Urban Forest Management Plan

Town of Ponce Inlet, 4300 South Atlantic Avenue
Ponce Inlet, Fl 32127

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EXECUTIVE SUMMARY

The Town of Ponce Inlet has placed considerable emphasis on the quality of life and the importance of trees.

We applaud the Town for recognizing the need to develop a strategy to manage their urban forest. To have a healthy forest requires a community to be proactive in dealing with education, maintenance, tree problems, hazard trees issues, and to prevent undo damage sustained from storms or construction.

All trees within the Town of Ponce Inlet's public lands were assessed. With grant money received from the Urban Forestry Council of Florida and with matching funds provided by the Town of Ponce Inlet, a base line study of the health of the Town's trees was completed. The data collected will allow Town staff to accurately manage and track the health of individual trees within the Town.

UFMP VISION STATEMENT

A healthy urban forest is the product of a biologically intact ecosystem and a community that recognizes the importance of its natural functions. For the continued health of the forest, the Town of Ponce Inlet should actively promote new plantings with native species, foster educational programs and maintain the structure of its trees through the use of proper pruning and planting techniques.

Purpose

The importance of forest health assessment and a long-term plan for the management of that forest cannot be understated. The tree study was conducted in 2007 resulted in the creation of a Master Tree List (MTL) of all trees on publicly-owned lands, and the development of an Urban Forestry Management Plan (UFMP). All data gathered during the study was then entered into TIMS, a Tree Inventory Management Software program developed by Native Florida Landscapes.

These tools will assist the Town in achieving its overall goal to become more efficient with use of staff time and public funds as it relates to its urban forest. For this purpose, the management of the Town's trees is essential to their vitality, stability, and co-existence with human activity and the surrounding urban development.

Scope

"The wonder is that we can look at these trees and not wonder more."
-Ralph Waldo Emerson

The Master Tree List (MTL) is a detailed inventory of all trees on publicly-owned land within the Town's city limits. Various graphs were generated to show the species breakout within these public areas to provide the Town with an understanding of where the trees are located.

The Urban Forestry Management Plan (UFMP) enumerates a variety of forestry and tree recommendations to aid in the preservation and management of Ponce Inlet's Urban Forest. It highlights issues surrounding preservation of the urban forest in our changing ecological world due to plant diseases and climate change, and describes methods for managing individual tree issues. The UFMP supplies guidelines for pruning, tree protection during construction, and recommended species and proper installation for the implementation of good urban forestry practices for use by both city employees and homeowners. The UFMP outlines a suggested a maintenance schedule. It also suggests ideas on how the Town can better interact with the general public on tree preservation issues and education. Through residents' involvement and community commitment, the preservation of this rich, dynamic and beautiful urban forest is possible.

The Tree Inventory Management Software (TIMS) is a database program for recording, storing, and modifying survey-collected data on all the trees in the Town of Ponce Inlet public areas, thus providing a tool for monitoring changes in tree health and overall forest structure. GPS-generated maps with numbered trees are provided for at-a-glance locating. User instructions on how to view the data for the over 750 existing trees collected during this study; edit a tree's data; enter data for a newly installed tree, and print a report. The TIMS data was incorporated into nine maps of the Town, generated by Quentin L. Hampton, Inc., and are attached at the end of this document. Each map is a specific position of the Town (e.g., Dog Park, Ponce Preserve) and has numbered points that correspond to a specific tree. Each of the 758 hardwood trees surveyed and entered into the database is on one of these maps and has a number that serves as a lookup in the TIMS database program. As new trees are planted, they should be entered into the database, which will assign the new tree its own unique identifier.

Benefits of a Healthy Urban Forest

Trees play an important role beyond providing people with shade on a hot day or a place for wildlife to thrive. Trees can:

- Reduce energy consumption by providing shade thus saving energy.
- Break the force of rainfall and help to slow runoff. Trees prevent soil erosion and help water to infiltrate into the soil.
- Trees can reduce CO2 and other pollutants through photosynthesis. Half of a trees' dry weight is carbon: so the more trees we plant, the cleaner the air becomes.
- Trees can increase property values. It has been demonstrated that houses near natural features and parks have higher re-sale values, as much as a 10% increase. (ISA)

Urban Forestry Valuation Arguments

The following are some statistics on just how important trees are in a community setting:

"Trees properly placed around buildings can reduce air conditioning needs by 30 percent and can save 20 - 50 percent in energy used for heating."- *USDA Forest Service*

"Trees can be a stimulus to economic development, attracting new business and tourism. Commercial retail areas are more attractive to shoppers, apartments rent more quickly, tenants stay longer, and space in a wooded setting is more valuable to sell or rent." - *The National Arbor Day Foundation*

"Shade from trees could save up to $175 per year (per structure) in air conditioning costs."

