas.

Preliminary Master Tree Planting Plan

A preliminary master tree planting plan will include a recommended list of trees for planting on public property, planting specifications, planting cost estimates and follow up mainte-

nance.

Inform Decision Makers

This Management Plan will be a valuable tool to evaluate the needs of the parish's community forest and will inform decision makers of the many benefits realized from a sustainable community forest. Identifying needs will be used to build support for levels of funding and implementing tree guidelines to address these needs. Solid information is the key in securing the necessary funding to maintain the urban forest for generations to come.

Assessing tree resources and reviewing existing tree management practices provide basic information necessary for making tree management decisions. Tree resource assessments including a tree inventory provide a baseline for measuring change. A review of existing tree management practices will identify current and historical management practices and identify all of the key players critical to implementing community forestry management in the parish.

Programs, Policies & Partnerships

Tree Ordinance

Sec. 2-531. Statement of purpose.

The purpose of this article is:

(1) To preserve and protect the existing healthy trees in Terrebonne Parish which play an important ecological role in controlling soil erosion and storm water runoff. To promote trees as enhancing air quality by reducing air pollution, noise and water pollution.

(2) To further promote for the benefit of our community an understanding of the value of trees new and old as an important economic asset, environmental asset and as creating a positive image of a caring community.

(Ord. No. 7251, § I, 1-10-07)

The Terrebonne Parish Tree Board was organized on January 12, 2005 by ordinance of the Terrebonne Parish Consolidated Government. Also at this time, Terrebonne Parish government passed a tree ordinance to preserve and protect existing healthy trees. Ordinance No. 7251 adopted January 10, 2007 amended Article XVII, Trees, to promote trees as enhancing air quality by reducing air pollution, noise and water pollution and to further promote for the benefit of the community an understanding of the value of trees as an important economic asset, environmental asset and positive image of a caring community.

The tree ordinance defines large, medium and small trees and gives specific criteria for planting. According to the ordinance, large trees are suitable for areas with more than two hundred (200) square feet of planting area in a planting strip at least seven feet wide or at least six feet from pavement or wall. Medium trees are defined as between twenty five and fifty feet tall and suitable for spaces with one hundred to two hundred square feet of planting space in a strip at least four to seven feet wide or at least four feet from pavement or wall. Small trees are defined as less than twenty five feet tall and are considered useful under utility lines and suitable in planting areas with less than one hundred square feet with a width of at least four feet or planted at least two feet from pavement or wall.

Programs, Policies & Partnerships

The parish ordinance recognizes that trees planted in inappropriate locations can cause problems with sewers, pavement and utilities and that some species are more subject to insect and disease problems. Safety is a concern with regard to visibility along streets and at intersections. As a result, the ordinance establishes criteria for street tree planting as follows:

Small trees that top out at twenty (20) feet tall and ten (10) feet wide;

All street trees must be planted at least two (2) feet from the curb and two (2) feet from the sidewalk;

No street tree may be planted closer than thirty (30) feet from another street tree;

No street tree shall be planted closer than thirty-five (35) feet to any street corner;

No street tree shall be planted closer than ten (10) feet from any fireplug;

No street trees, other than those species qualifying as small trees, shall be planted under or within ten (10) lateral feet of any overhead utility wire, or over or within five (5) lateral feet of any underground water line, sewer line, transmission line or other utility.

Branches shall not obstruct the light from any street lamp or obstruct the view of any street intersection and so that

Sec. 2-544. Protection of street trees and park trees.

The construction tree guard shall be at least four (4) feet high and at a distance of one (1) foot from the tree trunk per inch of diameter of the tree trunk as measured at breast height. All building material, dirt, or other debris shall be kept outside the construction tree guard.

(Ord. No. 7251, § I, 1-10-07)

there shall be a clear space of eight (8) feet above the surface of the street or sidewalk

The parish tree ordinance prohibits tree topping, requires pruning for corner clearance and protection of all public trees during construction. Best management practices for protecting trees during construction include erection of a fence, frame or box at least four feet high and a distance from the trunk based upon the size of the diameter of the tree. Tree protection also includes protection of the tree root zones from changes to natural drainage, construction of ditches and excessive fill.

Permits are required for any removal or disturbance of any public street tree or park tree. Misdemeanor violators may be fined up to $500 plus the cost of remediation or replacement as restitution or may be imprisoned up to sixty days and does not prohibit the TPGC from instituting a civil suit for damages. All fines collected shall be designated to the Terrebonne Parish Tree Board account.

Parish Arborist

Terrebonne Parish Consolidated Government (TPCG) employs an arborist on staff. The parish arborist is consulted with on public work improvements involving parish trees including utility and road work and tree trimming and plantings and works closely with the Tree Board on all tree issues. This employee

has duties that include maintenance of parish grass cutting and other duties assigned by the public works department head and is not able to dedicate full time attention on the needs of the community forest. It is the goal of this management plan to determine the community forest needs and recommend actions to fulfill these needs.

Partnerships

Parish government and public works department partner with community education providers including the Tree Board and LSU Ag Center to train public works crews on the best practices for working around trees.

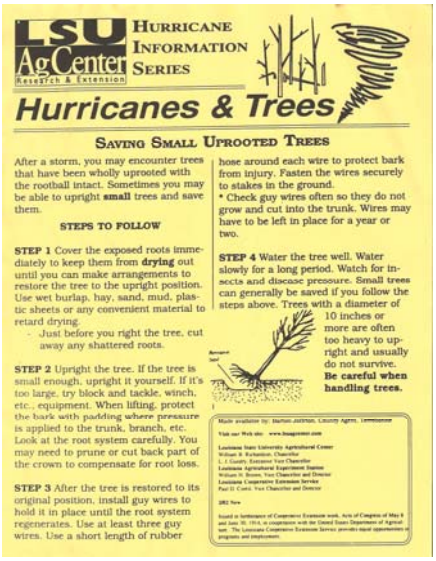
Tree City USA

The parish tree ordinance, establishment of the Tree Board and subsequent Arbor Day proclamation and parish funding for trees have entitled the parish to receive Tree City USA designation for 2005 and 2006. The Tree Board recognizes Arbor Day/ Earth Day by planting trees on public property. In 2006 the Tree Board planted a Live Oak Tree at the Parish Civic Center and in 2007, the Board was responsible for planting trees at Glynn F. Pope Memorial Park on Williams Avenue. The Tree Board plans to expand the Arbor Day planting program to other areas of the parish based upon coordination of volunteers and donations for trees.

Sec. 2-549. Public awareness.

It will be recommended to developers of businesses and home developments, at the permit process, that the planting of trees and landscaping be part of their overall plan in each development.

(Ord. No. 7251, § I, 1-10-07)



LSU AgCenter Research & Extension
HURRICANE INFORMATION SERIES

Hurricanes & Trees

SAVING SMALL UPROOTED TREES

After a storm, you may encounter trees that have been wholly uprooted with the rootball intact. Sometimes you may be able to upright **small** trees and save them.

STEPS TO FOLLOW

STEP 1 Cover the exposed roots immediately to keep them from **drying** out until you can make arrangements to restore the tree to the upright position. Use wet burlap, hay, sand, mud, plastic sheets or any convenient material to retard drying.

- Just before you right the tree, cut away any shattered roots.

STEP 2 Upright the tree. If the tree is small enough, upright it yourself. If it's too large, try block and tackle, winch, etc., equipment. When lifting, protect the bark with padding where pressure is applied to the trunk, branch, etc. Look at the root system carefully. You may need to prune or cut back part of the crown to compensate for root loss.

STEP 3 After the tree is restored to its original position, install guy wires to hold it in place until the root system regenerates. Use at least three guy wires. Use a short length of rubber hose around each wire to protect bark from injury. Fasten the wires securely to stakes in the ground.

* Check guy wires often so they do not grow and cut into the trunk. Wires may have to be left in place for a year or two.

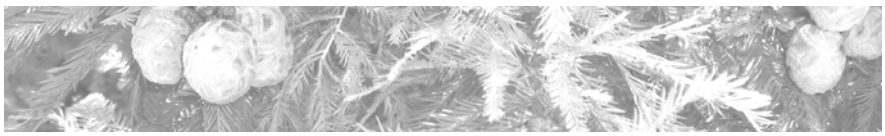
STEP 4 Water the tree well. Water slowly for a long period. Watch for insects and disease pressure. Small trees can generally be saved if you follow the steps above. Trees with a diameter of 10 inches or more are often too heavy to upright and usually do not survive. **Be careful when handling trees.**

Community Education

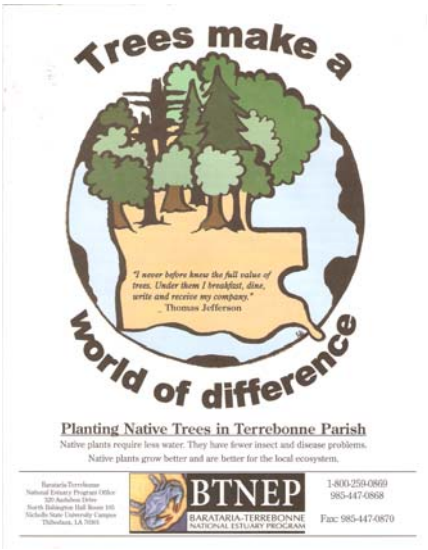
The Terrebonne Parish Tree board partners with a variety of community groups including parish government, local schools, Barataria Terrebonne National Estuary Program (BTNEP), Louisiana Urban Forestry Council (LUFC), Louisiana State University Agricultural Extension, Master Gardeners and Sheriff Jerry Larpenter. The Tree Board and LSU AgCenter sponsored three training seminars for public works crews that included instruction to demonstrate proper tree pruning techniques.

LSU Ag Center has been very active in promoting the benefits of trees in Terrebonne Parish. The Ag Center coordinates the Master Gardner program, writes articles on the proper care of trees for local newspapers and local internet sites and recently published an invaluable guide, *Hurricanes and Trees* as part of a Hurricane Information Series on best practices for trees pre and post storm.

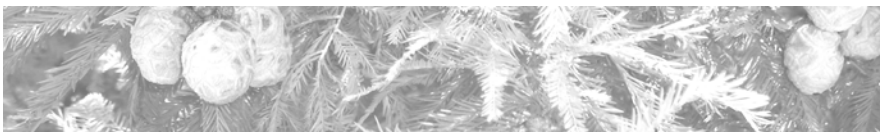
The Tree Board is active in providing community education programs on the benefits of trees. In 2004, the Tree Board partnered with the City of Lockport to sponsor a full day, Building Greener Cities workshop in conjunction with the Louisiana Urban Forestry Council (LUFC) to raise awareness on the benefits of the urban forest and community trees. In 2006, the Board sponsored a one-half day Building Greener Cities workshop for



developers and parish government officials. Realizing the importance of public awareness of tree issues, the Board has produced with the assistance of the Louisiana Cooperative Extension Service an informative brochure on tree selection, maintenance and pruning and tree planting that is distributed by the planning department to inform the public of the parish's community forestry efforts and the parish permit process for tree care. This informative brochure was paid for with funds provided by the Urban and Community Forestry Assistance Grant Program of the U.S. Forest Service in cooperation with the Virginia Department of Forestry. And although at this time there are no requirements in Terrebonne Parish to plant trees as part of a building permit process, the Tree Board recognizes businesses for their efforts to preserve trees during construction and for tree planting.



Barataria Terrebonne National Estuary Program (BTNEP), Terrebonne Tree Board, Terrebonne Parish School Board, Terrebonne Parish Consolidated Government, LSU Agriculture Extension, 4-H Group Leaders, LUMCON, and the Courier Newspaper all partnered to produce *Trees make a world of difference, Planting Native Trees in Terrebonne Parish.* This very informative pamphlet was distributed to 1,200 school age children in Terrebonne Parish and included learning activities to recognize



the value of native trees and how to protect the health and future of trees in the local environment.

Tree Planting Programs

Prior to the establishment of the Tree Board, the organization that helped form the Tree Board, Save the Trees Committee, planted oak trees under the overpass at the marina. Since the inception of the Tree Board in 2005, several tree planting programs have been successfully executed with the assistance of community partners and local volunteers. With the assistance of the Terrebonne Parish Sheriff's office, BTNEP, and the US Forest Service, 500 trees were planted in Summerfield Reservoir. Ganier Landscaping donated 6 trees and assisted in the planting of 9 more trees at Glynn F. Pope Memorial Park. Forty four (44) Crape Myrtles were planted on St. Charles Avenue. Thirty two (32) trees were planted at local schools with a grant from the Barataria-Terrebonne National Estuary Program (BTNEP).

In the Fall of 2006, the Tree Board assisted in several planting efforts including planting trees at the parish library, along Hwy 311, and Oakshire Park and assisted in the maintaining the historic live oak trees at the courthouse square.

The Tree Board and these partner organizations are supporting

the efforts of Bob Thibodaux to plant 2,000 trees along the Gulf Coast from Lake Charles, Louisiana to Houma starting in November 2007. The Board along with the LSU AgCenter are sponsoring a Tree Troopers class in 2007 and will pay the tuition for 4 parish vegetation department employees to participate in that valuable training opportunity.

Community Forestry Needs

Identifying the needs of the community forest is the first step in developing a comprehensive tree management plan. This inventory of community forestry needs includes biological needs, management needs and community needs.

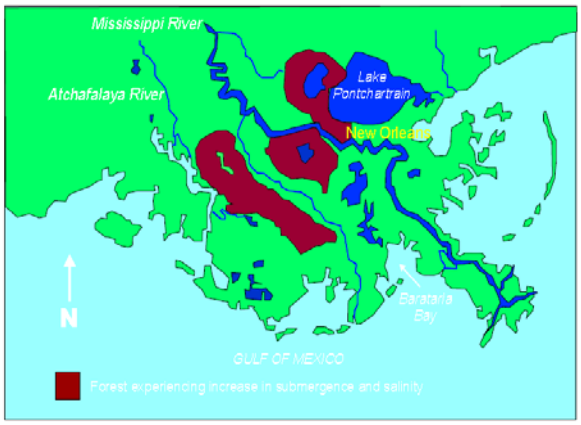


Fig. 2. Coastal Louisiana forest experiencing increase in submergence and salinity. http://www.nwrc.usgs.gov/climate/fs92_97.pdf

Biological needs include issues related to physical well being of the community forest including long term forest stability, optimum canopy coverage, conservation measures and compatibility of planting locations to reduce conflicts and damages. Management needs include long range community forestry planning and education, public and private tree care and a commitment of financial and personnel resources. And community needs include increased public awareness of the biological needs of trees and better understanding of the benefits of the community forest.

Community Forestry Needs

Community forestry needs identified by community stake-holders are as follows:

Biological Needs

Optimum canopy coverage;

Long-term forest stability;

Conservation of tree resources;

Adequate open space;

Elimination of salt water intrusion;

Management Needs:

Optimal financial and personnel resources;

Clear public policy and support for forest issues;

Comprehensive forestry information and natural resources inventory;

Improved tree care;

Community Needs:

Heightened community awareness and support;

Conservation of the community forest;

Education and training;

Community Forestry Goals

Community Forestry Goals are broad, general intentions that are the basis for formulating and evaluating the management strategy. Community forestry goals should be realistic and consider limitations posed by the level of community support, economic realities and environmental constraints.

The following community forestry goals have been identified by local stakeholders:

Manage forests for health and sustainability in urban, sub-urban and rural settings, to provide economic, social and environmental benefits to landowners and users;

Reduce forest fragmentation and parcelization;

Establish and maintain maximum tree cover;

Promote efficient and cost-effective management of the urban forest;

Establish long-term planning efforts to ensure the sustainability of community forests;

Coordination of parish and municipal governmental tree-related activities and policies;

Reduce tree removal due to sidewalk damage and conflicts with overhead utilities

Identify Tree Planting Locations;

Community Forestry Goals

Provide sufficient tree planting to keep pace with urban growth and offset tree removal;

Increase public awareness of the values and benefits associated with trees;

Improve private tree care;

Foster community support for community forest management programs;

Promote conservation of tree resources and the community forest;

Maintain trees in a healthy condition through good cultural practices;

Establish and maintain optimal level of age and species diversity;

Reduced tree-related conflicts between citizens;

Identify coastal forest issues and losses;

Maintain and rebuild the coastal forest;

Assess the value of the tree cover;

By establishing a dialogue with stakeholders and utilizing tools such as the tree inventory to quantify needs, specific goals can be identified that will achieve realistic achievable management of the urban forest.

Community Forestry Objectives

Community forestry objectives are precise and tangible. They are realistic and can be validated. Community forestry objectives should address the identified needs and consider the goals established to develop specific action items to implement the management plan.

These objectives include the development of specific best management practices for trees including integration of trees into existing ordinances and developing additional ordinances to implement the management plan as follows:

Promote conservation of tree resources through public education programs;

Improve ongoing voluntary planting programs through public education programs;

Improve private tree care through better public understanding of the biological needs of trees;

Fund full time parish tree management team including hiring a full time parish forester or arborist;

Amend parish storm water management manual to include credits for tree planting;

Implement a parish wide landscape ordinance;

Develop tree mitigation fund guidelines for tree removal;

Implement planning regulations and guidelines that en-

Community Forestry Objectives

courage preservation of existing trees;

Establish a strategy to rebuild and protect the coastal forest;

Conserve the urban forest by focusing public attention on all tree age classes, not just large heritage trees;

Select, situate, and maintain street trees appropriately to maximize benefits and minimize conflicts, nuisance, hardscape damage, and maintenance costs.

Community Forestry Objectives

Needs	Goals	Objectives
Forest stability; *Tree planting;* *Increased canopy;* *Financial resources;* *Personnel resources;* *Training and education;* *Private tree care;* *Community support;* *Conservation;* *Tree resources;*	*Establish long-term community forest planning;* *Maintain maximum tree cover;* *Maintain healthy trees;* *Establish and maintain age and species diversity;* *Tree planting to offset tree removal;* *Identify Tree Planting Locations;* *Reduce tree conflicts with utilities;* *Coordinate governmental activities and policies;* *Promote efficient management;* *Foster community support;* *Increase public awareness;* *Improve private tree care;* *Promote conservation;* *Reduced conflicts between citizens;* *Identify coastal forest issues and losses;* *Maintain and rebuild the coastal forest;* *Assess the value of the tree cover;*	*Fund full time parish tree management team including hiring a full time parish forester or arborist;* *Amend parish storm water management manual to include best management practices for trees and give credit for tree planting;* *Strengthen existing tree ordinance and advisory board;* *Implement a parish wide landscape ordinance;* *Develop tree mitigation fund for tree removal;* *Implement planning regulations that encourage preservation;* *Promote conservation of tree resources through public education programs;* *Improve ongoing voluntary planting programs through public education programs;* *Improve private tree care through better public understanding of the biological needs of trees;* *Establish a strategy to rebuild and protect the coastal forest;* *Conserve the urban forest by focusing public attention on all tree age classes, not just large heritage trees;* *Select, situate, and maintain street trees appropriately to maximize benefits and minimize hazard, nuisance, hardscape damage, and maintenance costs;*

Tree Planting Action Items

Tree benefits increase as canopy cover increases. By establishing and maintaining maximum tree cover, the parish is able to realize maximum benefits from the urban forest. Canopy coverage will determine the ecological and economic benefits of the community forest. The amount of carbon storage and sequestration, stormwater control, residential cooling effects and air pollution removal can be quantified by understanding the forest canopy coverage.