- Dr. Lowell Ponte

"Healthy, mature trees add an average of 10 percent to a property's value." - *USDA Forest Service*

The net cooling effect of a young, healthy tree is equivalent to ten room-size air conditioners operating 20 hours a day." - *U.S. Department of Agriculture*

"Landscaping, especially with trees, can increase property values as much as 20 percent."

- Management Information Services-ICMA

"One acre of forest absorbs six tons of carbon dioxide and puts out four tons of oxygen. This is enough to meet the annual needs of 18 people." - *U.S. Department of Agriculture*

"In laboratory research, visual exposure to settings with trees has produced significant recovery from stress within five minutes, as indicated by changes in blood pressure and muscle tension."

- Dr. Roger S. Ulrich Texas A&M University

"Nationally, the 60 million street trees have an average value of $525 per tree."

- Management Information Services-ICMA

UFMP Overall Recommendations

1. Continue to enforce existing Codes of Ordinances to maintain a high standard of tree protection.
2. Continue to provide educational programs on the importance of trees and an urban canopy. The development of a tree protection brochure would further this cause.
3. Monitor the urban canopy at least every five years to track changes in sizes, species and coverage.
4. Use proper pruning techniques and protect trees to the fullest extent during construction.

Red Maples can absorb over 3,000 gallons of storm water annually. -McPherson , E. Gregory. et. al. Piedmont Community Tree Guide: Benefits, Costs, and

INTRODUCTION

Forests and the trees that form them are an integral part of human health and well-being. In an economic and social context, the interrelationship between trees and society is both tangible and intangible. Some of the most treasured places on Earth are places with trees, not for shade alone but the allure of their grand stature and living history that they embody. The Town of Ponce Inlet is a clear example of this. The Town is fortunate to have a clean beach, intact and healthy salt marsh, and old growth trees present within it boundaries. Life in Ponce Inlet is special, by and large due to the actions of its leaders and due to the presence of a healthy environment.

As is evident by the actions of the Town Council and its tree board, the importance of the environment and its link to human health has been acknowledged as immensely important. The Town of Ponce Inlet has taken a monumental step forward, a unique step, in its desire to preserve and properly manage its urban forest. The Town has shown proactive leadership in its desire to put the quality of life at the top of its list of important considerations. The Town of Ponce Inlet already has an excellent and comprehensive tree protection ordinance and has created one of the most desirable places to live in Volusia County and Florida as a whole.

This UFMP was made possible through the efforts of many people. The support and assistance of Margi Richard, Town of Ponce Inlet Associate Planner, was invaluable. In addition, the partnership between Quentin L. Hampton and Native Florida Landscapes proved to be successful. This management plan was made possible through two grants from the Urban Forestry Council.

Biogeography and the Forest Dynamics of Ponce Inlet

The Town of Ponce Inlet is situated on a barrier island, where a unique suite of plants and animals has come to occur. The Town's unique biological diversity has been driven by its proximity to the ocean and nearness to the sub-tropics. Underlying the Town of Ponce Inlet is a geological formation called the Anastasia formation, comprised of sedimentary rock formation. This formation developed 125,000 years ago and occurs along the east coast of Florida, extending from Jacksonville to just north of Miami. The formation also occurs up to 20 miles inland in a few places. This geologic feature is the foundation upon which sand accumulated and formed the current barrier island (Randazzo, 1997).

The development of the forest system and soil structure developed 100,000 years ago, and evolved into our current forest system. The ecosystems in the Town range from a coastal foredune in the east to a salt marsh on the west. In between, the landscape grades from the sandy beach scrub to a dense, floristically rich broad-leaf forest, called a maritime hammock. Hammocks are a unique vegetational community, found from North Carolina, west through the lower Piedmont to eastern Texas; this region includes the entire coastal area of the Carolinas, Florida, and the Gulf Coast. Through this range exists a wide variation in the floral composition. The simplest and most widely accepted community classification for the entire area can be described as a mixed hardwood temperate forest comprised of an association of oak-hickory-pine. In Florida, the forest composition can also include sabal palm, redbay, red cedar and yaupon holly (Spence,1998). The canopy trees in this community type are dominated by evergreens, but do contain deciduous species. Hammocks of central Florida contain both temperate and tropical species.