American Forests recommends an average 40% community tree canopy coverage east of the Mississippi based on the following zones:

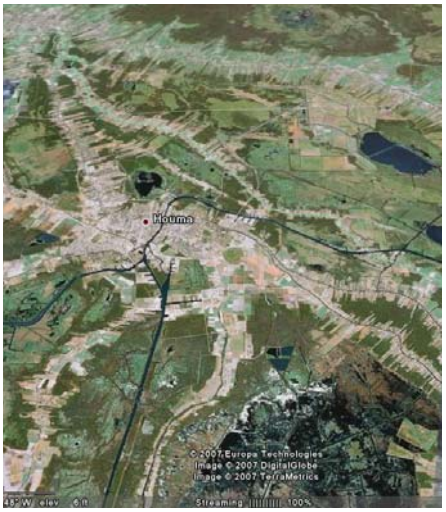
Average community tree cover	**40%**
Suburban residential zones	**50%**
Urban residential zones	**25%**
Central business districts	**15%**

In order to determine specific planting needs based upon the recommended canopy coverage, a study of the existing canopy is warranted. This study can be executed utilizing a variety of planning tools including Geographic Information Systems (GIS) and the CITYgreen program.

Tree Planting Action Items

Action: Prepare an assessment of the parish's canopy and natural resources inventory using the CITYgreen program.

Since much of the recent development sprawl has occurred in former agricultural lands, it is assumed that the parish canopy will be less than the optimum 40% coverage recommended by the American Forests.



As a result, specific tree plantings can be implemented to achieve the desired canopy coverage. These tree planting actions should include consideration of the species distribution and size distribution of the community forest canopy. The existing tree inventory can be used as a guide to develop these planting guidelines.

Species distribution is the percentage of each species of tree. Knowing the distribution of each species will allow the parish to establish goals and objectives and specific action items to create diversity in the community forest.

Action: Tree plantings should recognize the need for species diversity and include species that consists of less than 10% of the community forest.

Tree Planting Action Items

Size class distribution is the proportion of trees by size. Understanding the size of existing trees will allow the parish to establish goals to create a high percentage of large canopy trees. In the future, as trees are planted in the parish regularly, the size distribution should be relatively even, tapering off at the larger, older trees.

> ***Action: Plan tree plantings to consider tree distribution. Concentrate future plantings to achieve a relatively even distribution of sizes.***

Tree condition indicates the percentage of good, fair, poor and dead trees. Identifying the condition of trees in the urban forest will allow the parish to assess which trees need to be removed first and provide estimates for budget purposes.

The vast majority of trees recorded in the tree inventory were found to be in good to excellent condition as recorded by the tree inventory. Dead trees pose a hazardous situation and should be removed immediately. Trees listed as poor should be inspected to determine the amount of work necessary to remove any potentially hazardous conditions that may exist. Efforts should be undertaken to inspect these trees to determine necessary remedial work.

Tree Planting Action Items

***Action:** Recommend immediate budgeting for removal of dead trees and survey poor trees and those with questionable pit conditions for corrective action.*

Identifying tree planting locations will assist the parish in developing actions to achieve the desired species, size and class distribution. Areas to be identified could include street medians or along streets in commercial and residential areas of the suburbs or suburban fringe, in sidewalk cutouts in the city center, in coastal areas, or in residential areas near commercial districts or on individual properties that want to assist in planting trees at their homes.

With the sprawl of suburbs into agricultural lands, there are ample planting spaces and a need for trees. A tree planting estimate can be compiled by adding the number of new subdivision lots created and the number of building permits issued for commercial, industrial and institutional uses.

Planting trees in the city center and city residential areas in sidewalk cutouts and on private property can improve the quality of the urban forest. Planting trees in coastal areas can

lessen the impacts of tropical storms and hurricanes. Future tree budgets should give consideration to the number of trees removed and the number of trees proposed to be planted (excess of removal).

The Tree Board will identify a list of stakeholders to annually update and refine the goals and objectives and recommended action items for achieving species diversity and distribution, and provide ongoing input into the list of reasonable planting locations.

> ***Action: Establish an Advisory Board to assist in identifying and prioritizing sites for tree plantings.***

Funding for tree planting can come from a variety of sources including in-kind donations, parish funds, private and corporate donations and state and federal grants. The Tree Board has been most effective in receiving funds for planting by partnering with various corporations and governmental agencies and organizations to plant trees.

> ***Action: Budget sufficient funds annually to meet targeted planting goals through public and private funding efforts.***

Forest Management Action Items

The coastal forest is the first line of defense against coastal storms. These forests need to be protected to insure this level of protection. There is a need to identify areas of the coastal forest that are being destroyed and develop guidelines to maintain and enhance this forest and to partner with state, regional and federal agencies to develop programs to reduce and replenish the loss of these valuable coastal landscape resources.

Terrebonne Parish Department of Coastal Restoration and Preservation

2006 Goals and Objectives

To hold, and where possible, prevent saltwater from intruding into freshwater areas in order to protect the freshwater supply to the people of Terrebonne; to keep a balance of salt and freshwater in order to maintain the vast estuaries of Terrebonne, and to prevent land loss due to vegetation decomposition as a result of salt -water intrusion.

Salt water intrusion is a major problem to the coastal zone and coastal forest. Community stakeholders have identified this as an issue for attention in this management plan.

Action: Support efforts of local coastal zone management efforts to reduce salt water intrusion.

Implementation of community forestry goals and objectives is critical to the protection and enhancement of Terrebonne Parish's community forest. Managing a community forest to implement the community forestry vision takes a full time tree management team to plant, maintain and administer the parish tree management policies and guidelines to insure forest sustainabil-

Forest Management Action Items

ity. A management team can coordinate the efforts of parish government, community groups, educational institutions and programs and individuals to achieve the goals and objectives of the Comprehensive Tree Management Plan.

> ***ACTION: Fund a full time tree professional to lead a tree management team.***

Effective stakeholder participation is a cornerstone of an effective community forestry program. Public education programs can facilitate stakeholder participation by offering visioning exercises, planning sessions on alternative growth scenarios and smart growth training sessions in addition to traditional forestry and landscaping topics.

Key to the success of this community education is continued involvement by the Terrebonne Parish Tree Board, Louisiana State University Cooperative Extension, Barataria Terrebonne National Estuary Program, Homebuilders Association, Chambers of Commerce and other civic and community organizations. Possible participants include:

- City Planners
- *Engineers*
- *Building Inspectors*
- *City Advisory Committee*

- *Planning Commission Members*
- *Developers/Contractors/Subcontractors*
- *Home/Property Owners*
- *Neighborhood Associations*
- *Foresters*
- Citizen Groups
- *City Councils*
- *Utility Companies*
- *Realtors*
- *Developers*
- *Landscape Architects*

Education offerings may take may forms including workshops, contractor seminars, direct mail, newsletters, handouts, and brochures. Community recognition is an other effective way to educate. Consider giving recognition to individuals, contractors and developers who excel in tree preservation or those who exhibit good tree maintenance and cultural practices.

Action: Coordinate education programs and providers to offer community education programs to implement the goals and objectives of the Management Plan.

The parish community forest is a valuable asset. In order to understand fully the value of the urban and community forest, a study should be undertaken to estimate the dollar value of the parish's trees. The plan should clearly establish the monetary

value of the trees and indicate the cost of not maintaining the urban and community forest in order to show the cost-benefit analysis of maintaining the trees.

Other capital expenditures, such as building and maintenance equipment, decreases in value with age. In most cases, the investment in trees will increase as time goes by, as long as they are properly maintained.

Action: Purchase CITYgreen software and conduct a study to estimate the value of the community forest.

Consideration should be given to organizing an annual work plan of educational programs. Coordinating educational offerings with partnering organizations and educational institutions on an annual basis will maximize limited financial resources and return maximum benefits.

Action: Develop an annual work plan to promote conservation of tree resources through public education programs.

Development Action Items

Parish officials, city planners, landowners, developers, builders and homeowners all play major roles in parish real estate development, yet may have different agendas. Local government oversees development according to development codes to insure development fulfills local requirements, provides sufficient tax revenue and protects property values and the environment. Landowners, developers and builders observe building regulations and respond to market demands to provide a quality product to the public at an affordable cost. Homeowners and neighborhoods expect local government to pass and enforce local regulations to insure the development of a sustainable community in which to live and work.

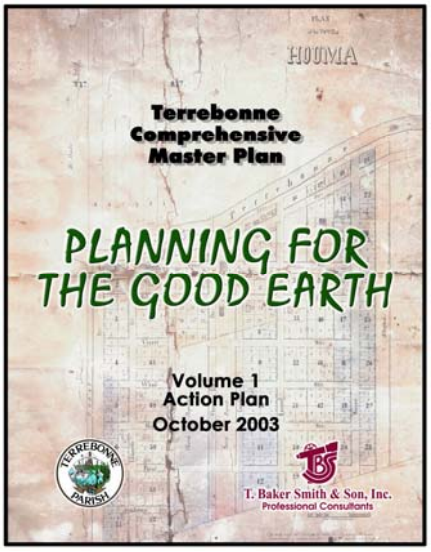
Local units of government have authority over planning, managing and regulating urban growth and defining the types of development by creating standards for development including subdivision regulations, building permits and zoning ordinances. These local units of government assess taxes and collect user fees to implement local capital improvement projects.

The metropolitan planning district and district department of transportation have jurisdiction and input into construction and maintenance of state and federal roadways in the area. The general public and community organizations such as the Tree

Development Action Items

Board provide input to local government to develop comprehensive plans for the orderly growth of the parish.

Action: Include a Community Forestry Plan as an element of the Parish's Comprehensive Plan.



In Louisiana as in many areas of the United States, commercialization occurs in strips along state and federal highways. In many cases, local transportation networks do not provide sufficient connectivity to these state highways creating the perceived need for multiple traffic lanes with wide rights of way that result in considerable traffic congestion. In Terrebonne Parish, this development pattern is even more pronounced with development locating on strips of higher ground along the many bayous and drainage canals making connectivity even more of a challenge.

Sustainable community developments use compact development forms, a mix of uses, better use of existing infrastructure and preservation of critical environmental areas to preserve open space, farmland and natural beauty. These standards can contribute to the implementation of community forestry objectives, benefit storm water runoff and improve water quality in Terrebonne Parish. These development strategies are commonly referred to as Smart Growth.

Development Action Items

Action: Implement development codes to encourage compact development and preservation of trees through sustainable community developments standards.

Zoning and subdivision regulations can include provisions for open space; encourage variable lot sizes; mixed use developments; street width and setbacks sized according to traffic; and creative development plans such as cluster development options. These regulations can provide incentives for development to promote conservation efforts and can be combined with stormwater detention and runoff requirements to implement a community conservation plan.

Conserving wooded areas including riparian areas along bayous will protect connectivity of wildlife habitat and corridors, assist in developing networks of forest communities as open space and protect water quality for recreation in the parish. These areas play an important role in the environmental health of the region.

In order to identify those areas of the parish for conservation, a comprehensive assessment of the parish landscape resources is recommended. This inventory can be conducted by a multi disciplinary team to identify and evaluate the landscape resources of the parish and to guide future land use decisions. A wood-

Principles of Smart Growth

Create range of housing opportunities

Create walkable neighborhoods

Encourage community and stakeholder collaboration

Foster distinctive, attractive communities with a strong sense of place

Make development decisions predictable, fair and cost effective

Mix land uses

Preserve a variety of transportation choices

Strengthen and direct development towards existing communities

Take advantage of compact building design

http://www.smartgrowth.org/about/principles/default.asp

land survey will delineate tree stands by type and condition and assess ecological functions and conservation values. Aerial photography and land surveys can assist to coordinate these conservation efforts.

The landscape resources inventory and woodland survey will guide the development of a community conservation plan. This plan includes location of transportation systems, utilities, select wooded areas to be conserved, developable areas and will be used to guide appropriate land protection options.

Action: Prepare a Community Conservation Plan.

For the purposes of this plan, the landscape level is defined as the area of land under the jurisdiction of local or regional governments. This includes cities, parish, transportation department district and metropolitan planning district.

Local government can insure conservation of wooded areas and reforestation of subdivisions by developing policies and ordinances that can be added to existing subdivision regulations to guide new subdivision developments. These guidelines could include an inventory and assessment of wooded areas in the proposed subdivision to be submitted at the time of preliminary approval. This subdivision level wooded area inventory and

assessment will utilize information from the community landscape resources and woodland survey and provide specific detailed site information on watersheds and bayou corridors, wetlands, proposed greenways, soils, septic system suitability, and areas occupied by rare plants and animal species and delineate proposed areas to be developed and greenways and wooded areas slated for protection and conservation. Coordinate with the Louisiana Department of Wildlife and Fisheries for an inventory of rare plants ana animal species. If a subdivision is not covered with wooded areas, an alternate plan or reforestation plan may be initiated.

Action: Develop a process to require a woodland inventory and assessment survey of all new subdivisions.

Since protecting wooded areas has direct benefits to individual landowners, homeowners, businesses, neighborhoods and communities, it is the responsibility of every individual to protect trees at the lot level. Each lot owner can develop a tree inventory and resource assessment with the assistance of a local forester or arborist. At this level, builders and individuals could assess the tree species, size and condition of trees on their property. This information could be compiled using a GPS system and added to the community woodland survey and existing tree inventory to gain valuable community tree information at the lot level.

Terrebonne Parish Department of Planning & Zoning

Mission

To provide professional planning and building services to preserve the natural resources and qualities of Terrebonne Parish, to enhance quality of living and ensure orderly development.

http://www.tpcg.org/admin/sop_planning.asp

Development Action Items

***Action:** Establish a tree inventory and resource assessment tool for individual lot owners.*

Transportation and utilities are major components of urban and suburban development. Transportation systems include interstate systems, state and federal highways, parish roads, municipal streets, railways, and bike and pedestrian ways. It is important to understand the relationship between land use and transportation systems and the significant impact of these systems on the natural environment and wooded areas.

Although most agree with the benefits of trees, the discussion of preserving existing trees can be a hotly contested issue when a tree preservation ordinance is proposed. Many times the issue is a misunderstanding of the costs to business associated with tree preservation or the concern for property rights.

Ordinances across the U.S. run the gamut from restrictive to flexible, effective to ineffective, and enforced to un-enforced. Many communities protect trees on public property by local tree ordinances. The scope of the ordinance or policy may cover only projects undertaken by the city or parish government on public land or it could also include work by utility companies, private residential, commercial or industrial projects. There may be a minimum size for a project to be regulated. The ordi-

nance may regulate only tree preservation or may also include tree mitigation measures such as replacement or new planting either on or off site. In some cases, communities protect certain large tree species growing on private property. Still other communities protect a percentage of over-story trees growing on private property to maintain an overall tree canopy.

In any case, public education seems to be the primary key to effective discussions of tree preservation options for a community. Terrebonne Parish must determine it's own needs and goals and design its ordinance to best achieve these objectives. Education should begin before an ordinance has been drafted.

The ordinance must be easy to read and understand for everyone, including the staff, developer, elected officials, and the citizens of the community. Consideration should be given to creating incentives to achieve compliance. These ordinance often give credit to preserved trees toward tree planting requirements or protecting wooded areas using conservation easements or other preservation tools.

The challenge of the ordinance may not be getting it passed, but getting people to follow its provisions. Everyone that will be affected by the ordinance should be included in the process and

have a role in its development starting with the basic objectives.

Tree preservation ordinances are usually developed in zoning or subdivision regulations. In most cases, tree preservation ordinances have been upheld in the courts as a reasonable extension of the local government's zoning authority. These ordinances preserve and require tree planting in connection in commercial, multifamily, industrial and institutional zoning districts. These codes can include requirements for tree buffer zones where incompatible uses abut and protection of existing trees to be preserved during development. Other guidelines could include utilizing greenspace islands in parking areas to filter stormwater runoff.

Action: Implement a parish wide landscape ordinance that requires tree preservation and/or tree planting on new commercial, industrial, institutional and multifamily residential developments.

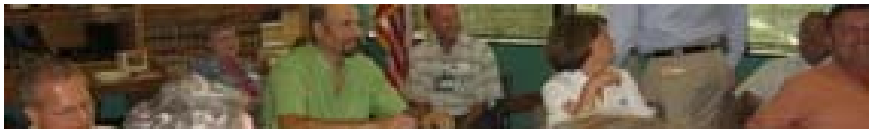
Stakeholders

Terrebonne Parish understands the value of the community forest and has funded community forestry programs including a part time forester, grant matching funds and tree removal costs.

The Tree Board and Parish have been very effective in receiving grants and partnering with other community groups to implement community forestry programs.

The Tree Management Plan is a living document continually changing to reflect changes in resources and funding, and must include ongoing input and cooperation from key players, including a variety of Parish and municipal departments including parish public works and legal department, Louisiana Department of Transportation and Development (LDOTD), utility providers, land developers and builders, non-governmental organizations and the general public. Urban and community forestry programs must interact with other parish and municipal programs, including sewer and water installation and repair, street and sidewalk design and maintenance, gas, electric and telephone service providers, developers and builders and the general public in order to be an effective tool.

The Parish Urban Forester is the key contact person for issues related to the care of trees growing in parks or along roadways



in Terrebonne Parish, and was consulted and participated in the preparation of this tree management plan.

It is recommended that an Advisory Committee composed of stakeholders be organized to meet semi-annually to review the Management Plan and provide input into community forestry issues. The following individuals are recommended for inclusion in this advisory group and are identified by title:

President of the Tree Board

Parish Urban Forester

Homebuilders Association Representative

Development Community Representative

Real Estate Industry Representative

Parish Public Works Director

LDOTD Representative

Utility Company Representative

Landscape Architect

Landscape Contractor

Licensed Arborist

Licensed Nurseryman

Garden Club Representative

Cooperative Extension Agent Representative

Barataria-Terrebonne National Estuary Representative

Chamber of Commerce/Business and Industry Representative

Capital Region Planning Commission Representative

Municipal Government Official

Parish Government Official

The groups listed above were found to have a vital interest in the trees found growing and planned for future plantings in Terrebonne Parish. Efforts should be made to continue to work with representatives of these groups during the implementation of this management plan.