One very unique feature of hammocks is the presence of shell middens. John Kunkel Small (1929), curator of the New York Botanical Garden who visited the area several times, correlated the presence of tropical species in coastal central Florida to the shell mounds or "kitchen middens." Small described a rich matrix of tropical species found no where else in Florida north of Volusia County. Green Mound along South Peninsula Drive was one of the midden that Small visited while describing the flora of this area.

Maintain Tree City USA Status

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

We congratulate the Town of Ponce Inlet on its status as a Tree City. We encourage the Town to continue to meet Tree City USA requirements. Other recognitions the Town could apply for are the Tree City Growth award and, ultimately, the Sterling Community award through the Arbor Day Foundation.

Tree Inventory Management Software (TIMS)

Overview

Tracking existing trees and capturing information on newly installed trees is very important to the Town's management of its urban forest. For this purpose, Native Florida Landscapes custom designed for the Town of Ponce Inlet the TIMS package, a simple individual tree tracking program. The goal of this software is to provide the Town a simple but useful way to manage and track the trees in their urban forest. Location of all 758 hardwood trees within the Town's boundaries was identified and entered into the database. Note: As stated in the UFMP, as part of the initial study, each hardwood tree within the Town was located, measured and recorded; however, specific pruning direction (for instance, which branch to prune on what tree) was not part of the scope and is not provided. Continued use of this tool will allow the Town to manage a tree inventory list and generate simple outputs as to the health and location of trees with the Town.

Benefit of Tree Management Software

Arboricultural research and technological advances in computer analysis are allowing municipalities to document the benefits of trees beyond aesthetics and real estate values. Many communities around the nation are collecting more and more information on their urban forest through models that track street tree use, hazard tree valuation tools, and even carbon sequestration and energy efficiency values provide by trees.

The U.S. Department of Agriculture has developed several models that generate their data outputs based on the species, location, size, nativity, and condition of trees in a particular community. The most advanced model is UFORE, a model

that allows users to collect data on the entire urban forest and estimate the ecosystem services the resource provides to the community. Additional available outputs include:

- Hourly urban forest volatile organic compound emissions and the relative impact of tree species on net ozone and carbon monoxide formation throughout the year.
- Total carbon stored and net carbon annually sequestered by the urban forest.
- Effects of trees on building energy use and consequent effects on carbon dioxide emissions from power plants.
- Compensatory value of the forest, as well as the value of air pollution removal and carbon storage and sequestration.
- Tree pollen allergenicity index.

Database Structure

TIMS is a basic database program that runs within Microsoft Access and provides:

1. A system that enables users to easily collect, enter, and store data.
2. A tree inventory management system that allows users to track location, species, size and age class distribution, pruning needs, tree health, and identification of hazard trees. Therefore providing a comprehensive management plan that can be prepared for meeting short- and long-term goals.
3. A customizable desktop inventory program to meet the specific needs of Ponce Inlet.
4. A sample data collection form was created for the Town (**Appendix A**)
5. In conjunction with the TIMS program, a generalized maintenance schedule (**Appendix B**) was created to provide a template for the Town to follow. The schedule contains general periods of time when exotic removal and pest management can be optimized, when pruning would be less stressful for a tree and months when updating the TIMS database could be done. The Town should modify the schedule as needed to fit their needs.

Recommendations to the Town of Ponce Inlet Code of Ordinances

Native Florida Landscapes has reviewed the Town's Article VIII, Tree & Native Vegetation Preservation, Buffer & Landscape Requirements and has the following recommendations.

Section B: Caliper - Add to this definition a comment noting this type of measurement is used to measure nursery grown stock.

Section U: Specimen Tree List - Sweetbay, *Magnolia virginiana*, the second portion of the scientific name is misspelled. We have used the correct spelling. In addition, Wild Olive, *Osmanthus americana* is spelled correctly but the "A" in *americana* needs to be lower case.

SectionD1.a - The language reads that a tree should be measured in a caliper form. Trees found in the field should be measured by a DBH.