This tree management plan forms the foundation for an effective and systematic tree care program for Terrebonne Parish. This plan addresses the interests of key players in establishing a plan for the community forest and has received broad-based support for the tree programs recommended. Trees can be the common element that tie diverse community groups together for the common purpose of retaining the rural charm and cultural heritage of Terrebonne Parish.

Master Tree Planting Plan

Public tree plantings are carried out by a wide variety of individuals and organizations. Developers and builders plant trees to make their projects more appealing and marketable. Community groups plant trees to beautify schools, parks, playgrounds and roadways.

Residents want large, mature trees that form a canopy over the street.

Surveys show residents want large, mature trees that form a canopy over the street. They also expect uninterrupted service from utility companies and paved streets and sidewalks. Tree roots can cause damage to sidewalks and streets and clog sewers and limbs can grow into utility lines causing outages and expense. In many cases, trees are removed to alleviate these conflicts.

Growing trees in urban settings can be likened to the Japanese art of bonsai. Tree roots are confined which can result in a dwarfing effect. Tree roots and underground lines often coexist without problems. However, trees planted near underground lines could have their roots damaged if the lines need to be dug up for repairs.

Sanitary sewer system collection lines are made from a variety of materials. Older sewer lines made of cast iron, concrete, and clay can be more susceptible to root intrusions due to shorter pipe lengths and joints that have loosened over time due to soil expansion and shrinking. Newer pvc plastic lines have less joints that are fastened better due to improved techniques and as a result have less problems with root intrusions.

Power lines and telephone lines are buried underground in many new developments. Although trees can sometimes affect the conduits that house these utilities, it is unlikely that interruptions to service will be caused by tree roots. The biggest danger to underground lines occurs during planting. Before digging, notify Louisiana One Call to mark underground utilities to avoid conflicts during planting.

Street sidewalk damage can occur with tree roots upheaving these surfaces particularly in areas with extremely high water table. Care should be exercised when selecting a tree to be planted in these locations.

The following recommended trees are made to guide the parish on planting trees on public rights of way to reduce future tree conflicts and maintenance costs.

Additional tree species are listed in a subsequent section of this plan. Considerations for specific plantings should include the function of the planting, site factors that may limit the plantings including overhead wires, confined root zones, high water table, other soil conditions and who will be doing the planting.

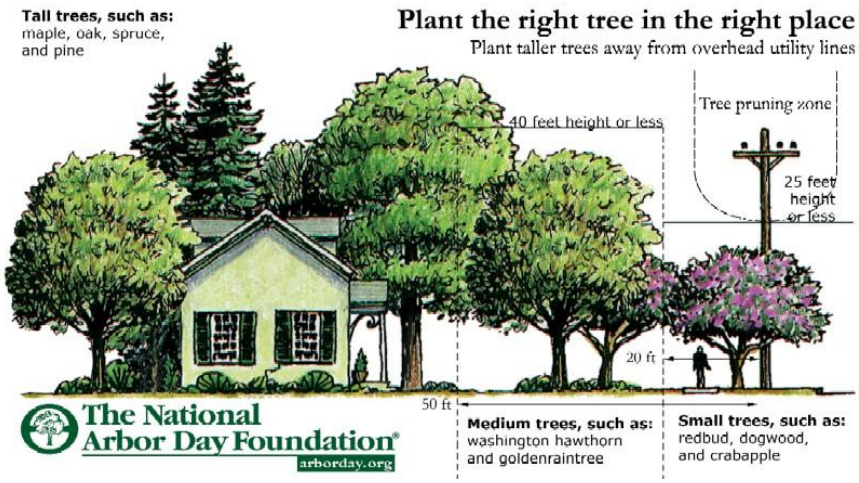
Tree Species		Shape	Growth Rate		Native	Comments
Scientific Name	Common Name		Slow	Medium		
Small Trees - to 25'						
Amelanchier arborea	Serviceberry	Rounded		*	*	some shade 'Autumn Sunset,' 'Cumulus,' 'White Pillar'
Carpinus caroliniana	Ironwood	rounded	*		*	tempermental
Cercis canadensis	Eastern Redbud	oval		*		short ilved
Chionanthus viriginicus	Fringe Tree	oval	*		*	ice flower late spring
Halesia diptera	Silverbell	oval		*	*	Clean tree, spring flower autumn color
Ostrya virginiana	Hop Hornbeam	mounding	*		*	long lived, no pests
Prunus 'Okame'	Okame Cherry	Rounded		*		drought/clay soils early bloom
Prunus serrulata 'Kwanzan'	Kwanzan Fl. Cherry	Rounded	*			early bloom
Ulmus pumila	Siberian Elm	Rounded		*		short lived, disease/pest drought tolerant

Master Tree Planting Plan

Tree Species		Shape	Growth Rate		Native	Comments
Scientific Name	Common Name		Slow	Medium		
Medium Trees - 25' to 50'						
Acer rubrum Drummondii	Swamp Red Maple	oval		*	*	short lived somewhat brittle wood
Fraxinus pennsylvanica	Green Ash	pyramidal		*		High pH Interesting bark
Gleditsia trancanthos	Honeylocust	irregular		*	*	Wet/Dry/Salt/High pH Uthornless variety
Koelreuteria bipinatta	Goldenraintree	Rounded		*		Drought/Salt/High pH subject to winter kill
Pistacia chinensis	Chinese Pistachio	oval	*	*		wind resistance
Ulmus parvifolia	Chinese Elm	vase-like		*		durable, interesting bark, 'Drake'
Large Trees - 50' +						
Ginko biloba	Ginko	upright	*			Drought/Salt/High pH Male does not fruit
Liriodendron tulipifera	Tulip Tree	pyramidal		*	*	Needs large pits
Metasequoia glyptostroboides	Dawn Redwood	pyramidal		*		Wet/Dry/High pH Needs large pits
Platanus occidentalis	Sycamore	pyramidal		*	*	anthracnose somewhat high maintenance
Quercus spp	Live Oak, Red Oak White Oak, Cow Oak Cherrybark, Willow Oak	Rounded	*	*	*	Wet-Dry Soils Needs large pits Good storm resistance
Taxodium distichum	Bald Cypress	pyramidal		*	*	range of soils clean tree, storm resistance

Live Oaks Line Street Right of way

Live oaks and cypress trees have been found to be the most tolerant to wind and storms. They can be great street trees if planted in the correct location. There are many examples in and around Terrebonne Parish where live oaks have been successfully planted as street trees. Care should be taken when planting these trees to insure a long maintenance free life. High water table, particularly with live oaks can create problems for paved areas such as streets and walks. These problems can be avoided with proper placement.



CITY CENTER

CITY RESIDENTIAL

SUBURBS

SUBURBAN FRINGE

COASTAL FOREST

Following are specific recommendations for the five forest categories, city center, city residential, suburbs, suburban fringe and coastal forest areas.

City Center

Commercial:

Install trees in sidewalk openings where possible in the city center. Be mindful of overhead utilities. Space trees between car parking stalls to avoid conflicts with parking.

Note: Trees will be somewhat dwarfed due to confined growing conditions.

Recommended Trees:

With overhead utilities:

Drake/Chinese Elm
Crape Myrtle
Ironwood
Kwanzan Flowering Cherry
Okame Cherry
White Fringe Tree

Without overhead utilities:

Cypress
Ginko
Green Ash
Red Maple

Install trees along banks of bayous. All tree species are encouraged to be planted based upon planting size constraints.

Note: Consider the amount of open ground space available when selecting tree species.

Recommended Tree:

Cypress
Black Gum
Swamp Dogwood
Sycamore
Pine
Live Oak
Flowing Cherry
White Fringe Tree
Ironwood

City Residential


Live Oak

Residential:

Install trees on private property in front yards to act as street trees.

Be mindful of overhead utilities and pedestrian and auto clearances.

Avoid planting on top of sewer laterals.

Recommended Trees:

Large trees are recommended where space permits to form a canopy over the street.

All trees are recommended based upon specific site constraints of utilities and planting areas.


Sycamore/Live Oak

Suburbs

Live Oak

Residential:

When using Live Oaks, provide adequate space adjacent to street right of way to install street trees allowing sufficient planting space adjacent to buildings, walks and curbs.

Avoid planting on top of sewer laterals.

Recommended Trees:

All oaks
Cypress
Dawn Redwood
Pine
Magnolia
Sycamore
Tuliptree

Live Oak

If planting in strip between the road and walk consider set-backs from corners and drives.

If large trees are planted in yard, consider planting small flowering trees in planting strip between the street and walk.

Avoid planting on top of sewer laterals.

Recommended Trees:

Medium Trees:

Chinese Elm
Chinese Pistacio
Goldenraintree
Green Ash
Honeylocust
Red Maple

Small Flowering Trees:

Flowering Cherry
Fringe Tree
Redbud
Serviceberry
Silverbell

Suburbs

Red Maple

Residential:

Large trees are recommended where possible as street trees in subdivisions with curb and gutter and sidewalks. These trees can be planted between the road and walk where space permits.

Where possible, plant similar species across the street to unify the street scene. Avoid planting large trees under utility lines.

Avoid planting on top of sewer laterals.

Recommended Trees:

Large Trees:

All oaks
Cypress
Dawn Redwood
Pine
Magnolia
Sycamore
Tuliptree

Medium Trees:

Chinese Elm
Chinese Pistacio
Goldenraintree
Green Ash
Honeylocust
Red Maple

Cypress Trees

Suburbs


Live Oak

Commercial:

Median:

Plant trees in medians. Large trees are encouraged.

The amount of space will dictate the size of tree to be planted.

Recommended Trees:

All oaks
Cypress
Pine
Magnolia
Sycamore
Chinese Pistacio

Suburbs


Cypress

Commercial Front Planting Strip:

Provide sufficient green space to accommodate tree plantings in front of commercial.

A combination of large, medium and small trees should be planted.

Recommended Trees:

All trees recommended.

Live Oak

Commercial Front Planting Strip:

Where overhead utility lines do not allow planting large trees, install planting bump outs to plant large trees so as not to interfere with utility lines.

Recommended Trees:

All oaks

Cypress

Dawn Redwood

Pine

Magnolia

Sycamore

Tuliptree

Suburbs


Cypress


Live Oak


Live Oak

Commercial Accessway Planting Strip:

Install large and/or medium trees to guide auto circulation and separate parking.

Recommended Trees:

Large Trees:

All oaks
Cypress
Dawn Redwood
Pine
Magnolia
Sycamore
Tuliptree

Medium Trees:

Chinese Elm
Chinese Pistacio
Goldenraintree
Green Ash
Honeylocust
Red Maple

Suburbs


Cypress


Cypress

Commercial Parking Planting Areas:

Install trees in parking areas to create shade and separate the expanse of concrete.

Where possible use large trees.

Use planting strips to break up expanses of parking.

Consider allowing runoff to drain through landscaped planting strips to filter urban runoff.

Recommended Trees:

Large Trees:

Cypress
Dawn Redwood
Deciduous oaks
Magnolia
Tuliptree

Medium Trees:

Chinese Elm
Chinese Pistacio
Goldenraintree
Green Ash
Honeylocust
Red Maple

Small trees

Ironwood

Redbud

Fringe Tree

Silverbell

Suburbs


Live Oaks

Commercial

Retention/Detention Ponds:

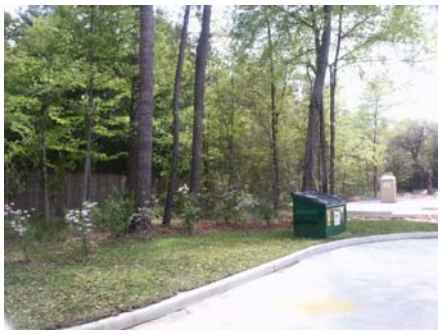
Plant a variety of sizes of trees to enhance detention/retention ponds in commercial areas.

Use trees to contribute to meet required reduction of stormwater runoff.

Commercial

Buffer Residential Uses:

Preserve existing trees. Install mix of tree sizes to buffer adjacent residential uses.



Recommended Trees:

Large Trees:

Cypress
Dawn Redwood
Deciduous oaks
Magnolia
Tuliptree

Medium Trees:

Chinese Elm
Chinese Pistacio
Goldenraintree
Green Ash
Honeylocust
Red Maple

Small trees

Ironwood

Redbud

Fringe Tree

Silverbell

Suburban Fringe


Cypress

Roadside Planting

Install street trees on the backside of ditches in rural areas.

Avoid planting large trees under utility lines.

Recommended Trees

All Oaks
Cypress
Dawn Redwood
Magnolia
Tuliptree

Bayou Edge Planting

Install a variety of sizes of trees adjacent to bayous to protect bank from erosion and provide shade to bayou..

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Recommended Trees

All trees recommended.

Suburban Fringe

Tree Preservation

Preserve trees in rural areas to improve forest connectivity, rural charm and environmental benefits.

.

Recommended Trees

All trees except invasive species are recommended to be preserved.

Coastal


Cypress

Planting

Identify planting areas in coastal areas along bayous, roadways and high ground away from salt water intrusion.

Install native trees in rural areas.

.

Recommended

Salt Tolerant Trees

Black locust

Cottonwood

Live Oak

Ginko

Green Ash

Siberian elm

Sumac

Eastern Redcedar (moderate)

Magnolia (moderate)

Red Mulberry (moderate)

River birch (moderate)

Sweet gum (slightly)

Appendix A

Tree Species Selection Chart

Louisiana Cooperative Extension Publication #2926

Appendix A

Tree Species Selection Chart

Overstory Trees

Common Name	Tree Type	Mature Height	Mature Spread	Growth Rate	Moisture Conditions	Benefits	Possible Problems	Comments
Bald Cypress	D	100	25-50	Rapid; then moderate	Moist to Wet	Fall Color	Knees on wet sites	Considered one of the best storm resistant trees
Green Ash	D	60	50	Rapid	Moist	Shape/Color	Insects, decay	Well suited to many soils; Attractive shape and foliage;
Hickory	D	75+	50	Slow to moderate	Dry to moist	Wildlife; fall color; fruit	Insects; decay	Attractive fall color; durable tree;
Live Oak	E	75	100	Moderate then slow	Dry to moist	Durable; wildlife; long lifespan	Very large; surface roots	Considered one of the most storm resistant of large trees.
Pecan	D	75	50+	Moderate to rapid	Moist to dry	Edible fruit; wildlife;	Brittle wood; disease; insects	Site specific; Does not take well to fill, construction activities or wet soils.
Red Maple	D	50-60	25-35	Rapid	Moist to wet	Colorful seeds; flowers	Disease, short lived	Good for many soils; excellent spring and fall color
Red Oak	D	To 100	To 75	Moderate	Moist to dry	Wildlife; shape	Fruit drop	Healthy attractive tree; fall color; nice shape; not suitable for heavy clay soils;
Southern Magnolia	E	To 75	To 50	Slow to moderate	Dry to moist	Wildlife; flower; foliage	Fruit and leaf drop;	Louisiana state flower; long lifespan;
Southern Pine	E	100	50	Moderate	Moderate to dry	Attractive foliage	Site selective	Attractive dense dark green needles;
Sycamore	D	100	50+	Rapid	Moist	Bark texture, color	Leaf and fruit drop	Tolerates most soils;
Yellow Poplar	D	To 90	To 50	Moderate to fast	Dry to moist	Shape; texture; leaf color	Few problems	Fast growing shad tree with good form.

The Selection, Planting and Care of Urban Trees,
Louisiana Cooperative Extension
Publication #2926

Appendix A

Tree Species Selection Chart

Understory Trees

Common Name	Tree Type	Mature Height	Mature Spread	Growth Rate	Moisture Conditions	Benefits	Possible Problems	Comments
Blue Beech	D	20-30	15-25	Slow	Moist	Trunk interest; Fall Color; long lived	Sensitive to grade change	Thrives in full sun; also shade tolerant;
Eastern Red Cedar	E	50	30	Slow to moderate	Moist to dry	Dense foliage	Disease; Insects	Shallow roots; best in high ph soils;
Dogwood	D	25-30	20	Moderate	Moist to dry	Flowering; wildlife	dieback	
Fringe Tree	D	20-30	12-20	Slow to moderate	Moist	Fragrant flowers; wildlife; fall color	Difficult to transplant;	Good for naturalistic settings; great flowers;
Holly	E	To 25	To 25	Mderate	Moist to wet	Fruit; wildlife; fall and winter color	Spring leaves; surface roots	Appropriate near utility lines; fruit dropping could be nuisance;
Plum	D	To 25	To 25	Moderate to rapid	Moist to wet	Flower; wildlife; bark; texture color; fall color	Short lifespan; insects; diseases	Bright white flowers; edible fruit; appropriate near utility lines; several species
Redbud	D	To 25	To 25	Slow to moderate	moist	Flower; fall color	Short lived; requires good soil	Several species available; appropriate near utility lines;
Red Buckeye	D	8-20	6-10	Moderate	Moist to dry	Flower; foliage; texture	Young stems, flowers, fruit toxic	Excellent nectar plants for hummingbirds
River Birch	D	To 50	25-35	Fast	Moist to wet	Fall color; peeling bark;	Shallow roots	Some problems with aphids; powdery mildew and leaf spots;

The Selection, Planting and Care of Urban Trees,
Louisiana Cooperative Extension
Publication #2926

Appendix A

Tree Species Selection Chart

Understory Trees (Cont.)