Section E - There is a reference to Historic Trees. However, Historic Trees are not defined in Section A.

Section G - During the discussions of tree replacement, the Town should refer to Section K where the State of Florida Department of Agriculture's Grades and Standards are discussed.

Section G.1. - The Town refers to Certified Arborists and Landscape Architects - both professional organizations have measurable standards to demonstrate their professional qualifications. In addition, the Town lists "Horticultural Specialists" as a profession capable of making similar decisions as a Certified Arborist and Landscape Architect. There is not a stand-out professional organization recognizing horticultural specialists. The Town should specifically recognize the FNGLA certifications (http://www.fngla.org/certification/certify.asp) or a four-year degree in horticulture from an accredited University.

Goals of Tree Preservation Ordinance

- ❀Reducing tree loss during development
- ❀Reducing damage to standing trees during construction
- ❀Providing for replacement of trees lost during construction
- ❀Planting trees where none occurred previously
- ❀Maintaining preserved trees after construction is completed

In reference to rights-of-way (ROW) plantings, Native Florida Landscapes has several suggestions. At all times before planting specifications are developed, the roadside planting guidelines developed by the Florida Department of Transportation should be consulted for guidance. These issues relate to the type of species allowed in regard to travel lane speeds and lines of sight.

If the ROW planting is to occur where the root mass will be bound on three or more sides by impervious material, we suggest choosing a small understory species such as yaupon holly, Simpson's stopper, cabbage palm, or myrtle oak. At no time should a species be used , such as live oak, red cedar or redbay, that grows to such an extent where the road or sidewalk would come within four feet of the trunk of a tree.

For ROW plantings out side the sidewalk, in unmanaged ROWs any species would be appropriate as long as the base of the tree was at least four feet from the edge of pavement or sidewalk and the tree was not placed under powerlines or over utility lines.

Agreements may be reached with property owners on a road way to allow a planting to occur on their property. This will provide adequate space for the tree as it matures.

In most cases, an Arborist or other qualified professional approves the planting of trees when there is a curbed roadway and a minimum five foot wide planting strip.

Trees must be planted to the following standards:

- 4 feet back from the face of the curb.
- 5 feet from underground utility lines
- 10 feet from power poles (15 feet recommended) - and not beneath the lines
- 6 feet from driveways (10 feet recommended)
- 20 feet from street lights or other existing trees.
- 30 feet from street intersections.

The most important axiom is "The Right Plant for the Right Place"

Sampling Methods

Trees within the Town of Ponce Inlet were surveyed between March and July of 2007 and were geo-located using a sub-meter accuracy GPS Trimble® unit. The data gathered during these sampling events was compiled into the Master Tree List (MTL) and can be found in **Appendix C**.

The surveys conducted concentrated on trees located on Town-owned property, including rights-of-way. The majority of the trees that occurred in the right-of-way were along South Peninsula Avenue and Sailfish Drive. The right-of-way setback varied throughout the Town. For simplicity and a better use of time, trees were included in the survey if they were located within 10 feet of the edge of pavement.

Trees are measured in the field in a standard form called Diameter at Breast Height (DBH), which is measured at 4.5 feet above grade. This measurement is nearly universal in concept. However, often in the study of trees, a tree that forks below 4.5 feet is considered two trees. A tree is counted this way to provide weight to the overall contribution a tree has to an area. However, in this study, all trees were counted as one individual, regardless of branching arrangement.

For the purpose of this inventory, the trees within the Town of Ponce Inlet were separated into two categories: trees within managed public areas (i.e., Lighthouse Point Park, the Old Post Office, the tennis courts, the dog park, and managed rights-of-way); and trees within unmanaged public areas (Ponce Preserve, Timucan Botanical Gardens, and unmanaged rights-of-way). Within managed areas, the geo-location (longitude and latitude) and DBH for all trees were recorded. In unmanaged areas, only trees found to have a DBH of 8 inches or more were counted and tabulated along with their geo-location and DBH.

For a multi-stemmed tree that forked below 4.5 feet, the formula $\sqrt{(S1^2) + (S2^2)}$ = DBH was applied to arrive at the average DBH. The diameter of each stem (S1, S2) is measured at 4.5 feet, squared, then added together. The square root of that sum is the recorded DBH for the multi-stemmed tree. For an example, a tree forking into three branches below 4.5 feet, has the diameters of 12 inches (s1), 14 inches (S2), and 17 inches (S3).

$$\sqrt{\{(12\text{ in})^2 + (14\text{in})^2 + (17\text{ in})^2\}} = 25.08\text{ in}^2$$

NOTE: When measuring for a tree's DBH, avoid swollen areas and knots; take the measurement above or below the flare or knot.