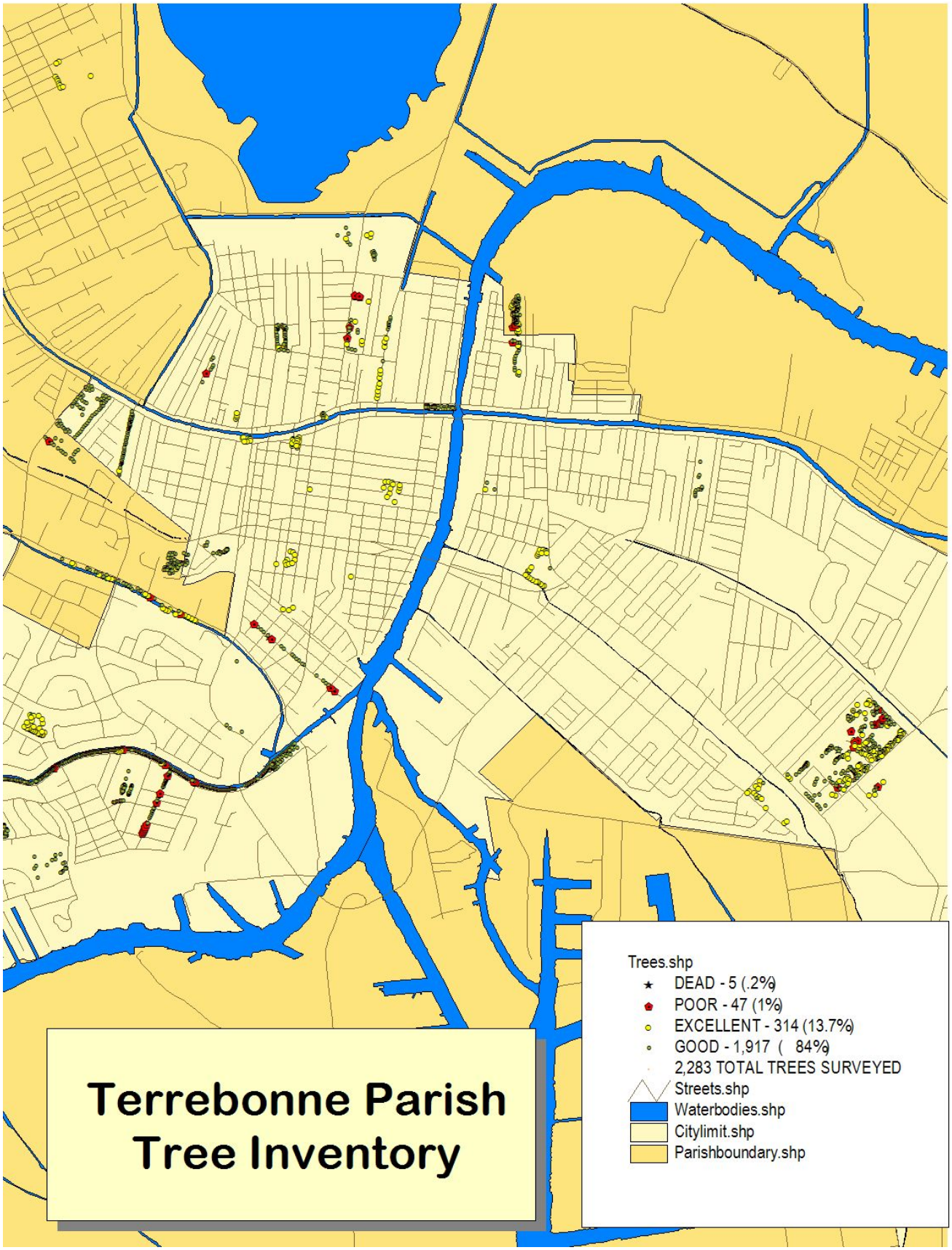
Common Name	Tree Type	Mature Height	Mature Spread	Growth Rate	Moisture Conditions	Benefits	Possible Problems	Comments
Service-berry	D	10-25	6-20	Moderate	Moist to dry	Fragrant flow-ers; wildlife; fall color	Roots sus-ceptible to damage during transplant-ing;	Good for naturalistic set-tings; performs best in acid soils;
Shining Sumac	D	8-10	5-25	Fast then moderate	Dry to moist	Fall color; dry soils; wildlife	Suckers	Good for naturalistic set-tings; needs high light; tolerates poor soils; excel-lent fall color;
Silverbell	D	To 25	To 25	Slow	Moderate	Flower; wildlife	Short life-span	Excellent tolerant speci-men; outstanding spring blooms; needs drainage; appropriate near utility lines.
Southern Haws	D	20-25	10-15	Slow to moderately slow	Wet to dry	Wildlife; fall color; fine tex-ture; clean	Thorny; insects' fruit dropping	Several produce fruit used for making jellies;
Sparkle-berry	E	10-20	6-10	Slow	Moist; acid	Flowers; wild-life; attractive trunk; fall color	Slow growth; difficult to transpoant;	Adapts well to a variety of soils; late winter bird food; butterfly larvae food;
Winged Elm	D	20-60	15-40	Moderate	Moist to dry	Good shade tree; wildlife; fall color	Powdery mildew;	Many have handsome corky branches;

The Selection, Planting and Care of Urban Trees,
Louisiana Cooperative Extension
Publication #2926

Appendix B

Tree Inventory

Appendix B


Terrebonne Parish
Tree Inventory
Trees.shp
DEAD - 5 (.2%)
POOR - 47 (1%)
EXCELLENT - 314 (13.7%)
GOOD - 1,917 (84%)
2,283 TOTAL TREES SURVEYED
Streets.shp
Waterbodies.shp
Citylimit.shp
Parishboundary.shp

Appendix B

Terrebonne Parish recently completed a Tree Inventory. Although the tree inventory was carried out in and around the Houma area, it is a good beginning and can be used as a sampling of the condition of the urban forest in the city center, city residential areas and suburbs. The inventory lists the species, health, size and distribution of trees existing trees on public land in those areas surveyed.

Understory Trees		
Juniper	1	0.6%
Palm	1	0.6%
Cedar	2	1.2%
Drake Elm	2	1.2%
Swamp dogwood	2	1.2%
Winged elm	2	1.2%
River birch	8	4.7%
Ash	18	10.6%
Marsh dogwood	40	23.5%
Crape Myrtle	94	55.3%
Total Understory	170	
Overstory Trees		
Cottonwood	1	0.0%
Sweetgum	2	0.1%
Maple	23	1.1%
Live oak	39	1.8%
Pecan	42	2.0%
Elm	72	3.4%
Magnolia	87	4.1%
Hackberry	115	5.4%
Pine	331	15.6%
Oak species	692	32.6%
Cypress	721	33.9%
Total Overstory	2125	

Species distribution is the percentage of each species of tree. Knowing the distribution of each species will allow the parish to establish goals and objectives and specific action items to create diversity in the community forest.

According to the survey, 10 varieties of understory and 11 varieties of overstory trees were recorded. Of these understory trees recorded, the vast majority were listed as Crape Myrtle (53.3%) with a smaller percentage of Marsh Dogwood (23.5%) and Ash (10.6%). Cypress (33.9%) and Oak species (32.6%) were the predominant species along with Pine (15.6%) amounted to a total of 77.1% of all overstory trees recorded. Of all trees recorded, 7.4% were considered understory and 92.6% are overstory.

In the areas surveyed, 78.8% of all trees recorded measured un-

Appendix B

0-2" DBH	%	Tree Type
1	0.08%	COTTONWOOD
1	0.08%	WILLOW
2	0.17%	CEDAR
2	0.17%	SWAMP DOGWOOD
2	0.17%	WATER ELM
8	0.67%	RIVER BIRCH
13	1.10%	ASH
13	1.10%	CRAPE MYRTLE
15	1.26%	MAPLE
25	2.11%	PECAN
30	2.53%	MAGNOLIA
32	2.70%	ELM
34	2.86%	MARSH DOGWOOD
51	4.30%	HACKBERRY
159	13.40%	OAK
249	20.98%	PINE
550	46.34%	CYPRESS
1187	57.1% of all trees recorded	

3-4"DBH		Tree Type
5	1.11%	ASH
9	2.00%	CRAPE MYRTLE
75	16.67%	CYPRESS
40	8.89%	ELM
49	10.89%	HACKBERRY
30	6.67%	LIVE OAK
15	3.33%	MAGNOLIA
5	1.11%	MAPLE
2	0.44%	MARSH DOGWOOD
204	45.33%	OAK
11	2.44%	PECAN
3	0.67%	PINE
1	0.22%	SWEETGUM

5-6"DBH		Tree Type
1	0.5%	CREPE MYRTLE
1	0.5%	MAPLE
1	0.5%	LIVE OAK
1	0.5%	MAPLE
2	1.0%	CYPRESS
2	1.0%	MAGNOLIA
2	1.0%	DRAKE ELM
2	1.0%	MARSH DOGWOOD
3	1.5%	PECAN
3	1.5%	CREPE MYRTLE
5	2.5%	LIVE OAK
9	4.5%	HACKBERRY
26	13.1%	MAGNOLIA
31	15.7%	CYPRESS
44	22.2%	OAK
65	32.8%	PINE
198	9.5% of all trees recorded	

7-12" DBH	%	Tree Type
1	0.4%	JUNIPER
1	0.4%	MAPLE
1	0.4%	SWEETGUM
2	0.8%	MARSH DOGWOOD
3	1.2%	HACKBERRY
12	5.0%	CRAPE MYRTLE
13	5.4%	MAGNOLIA
13	5.4%	PINE
22	9.1%	CYPRESS
174	71.9%	OAK
242	11.6% of all trees recorded	

der 4" diameter breast high. This is a significant percentage of young trees in the surveyed area and would suggest that there is considerable awareness of the community forest and ongoing tree planting efforts in the area surveyed. The tree inventory should be studied further to determine the distribution of trees by area to understand better specific tree distribution.

Tree condition indicates the percentage of good, fair, poor and dead trees. Identifying the condition of trees in the urban forest will allow the parish to assess which trees need to be removed first and provide estimates for budget purposes.

The vast majority of trees are

25-36" DBH		TREE TYPE
1	4.8%	HACKBERRY
1	4.8%	PECAN
4	19.0%	CYPRESS
15	71.4%	OAK
21	1% o all trees recorded	

37+" DBH		TREE TYPE
1	25.0%	LIVE OAK
1	25.0%	LIVING OAK
2	50.0%	OAK
4	.2% of all trees recorded	

NUMBER	SIZE DBH	CONDITION
4	3-4"	Dead
1	1"	Dead
5		TOTAL DEAD
1	24"	Poor
2	12"	Poor
6	6-8"	Poor
11	3-5"	Poor
27	1-2"	Poor
47		TOTAL POOR
1,917		TOTAL GOOD
314		TOTAL EXCELLENT

NUMBER	PIT CONDITION
31	Weeds
7	STANDING WATER
62	FAIR
1	COMPACTED
101	Total pits in need of attention

in good to excellent condition as recorded by the tree inventory. Dead trees pose a hazardous situation and should be removed immediately. Trees listed as poor should be inspected to determine the amount of work necessary to remove any potentially hazardous conditions that may exist. Over one hundred (101) tree pits were recorded as needing attention with regard to weeds, standing water and soil compaction. Efforts should be undertaken to inspect these trees to determine necessary remedial work.

Appendix C

Standard Specifications: Part VII – Incidental Construction

Louisiana Department of Transportation and Development

Section 719

Landscaping

719.01 DESCRIPTION. This work consists of furnishing and planting various plant materials in accordance with the plans and these specifications.

719.02 LANDSCAPE CONTRACTOR REQUIREMENTS. The landscape contractor shall conduct his operations in accordance with Section 107, the requirements of the Louisiana Horticulture Law and Regulations, and this section.

719.03 MATERIALS. Materials for landscaping shall comply with the following Sections and Subsections, and the following requirements.

Mortar Sand	1003.02
Fertilizer	1018.16
Agricultural Lime	1018.17
Water Management Gel	1018.29
Mycorrhizal Inoculant	1018.30

Water may be obtained from any source, except that brackish, chemically contaminated, or oily water shall not be used. Individual plant varieties, species, and size will be indicated on the plans.

(a) Pine Bark for Bed Preparation and Backfilling: The contractor shall furnish pulverized, well rotted, ground pine bark for use in preparing backfill soil and the soil in bed areas.

(b) Backfill Soil: Backfill soil shall be prepared as follows:

5 parts topsoil

3 parts pine bark for bed preparation and backfilling

1 part sand

Water Management Gel

Mycorrhizal Inoculant

Water Management Gel and Mycorrhizal Inoculant shall be added at the manufacturer's recommended rate for individual trees or plants at the time of planting. All clods, stones, roots, gravel, and other debris shall be removed from the excavated soil. Backfill soil shall be mixed with excavated soil from individual planting holes at a rate of three parts backfill soil to one part excavated soil. This mixture shall then be used to backfill individual planting holes. Fertilizer shall be added in accordance with Section 718 except as specified herein.

(c) Water Management Gel: Water management gel shall consist of a polymer with the ability to retain and release available water to the root zone. The manufacturer's recommended amount of water management gel shall be mixed with the required amount of backfill soil per plant before backfilling.

(d) Mycorrhizal Inoculant: Mycorrhizal inoculant shall consist of live spores and not root fragments or mycelium. Inoculant shall consist of live spores of Vesicular-Arbuscular (VA) Endomycorrhizal fungi and Ectomycorrhizal fungus and beneficial bacteria which have been chosen based on their ability to survive and influence plants over a broad pH range. Rhododendrons, Azaleas, and Laurels require ericoid Mycorrhizae.

(e) Topsoil: Topsoil, if called for on the plans, shall be fertile, friable, natural surface soil obtained from a well drained area free of stones, brush, weeds, shale, roots, or other litter. Topsoil shall have a minimum of 5 percent organic matter and pH range between 5.5 to 7.0 inclusive.

(f) Top Dressing Mulch: Top dressing mulch shall be pine bark, pine straw, redwood chips, hardwood mulch or cypress bark. When pine bark mulch is specified, mulch shall consist of 1/2 inch (15 mm) minimum size chipped pine bark. Excessively "green" and/or decomposed pine bark will be rejected.

(g) Fertilizer Tablets: Fertilizer tablets shall be an approved brand containing nitrogen fixing and phosphorus solubilizing bacteria, slow-release nitrogen, natural organic nutrients, and humic acid complying with the requirements of Subsection 1018.16. The fertilizer tablets shall be delivered in sealed waterproof containers.

719.04 QUALITY AND EXTENT OF WORK. The engineer shall notify the Department's Landscape Architect before work begins to coordinate the planting. Work shall be done in accordance with accepted landscaping practices. Plant materials approved for planting shall be container grown or balled and burlap, loaded, moved, unloaded, planted, fertilized, pruned, watered and maintained as necessary to ensure their healthy growth.

719.05 PLANT MATERIALS. Plants will be subject to approval at the project site before planting. Trees and other plant materials shall be inspected by the Department's Landscape Architect, with the landscape contractor present. In the event that plant material is rejected, it shall be removed from the site, and the contractor shall locate acceptable plant material from other nursery sources at no direct pay.

(a) State and Federal Regulations: Plant material shall be free from injurious insect pests and plant diseases and subject to regulations of Federal and State Departments of Agriculture. Shipments of plants shall comply with nursery inspection and plant quarantine regulations of the states of origin and destination. The contractor shall obtain proper certificates for movement of nursery stock intrastate and interstate, and shall comply with all other requirements before and during movement or shipment of plants. A copy of the Certificate of Inspection shall accompany each delivery.

(b) Plant Names: Scientific and common plant names shall comply with the current edition of "Hortus." Plants shall be true to name and legibly tagged. There shall be no substitutions for the types, species, quantities or sizes of materials specified without written permission, and then only when sufficient evidence has been presented that the specified plants cannot be obtained and that the substituted plants are equal to the plants specified.

(c) Grading Standards: Grading of plants shall comply with the latest edition of "American Standards for Nursery Stock," as published by the American Nursery and Landscape Association, unless otherwise specified.

(d) Plant List: A complete list of plants will be shown on the plans including botanical name, common name, quantity, height, caliper, etc. Sizes of stock shown are the minimum acceptable sizes.

(e) Quality and Source of Plants: Plants shall be nursery grown, well formed, and at least No. 1 Grade unless written permission is obtained to use selected native stock. This permission may be granted only if native stock is better suited or superior in quality to plants obtained from a nursery. Plants and trees shall equal or exceed the measurements specified in the Plant List. They shall be measured before pruning, with branches in normal position. Dimensions for height and spread refer to the main body of the plant and not from branch tip to branch tip. The determining measurements for trees shall be caliper and/or height as described in the Plant List. Caliper of the trunk shall be taken 6 inches (150 mm) above the ground level for sizes up to and including 4-inch (100 mm) and 12 inches (300 mm) above the ground level for larger sizes. Trees shall have a habit of growth which is normal for the species. Plants shall be healthy, vigorous, and free from insects, diseases and injuries. The contractor shall not trim or cut leaders or main branches of trees.

(f) Balled and Burlapped Plants: Balled and burlapped plants shall be dug with firm, natu-

ral balls of soil of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Balls shall be firmly wrapped with burlap or similar material and bound with twine, cord or wire. Balled and Burlapped plants shall be watered prior to transportation and kept moist until planted.

(g) Container Grown Plants: Container grown stock which has become potbound or in which the top system is out of proportion (larger) to the size of the container will not be acceptable. The stock shall have a fibrous, cohesive root system. Container grown plants shall not be removed from the container until just before planting, and care shall be taken to prevent root system damage. Container grown plants shall be watered prior to transportation and shall be kept moist until planted.

(h) Handling and Storage: The contractor shall protect plants from drying out by covering the root system with mulch, wood chips or suitable materials and watering the root system and foliage as necessary. Plants shall be protected from drying winds and sun as directed. Plants shall be lifted from the bottom only, not by stems or trunks. Plants will be rejected if the soil is cracked or loosened.

(i) Delivery and Receipt of Plant Materials: The contractor shall notify the engineer at least 48 hours before delivery of plant materials to the project. Each shipment shall be accompanied by an invoice showing sizes ad varieties in the shipment.

(j) Inspection: Plant materials shall be subject to inspection and approval at any time during the life of the contract. Plants having any of the following deficiencies will be rejected: excessive abrasions of bark, dried out root system, excessive dead wood, dried up wood, excessive sun scald injuries, undeveloped and weak top or roots, crooked or one-sided development of tops, no straight leaders on trees normally having them, broken or removed leaders, untrue types or sizes, not complying with Federal and State Laws or regulations bearing on inspection and certificates, excessively damaged balls of soil, balls of soil dug from loose soil which will not properly ball, dead plants and plants otherwise not complying with these specifications. Rejected material shall be replaced with new plant material of the same kind at no direct pay.

719.06 CONSTRUCTION METHODS.

(a) Seasonal Operations: Unless otherwise authorized in writing, the planting season is between November 1 and April 15. Work shall be suspended when the ambient temperature falls below 32°F (0°C), wind velocity is excessive, ground is frozen or too wet, or continuation of prevailing weather would likely cause unsatisfactory results. The contractor shall complete planting as early as practical in the planting season. When the only landscape work on the project consists of shrub planting at dead end road installations, planting may be performed at any time during the year, provided the ambient air temperature is above 32°F (0°C) and weather and ground conditions

are suitable for planting. Container grown plants will be required at dead end road installations.

(b) Pruning: If necessary, plant material shall be pruned on the project in accordance with the plan details. Pruning shall be limited to the removal of injured twigs and branches. The normal shape of the plant shall be left intact unless otherwise directed by the Department's Landscape Architect. Selective pruning may be required on trees of special type or character at no direct pay.

(c) pH Readings: The Department will test the pH of the soil in the planting area. The soil shall have a pH between 5.5 and 7.0 when tested in accordance with DOTD TR 230 unless otherwise specified.

(d) Location of Plants: Plants shall be located in accordance with plans or as directed by the project engineer or landscape architect.

(e) Setting Individual Plants Not in Beds: The planting hole shall be dug twice the width of the root ball of the plant. The sides of the planting hole shall be straight and the bottom flat. A mound shall then be built in the center of the plant hole with excavated material for the plant to sit on. Plants shall be set plumb and at such level that, after settlement, a normal relationship of the crown of the plant with the ground surface will be established. Each plant shall be in the center of the planting hole. When plants are set, backfill soil shall be tamped under and around the base of each root mass to fill all voids. Plants shall be planted in backfill soil complying with Subsection 719.03(b) thoroughly settled by watering and tamping to minimize settling and leaning of plant material. Plants 6 feet (2 m) tall and taller, shall be staked in accordance with applicable nursery practices at no direct pay. The contractor shall be responsible for maintaining all plant material in a vertical position for the contract period. On balled and burlapped stock, any wire or cord shall be cut or removed from the root balls and stems. The top one-third of burlap shall be removed from the root ball. Tree planting holes shall be loosened to a depth of 2 feet (0.6 m) below the bottom of the pit or to such depth that any hardpan has been broken and moisture is allowed to move freely. The contractor shall notify the engineer in writing of any problems before installing the trees. When plants are grouped together in a plant bed or in a line less than 5 feet (1.5 m) apart, the area shall be loosened and lumps broken to a minimum depth of 6 inches (150 mm) prior to excavating planting holes. After planting has been completed, a bowl shall be formed using excavated material around each plant as shown in the planting details. Bowls shall extend to the limits of the planting holes for trees and shrubs. No bowls are required in areas of bed preparation. Shrubs in lines or groups may share a common bowl around their perimeter.

(f) Fertilizer: The contractor shall furnish and place either granular or tablet commercial fertilizer at the specified rate in accordance with this section and Subsection 718.03(a). Fertilizer shall be mixed with backfill soil before backfilling. The recommended amount of fertilizer tablets

shall be equally placed in the upper 2 inches (50 mm) of backfill soil 2 inches (50 mm) from the root ball or in accordance with the manufacturer's recommendations. Fertilizer tablets shall be used in individual plant holes, separate from bed areas. After the tree or shrub has been placed, the manufacturer's prescribed amount and spacing of tablets for the specified plant size shall be applied.

(g) Agricultural Lime: The contractor shall furnish and place agricultural lime in accordance with Section 718 to adjust the soil pH.

(h) Backfilling: Care shall be taken in placing backfill under the sides and over the root mass. Backfill shall be placed to 3/4 the depth of the ball on the sides and watered uniformly on the sides of the root mass to allow settlement of the plant. Plants which settle or lean before or after watering, shall be straightened, raised or replanted. Excavated material not used as backfill or for bowls shall be spread on areas of the project as directed or disposed of in accordance with Subsection 202.02.

(i) Water: The contractor shall furnish and apply water in sufficient quantities for proper irrigation of the plants. Plants shall be watered during planting operations, immediately after planting and at intervals as directed until final acceptance.

(j) Bed Preparation: The contractor shall remove grass, weeds, sticks, roots, stones and other debris from the planting bed. The contractor shall treat the planting bed with an approved preemergence herbicide in accordance with the manufacturer's recommendations. The contractor shall rototill the planting bed to a minimum depth of 10 inches (250 mm) and add the materials of Table 719-1.

Table 719-1 Bed Preparation Material

Material	Per 1000 Sq Ft	Per 100 Sq m
Mortar Sand	3 Cubic Yards	6.0 Cu m
Pine Bark	7 Cubic Yards	2.5 Cu m
Fertilizer 8-8-8 (Or Other Balanced Equivalent At Proportional Rates)	25 Pounds	12 kg
Mycorrhizal Inoculum	per manufacturer	per manufacturer
Water Management Gel	per manufacturer	per manufacturer

The contractor shall create a trench for drainage purposes around the entire bed. All beds shall be built as "raised" beds. Beds shall be raked smooth and dirt lumps, stones, sticks, grass and other foreign matter shall be removed. Finish grades of bed trenches next to walks or buildings shall be 1 to 2 inches (25 to 50 mm) below finish grade of adjoining surfaces unless otherwise shown on the plans or as directed.

(k) Mulching: Mulch shall be placed uniformly to a minimum depth of 3 inches (75 mm) within the planting saucers and bed areas and watered. When plants are planted in rows or groups not more than 5 feet (1.5 m) apart, the entire area between the saucers shall be mulched. Avoid placing mulch directly around the trunks of trees and the stems of shrubs.

(l) Weeding: Weeds shall be removed from bed areas, the planting basin of each plant and groups of plants, including saucer walls. The contractor shall mow, for a radial distance of 5 feet (1.5 m), around plant materials not planted in beds. Use of selective herbicides will be permitted, provided it is an approved contact-type compatible with plants and provided the grass in the 10-foot (3 m) circle has been cut to a satisfactory height. Weeding shall be performed as directed to maintain a neat appearance throughout the period of establishment and replacement.

719.07 PERIOD OF ESTABLISHMENT AND REPLACEMENT.

Upon completion of planting and providing all plants are in place, living and conforming to these specifications, this portion of the contract will be given provisional acceptance.

(a) Period of Establishment: The contractor shall care for planted areas for a period of establishment, which shall be one full growing season, after provisional acceptance is made. A growing season shall begin April 16 and extend to October 31. During this period of establishment, the contractor shall preserve plants in a healthy, growing condition. Such plant establishment work shall include cultivation, weeding, watering, pruning, controlling insects, pests and disease and other work determined necessary by the engineer to ensure healthy plant growth. The contractor shall contact the engineer every week and outline activities which will be performed on the project. Failure to contact the engineer weekly and perform activities will result in a 1 percent reduction of the landscape contract amount, for each week of noncompliance before final payment. The contractor shall weed in the vicinity of plants, place mulch, and water the plants as required. During the period of establishment, the contractor shall maintain a neat and clean appearance of planting areas.

(b) Replacement: Plants that show signs of failure to grow at any time, or which are so injured or damaged as to render then unsuitable for the purpose intended, as determined by the engineer, shall be removed and replaced. Unless otherwise directed by the engineer, the contractor shall complete replacement of unsuitable plants within 15 calendar days after the engineer marks

or otherwise indicates that the plants shall be replaced. Failure to comply in the time allotted will result in having the costs of these replacement plants deducted from the contract amount upon final payment, while the contractor shall remain liable for the original contract specifications. Replacement planting shall comply with the spacing and size requirements specified for the plants being replaced. Replacement ground cover plants shall be the same species as specified for the ground cover being replaced. Other replacement plants shall be the same species as the plants being replaced unless the engineer, after consultation with the Department's Landscape Architect, approves the substitution of alternative species of plants in accordance with the provisions in this subsection. Replacement plants shall be furnished and planted by the contractor at the contractor's expense.

(c) Semifinal Inspection: A semifinal inspection by the contractor and the engineer will be held 2 weeks prior to the end of the period of establishment to determine the acceptability of plants. Replacement planting, as required, shall be performed in accordance with Subsections 719.06(a) and 719.07(b). Unsatisfactory plants shall be replaced in kind, quantity and size with live, healthy plants installed as originally specified. Substitute varieties of plants shall be used only when approved. These replacement plantings shall be made at no direct pay. Only these replacements made at this time will not require a period of establishment. However, all plants that must be replaced at the semifinal inspection will be replaced at the contractor's expense. Upon completion of said replacements and prior to final acceptance of the project, the contractor shall weed around plants and remove discarded materials, rubbish and equipment from areas of the right-of-way affected by operations.

(d) Final Acceptance: Final inspection of plant material will be held approximately 2 weeks after replacement planting has been completed. Final acceptance will be made if all plants are in place, alive and are in conformance with plans and specifications. Plants that are unsatisfactory at the time of final inspection of the project shall be replaced by the contractor in kind, quantity and size with live, healthy plants installed as originally specified. Substitute varieties of plants shall be used only when approved. These replacement plantings shall be made at no direct pay.

719.08 MEASUREMENT.

Furnishing and planting the various types and sizes of plant materials will be measured per each. No measurement for payment will be made for plant hole preparation, backfill material, fertilizer tablets, plant maintenance or plant replacement of individual trees and shrubs either inside or outside of bed areas. Water will be measured and paid for in accordance with Section 714. Bed preparation and top dressing mulch will be measured by the square yard (sq m). When an item for "Landscaping" is included in the contract, the furnishing and planting of all required plant materials

under the contract will be measured on a lump sum basis.

719.09 PAYMENT.

Payment for furnishing and planting the various types and sizes of plant materials will be made at the contract unit price per each. Payment for bed preparation and top dressing mulch will be made at the contract unit prices. When an item for "Landscaping" is included in the contract, payment will be made at the contract lump sum price. Partial payment during the period of establishment will be limited to 75 percent of the contract price upon provisional acceptance. Midway through the period of establishment, if the project engineer's records show that plants have been properly maintained and replacement plantings have been completed, 15 percent of the contract price for landscaping items will be paid, minus any reduction in accordance with Subsection 719.07(b). At the end of the full period of establishment, if the project engineer's records show that plants have been properly maintained and replacement plantings have been completed, the remaining 10 percent of the contract price for landscaping items will be paid, minus any reduction in accordance with Subsections 719.07(a) and (b). Payment for adjustment of pH will be made in accordance with Subsection 109.04. Payment will be made under:

Item No.	Pay Item	Pay Unit
719-01	Plants (Type, Size)	Each
719-02	Top Dressing Mulch (__inch (__mm) Depth)	Square Yard (Sq m)
719-03	Bed Preparation (__inch (__mm) Depth)	Square Yard (Sq m)
719-04	Landscaping	Lump Sum

Appendix D

American National Standards Institute (ANSI)

A300 Standards

BSR A300 Part 1 Pruning is in a public review period that started on Feb. 9, 2007.

The Part 1 Pruning public review period is a full 45-day review for the whole proposed revision standard and ends on March 26, 2007.

The following standards were presented for public review as part of ANSI requirements for development of American National Standards.

Appendix D

1 ANSI A300 standards

1.1 Scope

ANSI A300 standards present performance standards for the care and management of trees, shrubs, and other woody plants.

1.2 Purpose

ANSI A300 standards are intended as guides for federal, state, municipal and private entities including arborists, property owners, property managers, and utilities in the development of their management specifications.

1.3 Application

ANSI A300 standards shall apply to any person or entity engaged in the management of trees, shrubs, or other woody plants.

2 Part 1 – Pruning standards

2.1 Purpose

The purpose of this document is to provide standards for developing specifications for tree pruning.

2.2 Reasons for pruning

The reasons for tree pruning may include, but are not limited to, reducing risk, managing tree health and structure, improving aesthetics, or achieving specific objectives. Pruning practices for agricultural, horticultural production, or silvicultural purposes are exempt from this standard.

2.3 Implementation

2.3.1 Specifications for pruning should be written and administered by an arborist.

2.3.2 Pruning specifications shall be adhered to.

2.4 Safety

2.4.1 Pruning shall be implemented by an arborist, familiar with the practices and hazards of pruning and the equipment used in such operations.

2.4.2 This standard shall not take precedence over applicable industry safe work practices.

2.4.3 Operations shall comply with applicable Federal and State Occupational Safety and Health standards, ANSI Z133.1, FIFRA, Federal EPA, as well as state and local

regulations.

3 Normative references

The following standards contain provisions, which, through reference in the text, constitute provisions of this American National Standard. All standards are subject to revision, and parties to agreements based on this American National Standard shall apply the most recent edition of the standards indicated below.

ANSI Z60.1, Nursery stock

ANSI Z133.1, Arboriculture – Safety requirements

29 CFR 1910, General industry 1)

29 CFR 1910.268, Telecommunications 1)

29 CFR 1910.269, Electric power generation, transmission, and distribution 1)

29 CFR 1910.331 - 335, Electrical safety-related work practices 1)

4 Definitions

4.1 anvil-type pruning tool: A pruning tool that has a sharp, straight blade that cuts against a flat metal cutting surface, in contrast to a hook-and-blade-type pruning tool (4.22).

4.2 arboriculture: The art, science, technology, and business of commercial, public, and utility tree care.

4.3 arborist: An individual engaged in the profession of arboriculture who, through experience, education, and related training, possesses the competence to provide for or supervise the management of trees and other woody plants.

4.4 arborist trainee: An individual undergoing on-the-job training to obtain the experience and the competence required to provide for or supervise the management of trees and other woody plants. Such trainees shall be under the direct supervision of an arborist.

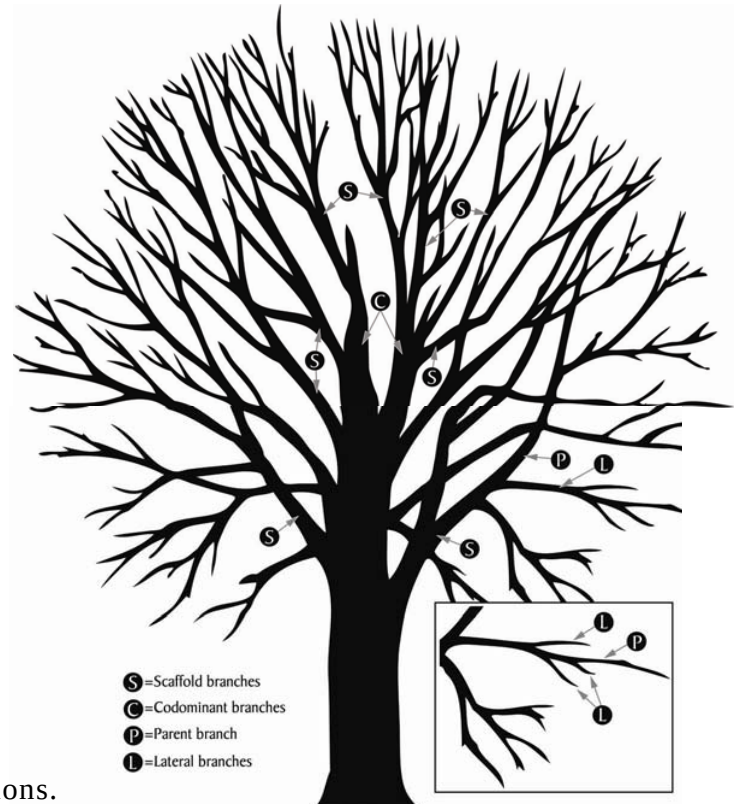


Figure 4.5 Standard branch definitions.

4.5 branch: A shoot or stem growing from a parent branch or stem (See Fig. 4.5).

4.6 branch bark ridge: The raised area of bark in the branch crotch that marks where the branch and parent stem meet. (See Figs. 5.3.2, 5.3.3, and 5.3.7).

4.7 branch collar: The swollen area at the base of a branch.

4.8 callus: Undifferentiated tissue formed by the cambium around a wound.

4.9 cambium: The dividing layer of cells that forms sapwood (xylem) to the inside and inner bark (phloem) to the outside.

4.10 clean: Selective pruning to remove one or more of the following non-beneficial parts: dead, diseased, and/or broken branches (5.6.3.1).

4.11 climbing spurs: Sharp, pointed devices affixed to a climber's boots used to assist in climbing trees. (syn.: gaffs, hooks, spurs, spikes, climbers)

4.12 closure: The process by which a woody plant covers a pruning cut or injury with woundwood.

4.13 codominant branches/codominant leaders: Forked branches arising from a common junction, having nearly the same size diameter and lacking a branch collar (See Fig. 4.5).

4.14 crown: The leaves and branches of a tree measured from the lowest branch on the trunk to the top of the tree.

4.15 decay: The degradation of woody tissue caused by microorganisms.

4.16 espalier: The combination of pruning, supporting, and training branches to orient a plant in one plane (5.7).

4.17 establishment: The point after planting when a tree's root system has grown sufficiently into the surrounding soil to support shoot growth and anchor the tree.

4.18 facility: A structure or equipment used to deliver or provide protection for the delivery of an essential service, such as electricity or communications.

4.19 frond: A leaf of a palm.

4.20 heading: The process of using heading cuts to meet an established objective.

4.21 heading cut: A cut that reduces a one-year-old shoot back to a bud, or cutting a branch to a stub or branch that is not large enough to assume the terminal role.

4.22 hook-and-blade-type pruning tool: A pruning tool that has a sharp curved blade that overlaps a supporting hook; in contrast to an anvil-type pruning tool (4.1). (syn.: by-pass pruner)

4.23 interfering branches: Crossing, rubbing, or upright branches that have the potential to dam-

age tree structure and/or health.

4.24 internodal cut: A cut located between lateral branches or buds.

4.25 job briefing: The communication of at least the following subjects for arboricultural operations: hazards associated with the job, work procedures involved, special precautions, electrical hazards, job assignments, and personal protective equipment.

4.26 lateral branch: A shoot or stem growing from another branch (See Fig. 4.5).

4.27 leader: A dominant, typically upright, stem – usually the main trunk. There can be several leaders in one tree.

4.28 lion's tailing: The removal of an excessive number of inner and/or lower lateral branches from parent branches. Lion's tailing is not an acceptable pruning practice (5.5.9).

4.29 live crown ratio: Crown height relative to overall height.

4.30 mechanical pruning: A utility pruning technique where large-scale power equipment is used to cut back branches (5.10.2.2).

4.31 parent branch or stem: A tree trunk or branch from which other branches or shoots grow (See Fig. 4.5).

4.32 peeling: For palms: The removal of dead frond bases without damaging living trunk tissue at the point they make contact with the trunk. (syn.: shaving)

4.33 petiole: A stalk of a leaf or frond.

4.34 phloem: Inner bark conducting tissues that transport organic substances, primarily carbohydrates and hormones, from leaves and stems to other parts of the plant.

4.35 pollarding: pruning type in which tree branches are initially headed and then reduced on a regular basis without disturbing the callus knob (5.9).

4.36 pruning: The selective removal of plant parts to meet specific goals and objectives.

4.37 qualified line-clearance arborist: An individual who, through related training and on-the-job experience, is familiar with the equipment and hazards in line clearance and has demonstrated the ability to perform the special techniques involved. This individual may or may not be currently employed by a line-clearance contractor.

4.38 qualified line-clearance arborist trainee: An individual undergoing line-clearance training under the direct supervision of a qualified line-clearance arborist. In the course of such training, the trainee becomes familiar with the equipment and hazards in line clearance and demonstrates ability

in the performance of the special techniques involved.

4.39 raise: Selective pruning to provide vertical clearance (5.6.3.2).

4.40 reduce: Selective pruning to decrease height and/or spread (5.6.3.3).