STATE OF THE TREES

Health of the Ponce Inlet's Urban Forest

Overall, the Town's urban forest is in good health and provides a spectacular backdrop to a beautiful community. At the time of this survey, there are only a few trees that are in a state of decline and they occur inside either Ponce Preserve or Timucuan Botanical Garden and pose no threat to the infrastructure of the Town.

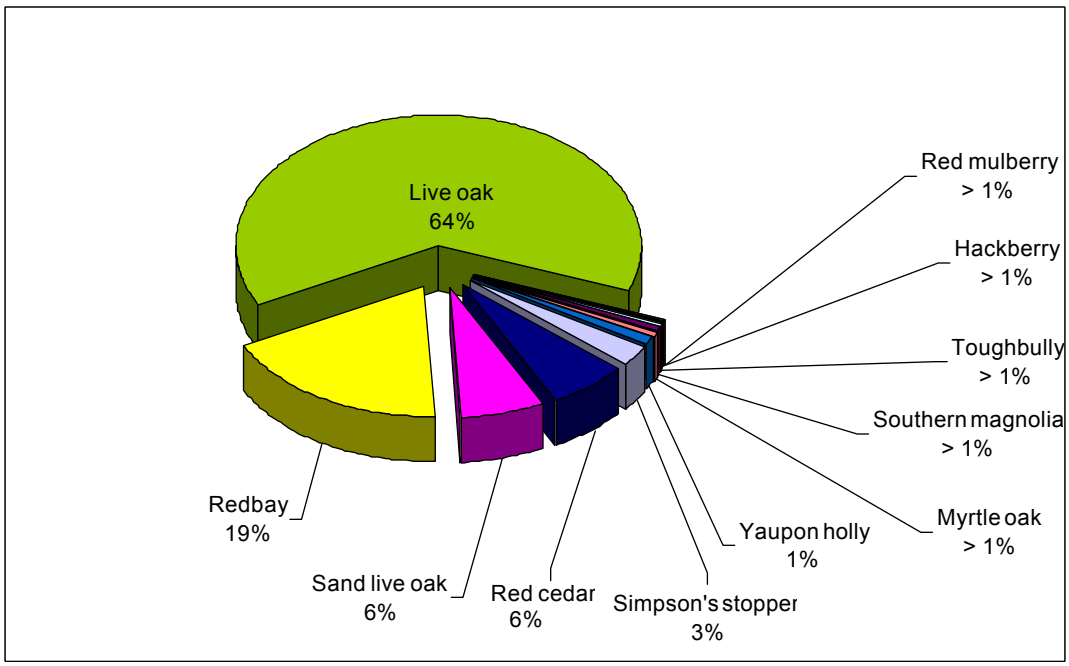
The Town currently has a canopy coverage of approximately 40%. This is the target average that the American Forests (a nonprofit conservation organization) sets as a goal for communities east of the Mississippi River. In addition, the International Council for Local Environmental Initiatives recognizes targets a range between 24 and 35% canopy cover would be adequate to achieve a healthy, biologically diverse forest system

Species Diversity and Composition

Live oak (*Quercus virginiana*) is the dominate species, and the town is lucky to have an abundance of this species. Live oak is a magnificent tree, one that can live for hundreds of years, is tolerant of salt air, regular, strong winds, and has few disease issues. In addition to live oak, the town has a handful of sand live oak (*Quercus geminate*), laurel oak (*Quercus laurifolia*) and myrtle oak (*Quercus myrtlifolia*). Sand live oak is a close relative of live oak. The sand live oaks occur in Lighthouse Point Park and in the rights -of-way of Sailfish Drive and South Peninsula Drive. The laurel oaks present in the Town are found only in Ponce Preserve and, though they are middle aged trees, they should remain healthy for a decade or more. **Appendix D** contains five graphs that show the breakdown of tree species in each of the other public areas, excluding Dog Park and Boat Ramp since each of those areas have 100% live oak.