4.41 reduction cut: A cut that decreases the length of a branch or stem back to a lateral large enough to assume the terminal role.

4.42 remote/rural areas: Locations associated with very little human activity, land improvement, or development.

4.43 restoration: Selective pruning to redevelop structure, form, and appearance of severely headed, vandalized, or damaged trees (5.6.3.4).

4.44 scaffold branch: A larger branch that helps to form the main structure of the crown (See Fig. 4.5).

4.45 shall: As used in this standard, denotes a mandatory requirement.

4.46 shoot: Stem or branch and its leaves, especially when young.

4.47 should: As used in this standard, denotes an advisory recommendation.

4.48 specifications: A document stating a detailed, measurable plan or proposal for provision of a product or service.

4.49 sprouts: New shoots originating from epicormic or adventitious buds. (syn.: epicormic shoots)

4.50 standards, ANSI A300: Performance parameters established by industry consensus as a rule for the measure of quantity, weight, extent, value, or quality.

4.51 structural pruning: Selective pruning to improve branch architecture (5.6.3.5).

4.52 stub: An undesirable length of branch remaining after a break or incorrect pruning cut is made.

4.53 subordination: The reduction of leaders or branches to decrease their growth rate and meet an objective.

4.54 thin: Selective pruning to reduce density of live branches (5.6.3.6).

4.55 thinning cut: A cut that removes a branch at its point of origin.

4.56 throwline: A small, lightweight line with a weighted end used to position a climber's rope in a tree.

4.57 topping: The reduction of a tree's size using internodal cuts that shorten branches. Topping is not an acceptable pruning practice (5.5.9).

4.58 tracing: The removal of loose, damaged tissue from in and around the wound.

4.59 trunk: The main woody part of a tree beginning at and including the trunk flare and extending up into the crown from which scaffold branches grow.

4.60 trunk flare: 1. The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots. 2. The area of transition between the root system and the stem or trunk.

4.61 urban/residential areas: Locations, such as populated areas including public and private property, that are normally associated with human activity.

4.62 utility: A public or private entity that delivers a public service, such as electricity or communications.

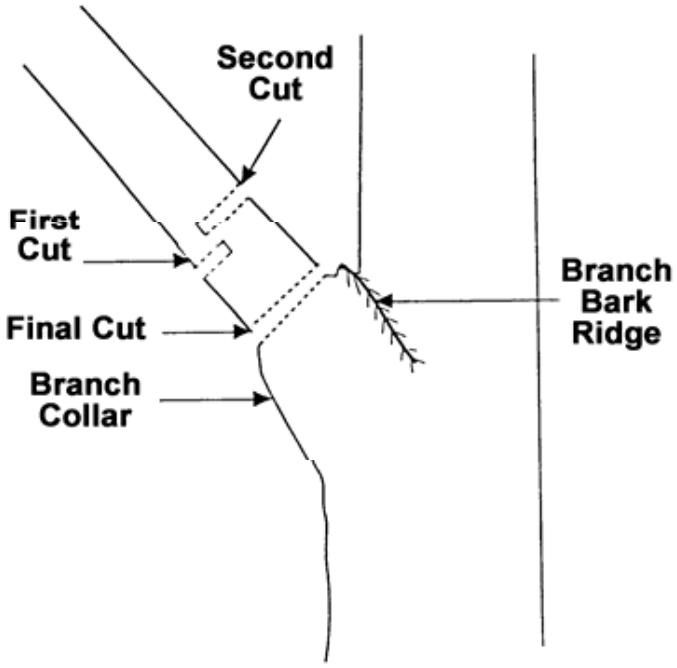
4.63 utility space: The physical area occupied by a utility's facilities and the additional space required to ensure its operation.

4.64 vista prune: Selective pruning to enhance a specific view without jeopardizing the health of the tree (5.6.3.7).

4.65 wound: An opening that is created when the bark of a live branch or stem is cut, penetrated, damaged, or removed.

4.66 woundwood: Partially differentiated tissue responsible for closing wounds. Woundwood develops from callus associated with wounds.

4.67 xylem: Wood tissue. Active (translocating) xylem is sapwood; inactive (non-translocating) xylem functions mainly for support and chemical deposition.



5 Pruning practices

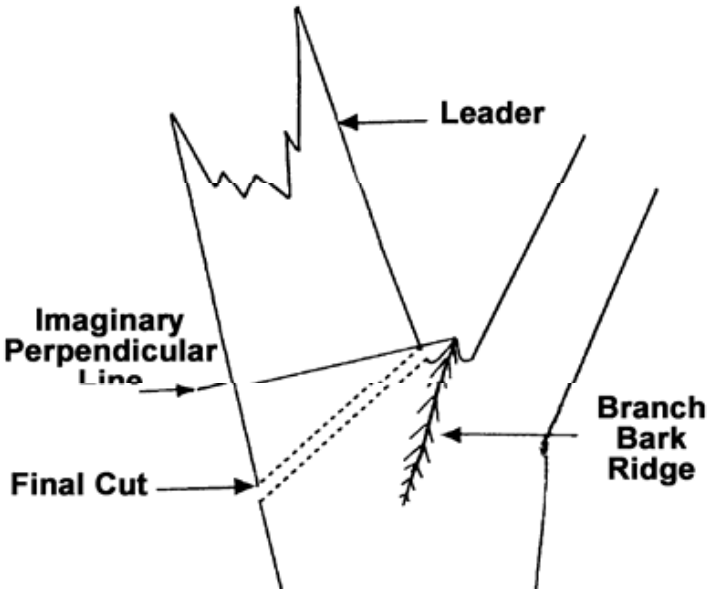
5.1 Tree inspection

5.1.1 An arborist or arborist trainee shall visually inspect each tree before beginning work.

5.1.2 If a condition is observed requiring attention beyond the original scope of the work, the condition should be reported to an immediate supervisor, the owner, or the person responsible for authorizing the work.

5.2 Tools and equipment

5.2.1 Equipment and work practices that damage living tissue and bark beyond the scope of the work should be avoided.



5.2.2 Climbing spurs shall not be used when climbing trees for the purpose of pruning.

Exceptions:

- when branches are more than throwline distance apart and there is no other means of climbing the tree;

- when the bark is thick enough to prevent damage to the cambium;

- in remote or rural utility rights-of-way.

5.3 Pruning cuts

One of the following pruning cuts, or any combination of the following pruning cuts, shall be used to achieve the established objective.

A. Thinning cut: A cut that removes a branch at its point of origin.

B. Reduction cut: A cut that decreases the length of a branch or stem back to a lateral large enough to assume the terminal role.

C. Heading cut: A cut that reduces a one-year-old shoot back to a bud, or cutting a branch to a

stub or branch that is not large enough to assume the terminal role.

5.3.1 Pruning tools used in making pruning cuts shall be sharp.

5.3.2 A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent branch without cutting into the branch bark ridge or branch collar or leaving a stub (see Figure 5.3.2).

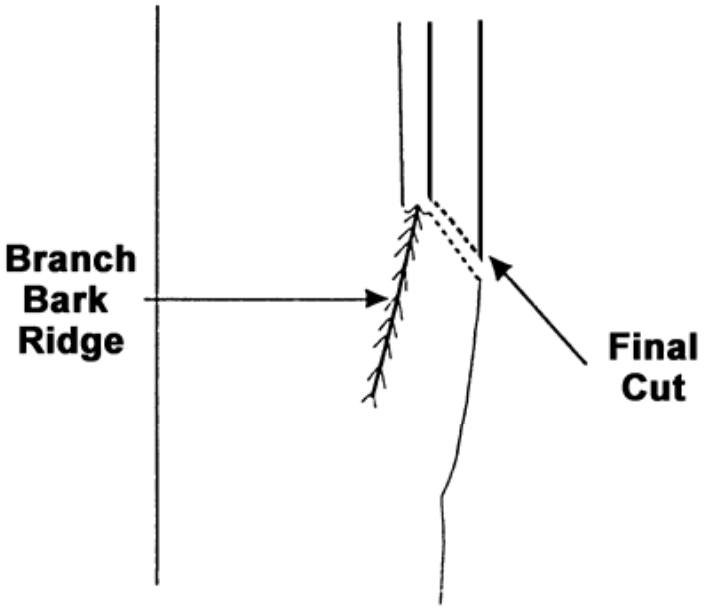


Figure 5.3.2. A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent branch without cutting into the branch bark ridge or branch collar or leaving a stub. Branches too large to support with one hand shall be precut to avoid splitting of the wood or tearing of the bark (See Annex A – *Pruning cut guideline*).

5.3.3 A pruning cut that reduces the length of a branch or parent stem should bisect the angle between its branch bark ridge and an imaginary line perpendicular to the branch or stem (see Figure 5.3.3).

Figure 5.3.3. A pruning cut that reduces the length of a branch or parent stem should bisect the angle between its branch bark ridge and an imaginary line perpendicular to the branch or stem.

5.3.4 The final cut should result in a flat surface with adjacent bark firmly attached.

5.3.5 When removing a dead branch, the final cut shall be made just outside the collar of living tissue.

5.3.6 Tree branches shall be removed in such a manner so as not to cause damage to other parts of the tree or to other plants or property. Branches too large to support with one hand shall be precut to avoid splitting of the wood or tearing of the bark (see Figure 5.3.2). Where necessary, ropes or other equipment shall be used to lower large branches or portions of

branches to the ground.

5.3.7 A cut that removes a branch with a narrow angle of attachment should be made from the outside of the branch to prevent damage to the parent branch (see Figure 5.3.7).

Figure 5.3.7. A final cut that removes a branch with a narrow angle of attachment should be made from the outside of the branch to prevent damage to the parent branch.

5.3.8 Severed branches shall be removed from the crown upon completion of the pruning, at times when the tree would be left unattended, or at the end of the workday.

5.4 Wound treatment

5.4.1 Wound treatments should not be used to cover wounds or pruning cuts, except when recommended for disease, insect, mistletoe, or sprout control, or for cosmetic reasons.

5.4.2 Wound treatments that are damaging to tree tissues shall not be used.

5.4.3 When tracing wounds, only loose, damaged tissue should be removed.

5.5 Pruning objectives

5.5.1 Pruning objectives shall be established prior to beginning any pruning operation.

5.5.2 Established objectives should be specified in writing (See Annex B – *Specification writing guideline*).

5.5.3 When repeated pruning is necessary for a tree to avoid conflicts with elements such as infrastructure, view, traffic, or utilities, removal or relocation shall be considered.

5.5.4 To obtain the defined objective, the growth cycles and structure of individual species and the type of pruning to be performed should be considered.

5.5.5 Not more than 25 percent of the foliage should be removed within an annual growing season. The percentage and distribution of foliage to be removed shall be adjusted according to the plant's species, age, health, and site.

5.5.6 When pruning to a lateral, the remaining lateral branch should be large enough to assume the terminal role.

5.5.7 Pruning cuts should be made in accordance with section 5.3 *Pruning cuts*.

5.5.8 Heading cuts should be considered acceptable when establishing objectives.

5.5.9 Topping and lion's tailing shall be considered unacceptable pruning practices for trees.

5.6 Pruning types

5.6.1 All pruning types should be achieved with thinning or reducing cuts.

5.6.2 Heading cuts shall be considered acceptable for shrub pruning or in limited situations to meet established objectives.

5.6.3 Specifications for pruning should consist of, but are not limited to, one or more of the following types:

5.6.3.1 Clean: Cleaning shall consist of selective pruning to remove one or more of the following non-beneficial parts: dead, diseased, and/or broken branches.

5.6.3.1.1 Location of parts to be removed shall be specified.

5.6.3.1.2 Size range of parts to be removed shall be specified.

5.6.3.2 Raise: Raising shall consist of selective pruning to provide vertical clearance.

5.6.3.2.1 Vertical clearance shall be specified.

5.6.3.2.2 Location and size range of parts to be removed should be specified.

5.6.3.2.3 Live crown ratio should not be reduced to less than 50 percent.

5.6.3.3 Reduce: Reducing shall consist of selective pruning to decrease height and/or spread.

5.6.3.3.1 Consideration shall be given to the ability of a species to tolerate this type of pruning.

5.6.3.3.2 Location of parts to be removed or clearance requirements should be specified.

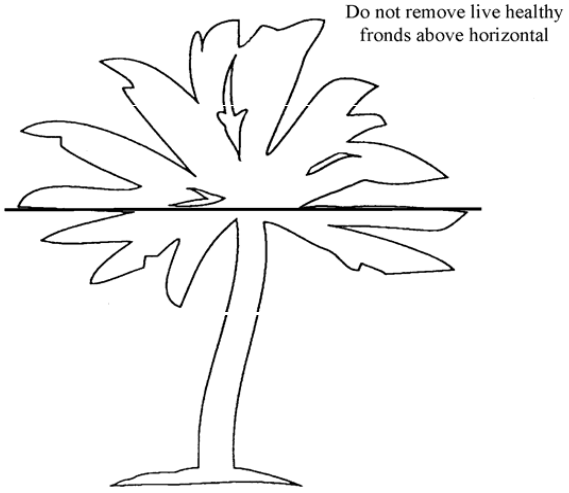
5.6.3.3.3 Size range of parts should be specified.

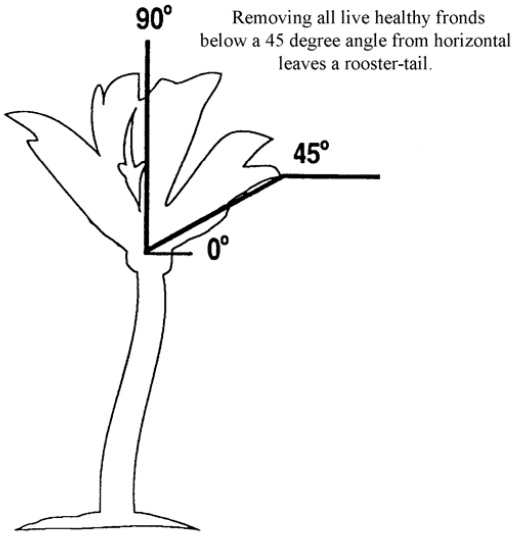
5.6.3.4 Restoration: Restoration shall consist of selective pruning to redevelop structure, form, and appearance of severely headed, vandalized, or damaged trees.

5.6.3.4.1 Location in tree, size range of parts, and percentage of sprouts to be removed should be specified.

5.6.3.5 Structural prune: Structural pruning shall consist of selective pruning to improve branch architecture primarily on young- and medium-aged trees.

5.6.3.5.1 Size and location of leaders or branches to be subordinated or removed should be speci-





fied.

5.6.3.5.2 Central leader(s) should be selected for development as appropriate.

5.6.3.5.3 Strong, properly spaced scaffold branch structure should be selected and maintained.

5.6.3.5.4 Temporary branches should be retained or reduced as appropriate.

5.6.3.5.5 Interfering and poorly attached branches should be removed or reduced.

5.6.3.5.6 At planting, pruning should be limited to cleaning (5.6.3.1).

5.6.3.6 Thin: Thinning shall consist of selective pruning to reduce density of live branches.

5.6.3.6.1 Thinning should result in an even distribution of branches on individual branches and throughout the crown.

5.6.3.6.2 Not more than 25 percent of the crown should be removed within an annual growing season.

5.6.3.6.3 Location of parts to be removed shall be specified.

5.6.3.6.4 Percentage of foliage and size range of parts to be removed shall be specified.

5.6.3.7 Vista prune: Vista pruning shall consist of selective pruning to enhance a specific view without jeopardizing the health of the tree.

5.6.3.7.1 Pruning type(s) shall be specified.

5.6.3.7.2 Size range of parts, location in tree, and percentage of foliage to be removed should be specified.

5.7 Espalier

5.7.1 Branches that extend outside the desired plane of growth shall be pruned or tied back.

5.7.2 Ties should be replaced as needed to prevent girdling the branches at the attachment site.

5.8 Palm pruning

5.8.1 Palm pruning should be performed when fronds, fruit, or loose petioles may create a dangerous condition.

5.8.2 Live healthy fronds should not be removed.

5.8.3 Live, healthy fronds above horizontal shall not be removed. Exception: Palms encroaching on electric supply lines (See Fig. 5.8.3a and 5.8.3b).

Figure 5.8.3a Frond removal location.

Figure 5.8.3b A rooster-tailed palm.

5.8.4 Fronds removed should be severed close to the petiole base without damaging living trunk tissue.

5.8.5 Palm peeling (shaving) should consist of the removal of only the dead frond bases at the point they make contact with the trunk without damaging living trunk tissue.

5.9 Pollarding

5.9.1 Consideration shall be given to the ability of the individual tree to respond to pollarding.

5.9.2 Management plans shall be made prior to the start of the pollarding process for routine removal of sprouts.

5.9.3 Heading cuts shall be made at specific locations to start the pollarding process. After the initial cuts are made, no additional heading cuts shall be made.

5.9.4 Sprouts growing from the cut ends of branches (knuckles) should be removed annually during the dormant season.

5.10 Utility pruning

5.10.1 General

5.10.1.1 The purpose of utility pruning is to prevent the loss of service, comply with mandated

clearance laws, prevent damage to equipment, avoid access impairment, and uphold the intended usage of the facility/utility space.

5.10.1.2 Only a qualified line clearance arborist or line clearance arborist trainee shall be assigned to line clearance work in accordance with ANSI Z133.1, 29 CFR 1910.331 – 335, 29 CFR 1910.268 or 29 CFR 1910.269.

5.10.1.3 Utility pruning operations are exempt from requirements in subclause 5.1, *Tree Inspection*.

5.10.1.4 Job briefings shall be performed as outlined in ANSI Z133.1, subclause 3.1.4.

5.10.2 Utility crown reduction pruning

5.10.2.1 Urban/residential environment

5.10.2.1.1 Pruning cuts should be made in accordance with subclause 5.3, *Pruning cuts*. The following requirements and recommendations of 5.10.2.1.1 are repeated from subclause 5.3 *Pruning cuts*.

5.10.2.1.1.1 A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent branch, without cutting into the branch bark ridge or collar, or leaving a stub (see Figure 5.3.2).

5.10.2.1.1.2 A pruning cut that reduces the length of a branch or parent stem should bisect the angle between its branch bark ridge and an imaginary line perpendicular to the branch or stem (see Figure 5.3.3).

5.10.2.1.1.3 The final cut shall result in a flat surface with adjacent bark firmly attached.

5.10.2.1.1.4 When removing a dead branch, the final cut shall be made just outside the collar of living tissue.

5.10.2.1.1.5 Tree branches shall be removed in such a manner so as not to cause damage to other parts of the tree or to other plants or property. Branches too large to support with one hand shall be precut to avoid splitting of the wood or tearing of the bark (see Figure 5.3.2). Where necessary, ropes or other equipment shall be used to lower large branches or portions of branches to the ground.

5.10.2.1.1.6 A final cut that removes a branch with a narrow angle of attachment should be made from the bottom of the branch to prevent damage to the parent branch (see Figure 5.3.7).

5.10.2.1.2 A minimum number of pruning cuts should be made to accomplish the purpose of facility/utility pruning. The natural structure of the tree should be considered.

5.10.2.1.3 Trees directly under and growing into facility/utility spaces should be removed or

pruned. Such pruning should be done by removing entire branches or by removing branches that have laterals growing into (or once pruned, will grow into) the facility/utility space.

5.10.2.1.4 Trees growing next to, and into or toward, facility/utility spaces should be pruned by reducing branches to laterals (5.3.3) to direct growth away from the utility space or by removing entire branches. Branches that, when cut, will produce sprouts that would grow into facilities and/or utility space should be removed.

5.10.2.1.5 Branches should be cut to laterals or the parent branch and not at a pre-established clearing limit. If clearance limits are established, pruning cuts should be made at laterals or parent branches outside the specified clearance zone.

5.10.2.2 Rural/remote locations – mechanical pruning

Cuts should be made close to the main stem, outside of the branch bark ridge and branch collar. Precautions should be taken to avoid stripping or tearing of bark or excessive wounding.

5.10.3 Emergency service restoration

During a utility-declared emergency, service must be restored as quickly as possible in accordance with ANSI Z133.1, 29 CFR 1910.331 – 335, 29 CFR 1910.268, or 29 CFR 1910.269. At such times it may be necessary, because of safety and the urgency of service restoration, to deviate from the use of proper pruning techniques as defined in this standard. Following the emergency, corrective pruning should be done as necessary.

Annex A – Pruning cut guideline

A-1 3-cut method

Multiple cutting techniques exist for application of a 3-cut method. A number of them may be used to implement an acceptable 3-cut method.

A-1.1 The technique depicted in *Figure 5.3.2* demonstrates one example of a 3-cut method that is common to hand saw usage. It is not intended to depict all acceptable 3-cut method techniques.

Annex B – Specification writing guideline

The following is a list of specification writing action (i.e., *Assessment*) and a notation of status (required or optional).

B-1 Assessment (required).

Consider the growth habits of individual tree species within the local environment in order to develop pruning specifications.

B-2 Notification of compliance (required).

Include a compliance statement to notify consumer, such as: *Pruning shall be done in accordance with* ANSI A300 (Part 1) Pruning *standards*.

B-2.1 Additional notification information (optional).

Include additional information in specification or terms, such as: Work procedures will follow the requirements (indicated by the word *shall) and* recommendations (indicated by the word *should) of the ANSI A300 Part 1* Pruning standards. Note: On occasion, the arborist is allowed to deviate from a recommendation based on the unique needs of a particular job, tree species, or work site.

B-3 Pruning specification (required)

B-3.1 List tree(s) to be pruned and note location on property (required).

B-3.2 State pruning objective(s), such as (required):

Hazard reduction

Risk reduction

Structural improvement

Create vista

Create clearance

Aesthetics improvement

Other, specify

B-3.3 Explain objective in detail (optional).

B-3.4 Specify one or more of the following pruning types and associated size specifications to accomplish the objective(s) (required):

Clean (Selective pruning to remove one or more of the following non-beneficial parts: dead, diseased, and/or broken branches.)

Location of parts to be removed in tree (required):

Size range of parts to be removed (required):

Other (optional):

Raise (Selective pruning to provide vertical clearance.)

Vertical clearance (required):

Location of parts to be removed in tree (optional):

Size range of parts to be removed (optional):

Other (optional):

Reduce (Selective pruning to decrease height and/or spread.)

Clearance (optional):

Location of parts to be removed in tree (optional): Size range of parts to be removed (optional):

Other (optional):

Restoration (Selective pruning to redevelop structure, form, and appearance of severely headed, vandalized, or damaged trees.)

Specify other pruning type(s) to be used (required):

Size range of parts to be removed (optional):

Location of parts to be removed in tree (optional):

Percentage of sprouts to be removed (optional):

Other (optional):

Structural prune (Selective pruning to improve branch architecture primarily on young- and medium-aged trees.)

Location in tree of leaders/branches to be subordinated (required)

Size range of leaders/branches to be subordinated (required)

Location in tree of leaders/branches to be removed (required)

Size range of leaders/branches to be removed (required)

Other (optional):

Thin (Selective pruning to reduce density of live branches.)

Location of parts to be removed (required):

Size range of parts to be removed (required):

Percentage of foliage to be removed (required):

Other (optional):

Vista prune (Selective pruning to enhance a specific view without jeopardizing the health of the tree.)

Specify other pruning type(s) to be used (required):

Size range of parts to be removed (optional):

Location (optional):

Percentage of foliage to be removed (optional):

Other (optional):

B-3.5 Sample pruning specifications

Example 1: The tree is a 20-inch diameter red oak. A client would like one limb over-hanging a pool thinned to allow more light penetration wants to improve the tree's appearance and to limit any other branches from dropping material as possible.

Pruning Specification

All pruning will conform to ANSI A300-Part 1 Pruning standards.

Tree: 20-inch diameter red oak in back yard of residence.

Objective: Remove dead branches and improve aesthetics. Allow greater light penetration for the pool area.

Pruning: Clean entire tree. Clean branches 2-inch diameter or greater. Reduce the length of the limb overhanging the pool by 10 feet. Thin the remaining portion of the limb by removing approximately 20 percent of laterals of 1-inch to 3-inch diameter.

Example 2: A public street planting of nine silver maples, all approximately 18-inch diameter or slightly smaller. The trees are neglected with ample dead branches. In addition the city has decided to increase vertical clearance for pedestrians and non-commercial vehicles. There are no overhead utilities.

Pruning Specification

All pruning will conform to ANSI A300-Part 1 Pruning standards.

Trees: Nine, approximately 18-inch silver maples on _____ residential street. Trees are marked with _____ .

Objective: Reduce risk to public from falling dead branches. Provide clearance for vehicles and pedestrians.

Pruning: Clean entire crown of the trees. Clean branches 3-inch diameter or greater. Raise to provide a minimum of 10 feet of vertical clearance above the sidewalk and over the street.

Example 3: A 2½-foot diameter white pine in back yard. The tree is healthy and had been well-cared for. New clients want to improve the view of a lake.
Pruning Specification

All pruning will conform to ANSI A300 (Part 1) Pruning standards.

Tree: 30-inch diameter white pine in back yard of residence.

Objective: Enhance the vista of the lake through south side of tree. The target vista zone will be between 20- to 50-feet high.

Pruning: Clean the vista zone on south side of tree. Clean branches 1-inch diameter or greater. Thin the vista zone by removing approximately 25 percent of the branches. Accomplish this by removing 2 large branches over 4-inch diameter in the vista zone and by thinning 25 percent of laterals 1-inch to 3-inch diameter from the remaining branches in the vista zone.

Example 4: A 40-inch diameter white oak in front yard of residence. The tree has sentimental value to client. There is significant dieback on central leader. There are some dead branches scattered throughout crown.

Pruning Specification

All pruning will conform to ANSI A300 (Part 1) Pruning standards.

Tree: 40-inch diameter white oak in front yard of residence.

Objective: Reduce risk. Extend useful life of tree by improving aesthetics.

Pruning: Clean entire tree. Clean branches 1-inch or greater. Reduce central leader back to uninjured tissue as is practical. Approximate location of cut will be approximately 30-feet high, above

the live lateral branch on south side of tree.

Example 5: A 19-inch diameter red maple in the back yard of a residence with a number of limbs overhang the house. Although the tree is close to the house, the clients want to retain the tree for shade. The clients want more clearance over the house to reduce roof and gutter maintenance and more light penetration for foundation plantings.

Pruning Specification

All pruning will conform to ANSI A300 (Part 1) Pruning standards.

Tree: 19-inch red maple in back yard of residence.

Objective: Provide clearance from roof of the house. Increase light penetration.

Pruning: Reduce the length of the 3 largest overhanging branches on the west side of the tree by 12 feet. Thin the remaining laterals from the reduced branches by removing 15% of laterals between 1-inch and 3-inch diameter. Thin other branches on the west side of tree by removing approximately 25 percent of lateral branches between 1-inch and 3-inch diameter.

Annex C – Applicable ANSI A300 interpretations

The following interpretations apply to Part 1 – *Pruning:*

C-1 Interpretation of "should" in ANSI A300 standards

"An advisory recommendation" is the common definition of "should" used in the standards development community and the common definition of "should" used in ANSI standards. An advisory notice is not a mandatory requirement. Advisory recommendations may not be followed when defensible reasons for non-compliance exist.

C-2 Interpretation of "shall" in ANSI A300 standards

"A mandatory requirement" is the common defintion of "shall" used in the standards development community and the comon definition of "shall" used in ANSI standards. A mandatory requirment is not optional and must be followed for ANSI A300 compliance.

SAMPLE PRUNING SPECIFICATIONS

Example #1:

A 2-foot diameter red oak in a back yard. The tree is reasonably healthy but has some deadwood scattered throughout due to mild dieback that occurred after pool construction. The tree has recovered from the dieback and is safe to climb. The client would like one limb over-hanging the pool thinned to allow more light penetration.

Pruning Specification: All pruning will conform to ANSI A300-Part 1 Pruning standards.

Tree: 24-inch diameter red oak in back yard of residence.

Objective: Promote health, prevent decay, and improve aesthetics. Thin branch over pool for greater light penetration.

Pruning: Clean entire tree, clean branches 2-inch diameter or greater. Thin limb on east side of tree hanging over pool, remove approximately 20 percent of foliage, thin lateral branches of 1-inch to 3-inch diameter.

Example #2:

A public street planting of nine silver maples, all approximately 2-foot diameter or slightly smaller. The trees have been somewhat neglected, and have ample deadwood, some hangers, but no major defects. In addition the city has decided to increase vertical clearance for pedestrians and vehicles. There are no overhead utilities or electrical hazards in this row of trees.

Pruning Specification: All pruning will conform to ANSI A300-Part 1 Pruning standards.

Trees: Nine, 20- to 25-inch silver maples on XXX public street.

Objective: Promote health, prevent decay, improve public safety, and improve aesthetics. Provide clearance for vehicles and pedestrians.

Pruning: Clean entire trees. Clean branches 3-inch diameter or greater. Raise to minimum of 15 foot vertical clearance.

Example #3:

A 2½-foot diameter white pine in back yard. The tree is healthy and had been well-cared for, but is in need of routine attention. New clients want to improve the view of a lake without damaging the tree.

Pruning Specification: All pruning will conform to ANSI A300 (Part 1) Pruning standards.

Tree: 30-inch diameter white pine in back yard of residence.

Objective: Promote health, prevent decay, improve aesthetics. Provide vista of lake through south side of tree.

Pruning: Clean entire tree. Clean branches 2-inch diameter or greater. Vista prune on south side of tree: Clean the vista zone on south side of tree. Clean branches 1-inch diameter or greater. Thin approximately 15 percent of foliage from the vista zone on south side of tree. Create a zone between

Appendix E

Native Plants for Landscape Use in Louisiana

US Department of Transportation,
Federal Highway Administration,
Roadside Use of Native Plants,
State Plant Listings, Louisiana

http://www.fhwa.dot.gov/environment/rdsduse/la.htm

Appendix E

Native Plants for Landscape Use in Louisiana

The following list was compiled by US Department of Transportation, Federal Highway Administration, Roadside Use of Native Plants, State Plant Listings, Louisiana

http://www.fhwa.dot.gov/environment/rdsduse/la.htm

Shrubs (deciduous)

Alnus serrulata (smooth alder)

Amelanchier arborea (downy serviceberry, shadbush, Juneberry)

Amorpha fruticosa (false indigo, Indigo bush)

Baccharis halimifolia (sea myrtle, groundsel bush)

Callicarpa americana (American beautyberry, French mulberry)

Castanea pumila (chinquapin)

Ceanothus americanus (New Jersey tea, red root)

Cephalanthus occidentalis (buttonbush)

Clethra alnifolia (summer sweet)

Cornus drummondii (rough-leaf dogwood)

Corylus americana (American hazelnut or filbert)

Erythrina herbacea (coral bean)

Euonymus americana (strawberry bush, brook euonymus, hearts-a-bustin')

Forestiera acuminata (swamp privet)

Frangula caroliniana (Carolina buckthorn)

Hydrangea quercifolia (oakleaf hydrangea)

Hypericum prolificum (shrubby St. John's wort)

Ilex verticillata (winterberry, black alder)

Itea virginica (Virginia willow, sweetspire, tassel-white)

Lindera benzoin (spicebush)

Lycium carolinianum (Christmas berry, matrimony vine)

Lyonia ligustrina (male-berry, male-blueberry)

Prunus virginiana (chokecherry)

Rhododendron canescens (wild, piedmont, or sweet azalea)

Rhododendron viscosum (swamp azalea)
Rhus aromatica (fragrant sumac)
Rhus copallinum (dwarf or winged sumac)
Rhus glabra (smooth sumac)
Rosa carolina (Carolina rose)
Rosa setigera (Illinois or prairie rose)
Sambucus canadensis (elderberry, common elder)
Sideroxylon lanuginosum ssp. lanuginosum (chittamwood, gum elastic tree)
Styrax americanus (American silverbells)
Vaccinium arboreum (sparkleberry, farkleberry)
Vaccinium elliottii (Elliott's blueberry)
Vaccinium stamineum (dearberry, squaw-huckleberry)
Vaccinium virgatum
Viburnum acerifolium (maple leaf viburnum)
Viburnum dentatum (southern arrowwood)
Viburnum nudum (possumhaw viburnum)
Viburnum prunifolium (black haw, nanny berry)
Viburnum rufidulum (southern or rusty black haw)

Shrubs (evergreen)

Ilex glabra (inkberry, bitter gallberry)
Ilex vomitoria (yaupon)
Illicium floridanum (Florida anise tree)
Leucothoe axillaris (coast leucothoe)
Myrica cerifera (wax myrtle, southern bayberry, candleberry)
Sabal minor (dwarf palmetto)

Trees (deciduous)

Acacia farnesiana (huisache, sweet acacia)

Appendix E

Acer barbatum (Florida maple, southern sugar maple)
Acer negundo (box elder)
Acer rubrum (red maple)
Acer saccharinum (silver maple)
Aesculus pavia var. pavia (red buckeye)
Betula nigra (river birch)
Carpinus caroliniana (blue beech, hornbeam, musclewood)
Carya alba (mockernut hickory)
Carya cordiformis (bitternut, swamp hickory)
Carya illinoinensis (pecan)
Carya ovata (shagbark hickory)
Carya texana (black hickory)
Celtis laevigata (sugarberry, hackberry)
Cercis canadensis (redbud)
Chionanthus virginicus (fringe tree, old man's beard)
Cornus florida (flowering dogwood)
Crataegus crus-galli (cockspur hawthorn)
Crataegus marshallii (parsley hawthorn)
Cyrilla racemiflora (leatherwood, yiti)
Diospyros virginiana (persimmon)
Fagus grandifolia (beech)
Fagus grandifolia var. grandifolia (beech)
Fraxinus americana (white ash)
Fraxinus pensylvanica (green ash)
Gleditsia triacanthos (honey locust)
Halesia diptera (American snowdrop tree, two-winged silverbell)
Hamamelis virginiana (witch hazel)
Ilex decidua (possum-haw,. deciduous holly)
Juglans nigra (black walnut)

Liquidambar styraciflua (sweet gum)
Liriodendron tulipifera (tulip tree)
Magnolia acuminata (cucumber tree)
Magnolia virginiana (sweetbay, swampbay)
Malus angustifolia (southern crabapple, wild crabapple)
Malus ioensis var. ioensis (prairie crabapple)
Nyssa sylvatica (black gum, tupelo)
Ostrya virginiana (ironwood, hophornbeam)
Oxydendrum arboreum (sourwood)
Platanus occidentalis (sycamore, plane-tree)
Populus deltoides (eastern cottonwood)
Prunus angustifolia (chickasaw plum)
Prunus mexicana (Mexican plum)
Prunus serotina (black cherry)
Ptelea trifoliata (wafer ash, common hoptree)
Quercus alba (white oak)
Quercus falcata (southern red oak, Spanish oak)
Quercus laurifolia (laurel oak)
Quercus lyrata (overcup oak)
Quercus macrocarpa (bur oak)
Quercus marilandica (blackjack oak)
Quercus phellos (willow oak)
Quercus shumardii (shumard oak)
Quercus stellata (post oak)
Quercus velutina (black oak)
Salix nigra (black willow)
Sapindus saponaria var. drummondii (soapberry)
Sassafras albidum (sassafras)
Taxodium distichum (bald cypress)

Tilia americana (American linden, basswood)
Ulmus americana (American elm)
Ulmus crassifolia (cedar elm)
Ulmus rubra (red elm, slippery elm)

Trees (evergreen)

Ilex opaca (American holly, Christmas holly)
Juniperus virginiana (eastern red cedar)
Magnolia grandiflora (southern magnolia)
Persea borbonia (red bay)
Pinus echinata (shortleaf pine)
Pinus glabra (spruce pine)
Pinus palustris (longleaf pine)
Pinus taeda (loblolly pine)
Prunus caroliniana (cherry laurel)
Quercus virginiana (live oak, coastal live oak, southern live oak)

Forbs (annuals/biennials)

Aphanostephus skirrhobasis (lazy daisy)
Castilleja indivisa (Indian paintbrush)
Dracopsis amplexicaulis (clasping leaf coneflower)
Gaillardia pulchella (Indian blanket, firewheel)
Hymenopappus artemisiifolius (old plainsman, woolly white)
Ipomopsis rubra (standing cypress)
Lobelia spicata (pale lobelia)
Marshallia caespitosa var. caespitosa (Barbara's buttons)
Oenothera biennis (common evening primrose)
Proboscidea louisianica (unicorn plant, proboscis flower, ram's horn)
Rudbeckia hirta (black-eyed Susan)

Sabatia campestris (prairie rose gentian, prairie sabatia, meadow pink)
Senecio glabellus (butterweed)
Senecio plattensis (prairie ragwort, prairie groundsel)

Forbs (perennials)