Figure 1 shows the species composition of Ponce Inlet. As illustrated, the distribution of trees species is not evenly balanced. Live oak is by far the most dominant tree in the town. A community forest with this unbalanced distribution of species would normally be a concern; however, due the environmental dynamics of a near-ocean forest, this is not uncommon. It is common for a coastal community to have lower species diversity due to the low number of species that can tolerate the salt spray and regular occurrence of tropical storms. That being said, to have live oak as the most dominant species is a benefit; live oak is a resilient, tough, and long-lived tree.

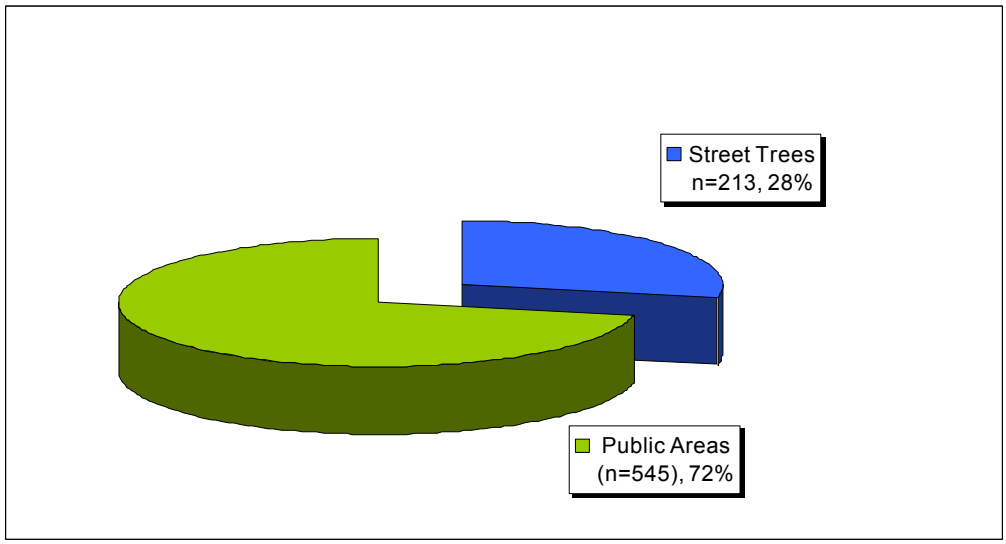
Figure 1. Tree Species Composition



The International Society of Arboriculture has adopted a diversification formula: no community of forest should contain more than 10 percent of one family or 5 percent of one species. A such, for every 100 trees planted, care should be taken that no more than 10 trees are planted of any one family such as oaks, and no more than five trees of any one species. These guidelines are valid; however, in a seaside community such as the Town of Ponce Inlet, the impact salt spray has on many species limits the number of plants that can survive in this area. The Town's replacement or planting target should be to plant three different species for each live oak planted.

The trees in the Town of Ponce Inlet are primarily located in the parks, with only 28% being street trees found in the rights-of-way (**Figure 2**). Of these trees, some are appropriate for restricted rooting areas and other are not. Trees such as Simpson's stopper, yaupon holly, and myrtle oak tend not to damage roads and sidewalks, as opposed to live oak, redbay and red cedar. These trees can, and in some cases already have, damage sidewalks through root lifting and cracking of the cement. As damaging as trees can be to sidewalks, the presence of an arching oak, bay, cedar, and magnolia canopy can be a spectacular site to see. New sidewalk technologies are emerging that allow the sidewalk to flex and not crack when used around trees. This would generally eliminate any discussion of the need to cut trees down to build sidewalks.

Figure 2. Park Trees vs. Street Trees



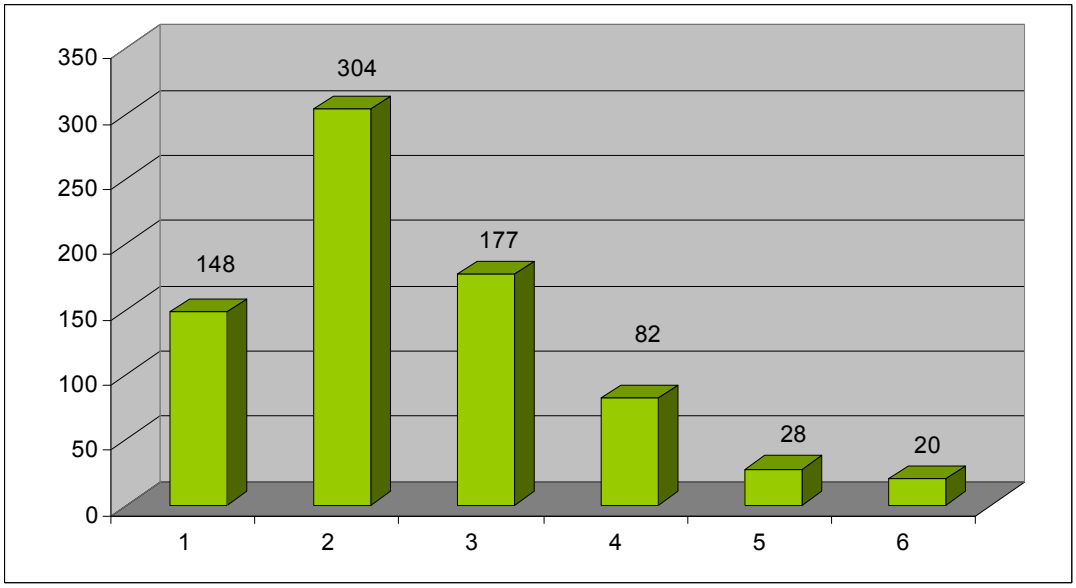
To save time and money, trees were surveyed based on their size and location. (This survey contains 758 hardwood trees; if all trees were surveyed, the cost to collect the data would likely have quadrupled, resulting in thousands of trees in the database.) To better manage the data, only trees eight inches and above were surveyed in the two forest preserves and along the rights-of-way. In all other locations, all trees were surveyed. It is our recommendation that all trees planted in the town be recorded in the Tree Inventory Management Software (TIMS) database, regardless of size and location.

Size Class Distribution

One of the greatest concerns for managers of an urban forest is the age of the forest. Forest age can be generally correlated to tree size; older trees will generally have a larger DBH (diameter at breast height) measurement. Though this isn't a perfect fit, it is a useful measure when comparing intra-specific groups.

The size distribution for the town's trees can be seen in **Figure 3** (The size class ranges are listed below the figure). As can be gathered from the graph, most of the trees are between 8 and 12 inches in diameter, measured 4.5 feet above grade.

Figure 3. Tree Size Classes



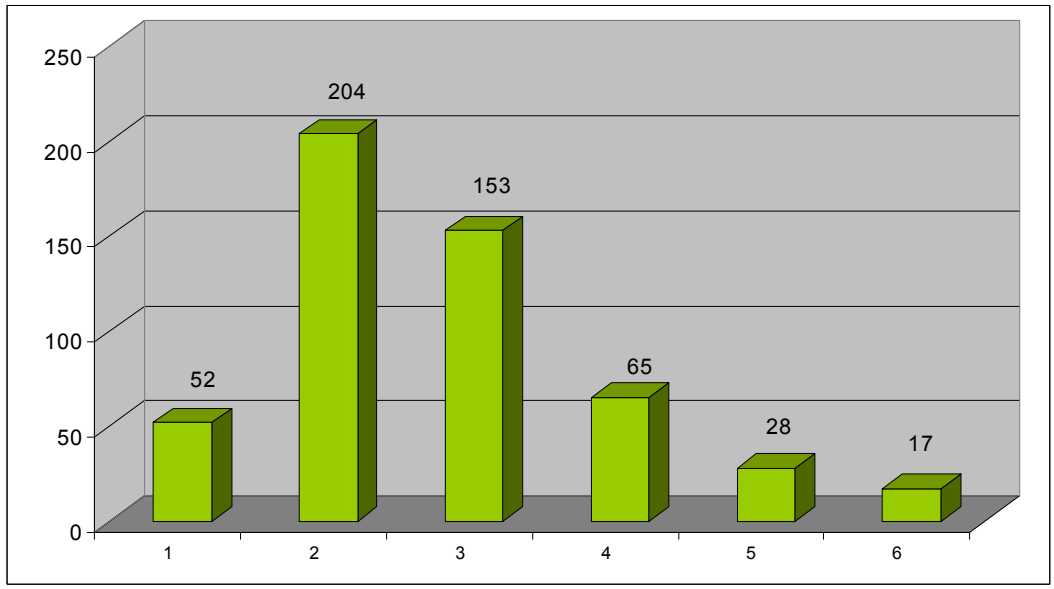
Class size levels

Class size 1	7 inches or less	**Class size 4**	17.1—22 inches
Class size 2	7.1—12 inches	**Class size 5**	22.1—27 inches
Class size 3	12.1—17 inches	**Class size 6**	27.1 inches or more