Acorus calamus (sweet flag, calamus)
Allium canadense (wild garlic)
Amsonia ciliata (blue funnel lily, blue star)
Amsonia tabernaemontana (blue star)
Anemone caroliniana (Carolina anemone, southern thimbleweed)
Antennaria spp. (pussytoes, everlasting)
Apocynum androsaemifolium (spreading dogbane)
Arisaema triphyllum (Jack-in-the-pulpit, Indian turnip)
Artemisia ludoviciana (white sage, prairie sage, artemisia)
Asclepias tuberosa (butterfly weed)
Asclepias verticillata (whorled milkweed)
Aster dumosus (bushy aster)
Aster laevis (smooth aster)
Aster oolentangiensis (sky blue aster)
Aster pilosus (frost aster)
Baptisia alba (white false indigo)
Baptisia alba var. macrophylla (cream false indigo, plains wild indigo)
Callirhoe papaver (poppy mallow)
Calylophus berlandieri (square-bud primrose, sundrops)
Chrysopsis mariana (Maryland golden aster)
Claytonia virginica (narrow-leaved spring beauty)
Coreopsis auriculata (early coreopsis)
Coreopsis grandiflora (coreopsis)
Coreopsis lanceolata (lance-leaved coreopsis)

Coreopsis tripteris (tall coreopsis)
Dalea candida (white prairie clover)
Dalea purpurea (purple prairie clover)
Delphinium carolinianum (blue larkspur)
Eryngium yuccifolium (rattlesnake master, button snake-root)
Eupatorium coelestinum (mist flower)
Eupatorium fistulosum (Joe-pye weed)
Eupatorium perfoliatum (boneset)
Fragaria virginiana (wild strawberry)
Galium triflorum (sweet-scented bedstraw)
Gentiana saponaria (closed gentian, soapwort gentian)
Hedyotis nigricans (bluets)
Helenium autumnale (common sneezeweed)
Helianthus simulans (narrow-leaved sunflower, swamp sunflower)
Helianthus strumosus (woodland sunflower)
Heliopsis helianthoides (ox-eye sunflower, false sunflower)
Hibiscus moscheutos (swamp rose mallow, marshmallow hibiscus)
Houstonia caerulea (bluets)
Houstonia longifolia var. longifolia (long-leaved bluets, pale bluets)
Houstonia procumbens (innocence)
Hymenocallis caroliniana (spider lily, rain lily)
Hypoxis hirsuta (yellow star grass)
Iris virginica (southern blue flag)
Kosteletzkya virginica (seashore mallow)
Lespedeza capitata (roundheaded bush clover)
Liatris aspera (rough blazing star, gayfeather)
Liatris elegans (gayfeather)
Liatris pycnostachya (prairie blazing star, gayfeather)
Liatris spicata (marsh blazing star; gayfeather)

Liatris squarrosa (blazing star)
Lobelia cardinalis (cardinal flower)
Lobelia siphilitica (great blue lobelia)
Manfreda virginica (rattlesnake master, false aloe)
Mitchella repens (partridge berry)
Monarda fistulosa (wild bergamot, horsemint, beebalm)
Nuphar lutea (yellow pond lily, cow lily, spatter dock)
Oenothera fruticosa (sundrops)
Orontium aquaticum (golden club)
Peltandra virginica (arrow arum)
Penstemon australis (beardtongue)
Penstemon digitalis (beardtongue)
Phlox divaricata ssp. laphamii (blue phlox, sweet William)
Phlox paniculata (summer phlox, perennial phlox)
Phlox pilosa (prairie phlox, downy phlox)
Physostegia digitalis (obedient plant)
Physostegia intermedia (obedient plant)
Podophyllum peltatum (May apple)
Polygonatum biflorum (Solomon's seal)
Potentilla simplex (common cinquefoil)
Pycnanthemum tenuifolium (slender mountain mint)
Ranunculus hispidus (early buttercup, tufted buttercup)
Ratibida pinnata (gray-headed coneflower, yellow coneflower)
Rhexia virginica (meadow beauty)
Rudbeckia grandiflora (large coneflower)
Rudbeckia subtomentosa (sweet black-eyed

Louisiana Native Plant Society
Route 1, Box 151
Saline, LA 71070

Louisiana Project Wildflower

Lafayette Natural History Museum

637 Girard Park Dr.

Appendix F

ARTICLE XVII. TREES

CODE of TERREBONNE PARISH, LOUISIANA

Codified through
Ord. No. 7282, enacted March 28, 2007.
(Supplement No. 32)

APPENDIX F

CODE

of

TERREBONNE PARISH, LOUISIANA

Codified through
Ord. No. 7282, enacted March 28, 2007.
(Supplement No. 32)

ARTICLE XVII. TREES*

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*Editor's note: Ord. No. 7251, § I, adopted Jan. 10, 2007, amended Article XVII in its entirety to read as herein set out. Former Article XVII, §§2-531--2-548, pertained to similar subject matter, and was derived from Ord. No. 6949, adopted Jan. 12, 2005; and Ord. No. 7049, adopted Oct. 12, 2005.

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Sec. 2-531. Statement of purpose.

The purpose of this article is:

(1) To preserve and protect the existing healthy trees in Terrebonne Parish which play an important ecological role in controlling soil erosion and storm water runoff. To promote trees as enhancing air quality by reducing air pollution, noise and water pollution.

(2) To further promote for the benefit of our community an understanding of the value of trees new and old as an important economic asset, environmental asset and as creating a positive image of a caring community.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-532. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Large trees: "Large trees" are greater than fifty (50) feet tall. Suitable for areas with more than two hundred (200) square feet of total planting area; in planting strip at least seven (7) feet wide or placed at least six (6) feet from pavement or wall.

Medium trees: "Medium trees" are between twenty-five (25) and fifty (50) feet tall. Suitable for spaces with one hundred (100) to two hundred (200) square feet of total planting spaces; in a planting strip at least four (4) to seven (7) feet wide; or place at least four (4) feet from pavement or wall.

Park trees: "Park trees" are herein defined as trees, shrubs, bushes and all other woody vegetation in named/designated public parks, all areas owned by the parish, or in areas to which the public has free access as a park.

Small trees: "Small trees" are less than twenty-five (25) feet tall. Useful under utility lines; suitable for areas with less than one hundred (100) square feet of total planting area; a planting strip with a width of least four (4) feet; or planted at least two (2) feet from pavement or wall.

Street trees: "Street trees" are herein defined as trees, shrubs, bushes, and all other woody vegetation on publicly dedicated street right-of-way land on either side of all public streets, avenues or ways with the parish.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-533. Creation and establishment of parish tree board.

There is hereby created and established a parish tree board for the Parish of Terrebonne, Louisiana which shall consist of seven (7) members, citizens and residents of this parish, who shall be appointed by the parish council.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-534. Term of office.

The term of the seven (7) persons to be appointed by the parish council shall be three (3) years except that the term of two (2) of the members appointed to the first board shall be for only one (1) year and the term of the two (2) members of the first board shall be for two (2) years. Initial terms shall be determined by lots at the first meeting of the board. In the event that a vacancy shall occur during the term of any member, his successor shall be appointed for the unexpired portion of the term.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-535. Compensation.

Members of the board shall serve without compensation.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-536. Duties and responsibilities.

It shall be the responsibility of the board to study, investigate, counsel and develop and/or update annually, and recommend a written plan for the care, preservation, pruning, planting, replanting, removal or disposition of trees and shrubs in parks, within public rights-of-way along streets and in other public areas. Such plan will be presented annually to the parish council and upon its acceptance and approval shall constitute the official comprehensive parish tree plan for the Parish of Terrebonne, Louisiana. The board, when requested by the parish council, shall consider, investigate, make findings, reports and recommendations upon any special matter within its authority.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-537. Operation.

The board shall elect its own officers, make its own rules and regulations and keep a journal of its proceedings. A majority of the members shall be a quorum for the transaction of business.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-538. Street tree species to be planted.

(a) Although the board recognizes that the total exclusion of any type of tree planted as a street tree would be inappropriate, it recognizes that many trees may cause problems when used as street trees. Problems usually seen include the following:

(1) Roots cause injury to sewers, pavement and utilities.

(2) Certain species may be subject to insect and disease problems.

(3) Certain species cause safety and visibility problems along streets and intersections.

Some species create messy sidewalks and pavements.

(b) As to street trees, only small trees that top out at twenty (20) feet tall and ten (10) feet wide may be planted.

(c) All street trees must be planted at least two (2) feet from the curb and two (2) feet from the sidewalk. No street tree may be planted closer than thirty (30) feet from another street tree unless approved by the Terrebonne Parish Consolidated Government.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-539. Distance from street corners and fireplugs.

No street tree shall be planted closer than thirty-five (35) feet to any street corner, measured from the point of nearest intersecting curbs or curb lines. No street tree shall be planted closer than ten (10) feet from any fireplug.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-540. Utilities.

No street trees, other than those species qualifying as small trees in section 2-538 of this article, shall be planted under or within ten (10) lateral feet of any overhead utility wire, or over or within five (5) lateral feet of any underground water line, sewer line, transmission line or other utility.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-541. Public tree care.

(a) The parish shall have the right to plant, prune, maintain and remove trees, plants and shrubs within the public street rights-of-way and public grounds, as may be necessary to insure public safety or the preserve or enhance the symmetry and beauty of such public grounds.

(b) The parish tree board may recommend removal of any street tree or part thereof which is in an unsafe condition or which by reason of its nature is injurious to sewers, electric power lines, gas lines, water lines, or other public improvements, or is affected with any injurious fungus, insect or other pest. This section does not prohibit the planting of street trees by adjacent property owners providing that the selection of said trees is in accordance with this article.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-542. Tree topping.

It shall be required as a normal practice that any person, firm, or parish department shall not top any street tree, park tree, or other tree on public property. Topping is defined as the severe cutting back of limbs to stubs larger than three (3) inches in diameter within the tree's crown to such a degree so as to remove the normal canopy and disfigure the tree. Trees severely damaged by storms or other causes, or certain trees under utility wires or other obstructions where other pruning practices are impractical may be exempted from this article.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-543. Pruning, corner clearance.

Every owner of any tree overhanging any street or right-of-way within the parish shall prune the branches so that such branches shall not obstruct the light from any street lamp or obstruct the view of any street intersection and so that there shall be a clear space of eight (8) feet above the surface of the street or sidewalk. Said owners shall remove all dead, diseased or dangerous trees, or broken or decayed limbs which constitute a menace to the safety of the public. The parish shall have the right to prune any tree or shrub on private property when it interferes with the proper spread of light along the street from a streetlight or interferes with visibility of any traffic control device or sign or the use of any parish servitude.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-544. Protection of street trees and park trees.

(a) All public trees shall be protected during construction.

(b) All street trees and park trees whose canopy falls within the excavation or construction of any building, structure, or street work, shall be guarded with a good and substantial fence, frame, or box. The construction tree guard shall be at least four (4) feet high and at a distance of one (1) foot from the tree trunk per inch of diameter of the tree trunk as measured at breast height. All building material, dirt, or other debris shall be kept outside the construction tree guard.

(c) No person shall change natural drainage, excavate any ditches, tunnels, trenches, or lay any drive within a radius of ten (10) feet from any street tree or park tree without first obtaining a written permit from the department of planning and zoning.

(d) No person shall deposit, place, store, or maintain upon any public property, any stone, brick,

sand, concrete, or other materials which may impede the free passage of water, air, fertilizer to the roots of any street tree or park tree growing therein. Sunlight to any public tree cannot be permanently blocked by placement of materials without a permit from the department of planning and zoning.

(e) Any individual subject to the requirements of this section may request a waiver of these provisions from TPCG. Any recommendation of the tree board shall be approved by a vote of the majority of the board and shall be in writing.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-545. Removal of street and park trees.

No person shall remove or otherwise disturb any street tree or park tree without first procuring a permit from the department of planning and zoning.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-546. Interference.

It shall be unlawful for any person to prevent, delay or interfere with the Terrebonne Parish Consolidated Government or the parish tree board, or any of its agents, while engaging in and about the planting, cultivating, mulching, pruning, spraying, or removing of any street trees, or park trees, or any other tree as authorized in this article.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-547. Administrative guidelines.

Permits may be applied for as set forth below:

(1) Application for permits must be made to the department of planning and zoning not less than forty-eight (48) hours in advance of the time the work is to be done.

(2) Standards of issuance. The department of planning and zoning shall issue the permit provided herein, if, in its judgment, the proposed work is desirable and the proposed method and workmanship thereof are of a satisfactory nature. Any permit shall be void if its terms are violated.

(3) Notice of completion shall be given within five (5) days to the department of planning and zoning.

(4) Any individual subject to the requirements of this article may request a waiver of these provisions from TPCG. Any recommendation of the tree board shall be approved by a vote of the majority of the board and shall be in writing. The Terrebonne Parish Consolidated Government is exempted from the permitting and criminal/civil enforcement provisions of this article.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-548. Enforcement, criminal and civil penalty and appeals.

(a) Criminal enforcement. If any person, firm or corporation violates any provision of a permit or this article, or by any means or actions prevents or attempts to prevent any employee or person authorized by the parish from carrying out the provisions of this article, a report and affidavit setting out the violation shall be signed by the planning director or his designee, and a law enforcement official shall serve notice upon the offender to appear in the City Court of Houma on the next scheduled arraignment date. Upon conviction, the violator shall be deemed guilty of a misdemeanor and may be fined a sum not to exceed five hundred dollars ($500.00) plus cost of remediation or replacement as restitution; or may be imprisoned for a term not to exceed sixty (60) days; or both in the discretion of the court. All fines collected shall be designated to the Terrebonne Parish Tree Board account.

(b) Civil enforcement. Nothing contained herein shall prohibit the appropriate authority of the Terrebonne Parish Consolidated Government from instituting a civil suit, for damages, injunction, breach of contract, or other appropriate action or proceeding, against any violator.

(Ord. No. 7251, § I, 1-10-07)

Sec. 2-549. Public awareness.

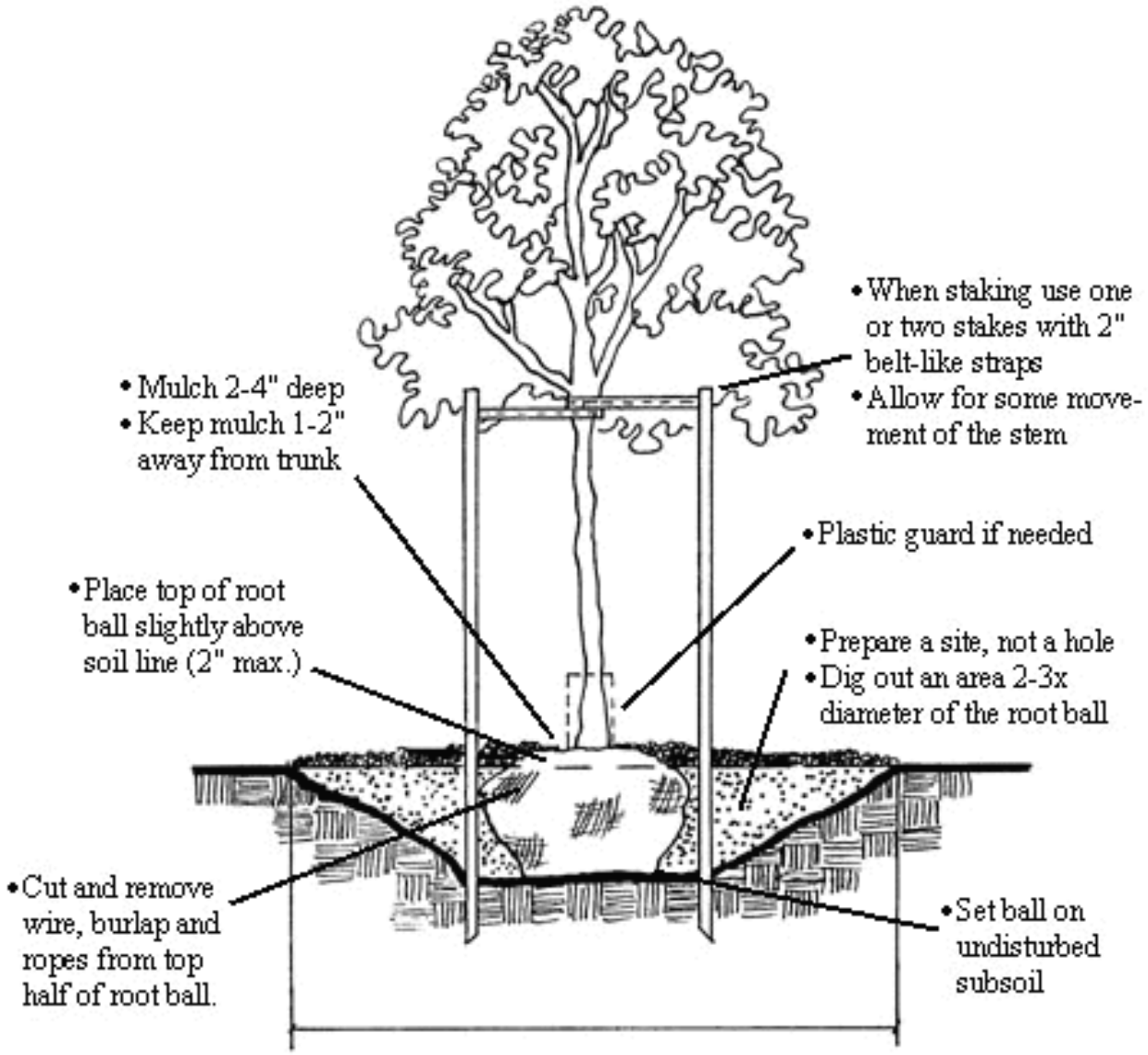
It will be recommended to developers of businesses and home developments, at the permit process, that the planting of trees and landscaping be part of their overall plan in each development.

(Ord. No. 7251, § I, 1-10-07)

Secs. 2-550--2-569. Reserved.

Appendix G

Tree Planting Detail



Appendix H

Additional Reading and Information Sources:

A Guide to Street Tree Inventory Software
http://www.na.fs.fed.us/spfo/pubs/uf/streettree/toc.htm

International Society of Arboriculture
http://www.ag.uiuc.edu/~isa/

National Arborist Association
http://www.NATLARB.com

Recognize Hazardous Defects in Trees
http://www.na.fs.fed.us/spfo/pubs/howtos/ht_haz/ht_haz.htm

Tree Care Industry Association:
http://128.241.193.252/Public/gov_standards.htm

Tree Maintenance
P.P. Pirone, Oxford University Press
200 Madison Avenue, New York, New York, 10016

Urban Forestry
Robert W. Miller, Prentice-Hall
Upper Saddle River, New Jersey, 0745

USDA Forest Service (Northeast Center for Urban and Community Forestry)
http://www.umass.edu/urbantree

Using Smart Growth Techniques as Stormwater Best Management Practices
Lisa Nisenson, principal author, US Environmental Protection Agency
#EPA231-B-05-002

This Comprehensive Terrebonne Parish Tree Management Plan was paid for with a grant from the Louisiana Department of Agriculture, Office of Forestry and Terrebonne Parish Consolidated Government.