Linking the size class distribution to age gives us an age class distribution of the trees. This provides another indication that the forest is healthy: there are 308 (41%) of the trees in their early or midlife stages and only 7% of the trees are in an advanced state of age (most of these live oak and red cedar). The only trees found that were of any notable size that occur east of South Peninsula Drive are in Lighthouse Point Park and Ponce Preserve. This is a natural and expected distribution of trees and should be used as a guide when planning future tree plantings.

While we feel the Town's forests have a healthy distribution, the Town should continue to plant small trees. The number of class size 1 trees (small trees less than seven inches in diameter) was less than half of the number of class size 2. Size class 1 trees were trees occurring as street trees and trees occurring in the managed parks. Ideally, size classes 1, 2, and 3 should have about the same number of trees. If this trend continues, the Town will not have the next generation of young trees to fill in for the next several decades. Note: **Figure 4** shows the size class distribution among the Town's live oaks. This is an ideal spread for a healthy forest.

Figure 4. Live Oak Size Class Distribution



Significant Specimens

Ponce Inlet's urban forest has some ancient residents; there is a group of live oaks in the Town that likely exceed 100 years old, and a few that may be several centuries old. Fourteen trees are 30 inches in DBH: 3 specimens at the Old Post Office on Beach Street, 4 specimens in Ponce Preserve (2 of which are in excess of 40 inches), 4 specimens in Timucuan Botanical Garden, one specimen at Dog Park , one specimen in the Sailfish Drive right-of-way, and one in Lighthouse Point Park. We have named the two large trees in Ponce Preserve "Athena" and "Atlas", the largest tree in the Timucuan Botanical Garden "Zeus", and the largest tree in the Dog Park "Pan." **Appendix E** contains photos of these significant specimen trees.

Location	**DBH and Tree #**
Post Office	36" (#381), 33" (#380), 32" (#379)
Ponce Preserve	45" (#661) "*Athena*", 40" (#710), 36" (#654) "*Atlas*", 30" (#665)
Timucuan Botanical Garden	34" (#66) "*Zeus*", 32" (#83) 31" (#749), 30" (#33)
Dog Park	42" (#183) "*Pan*"
Sailfish Drive right-of-way	31: (#20)
Lighthouse Point Park	30" (#481)

URBAN FOREST MANAGEMENT PLAN

An Urban Forest Management Plan (UFMP) provides many benefits to a municipality. Primarily, having a UFMP for proactive management, as opposed to reactive "management by crisis" is invaluable; tree hazards are identified and eliminated through proper, preventive maintenance, and damage is controlled - before accidents occur, or in the aftermath of severe weather.

When used diligently, the Plan is an invaluable resource for the Town. There are cost savings from fewer needs for emergency crews after severe weather when contractors are difficult to find and charge a premium price. The Plan allows the City Manager to maximize personnel time and efficiency through use of a maintenance timeline for identifying hazard trees, completing pruning, and replanting. Since the potential hazards that trees can pose to residents and structures is a significant concern of everyone within the Town, having a simple yet thorough education message is instrumental to both forest and people management.

Routine Pruning

Sometimes the obvious can be the most frequently overlooked of considerations. So we will stress what is common sense: prevention is the preferred method to manage any potential problem. A regular pruning cycle is a critical component of an effective UFMP and benefits the Town through an efficient use of personnel and resources.

A five year cycle is the optimum time frame for planning tree maintenance, where 20% of the total number trees are pruned or evaluated each year. These are the trees that have targets, or potential impact to people or structures, associated with them. Note: This survey located and provided general health assessments of each hardwood tree and indicated defects in the tree inventory database. And while hazard trees should be pruned or removed immediately, directions on which branch needs pruning and other specifics was not within the scope of this project.

The types of pruning in order of the highest priority to lowest are:

1. Removal of hazardous trees or limbs
2. Crown cleaning
3. Structural pruning
4. Crown thinning
5. Palm pruning

Basic maintenance for elevating, crown cleaning, and structural pruning is a cost-effective approach and provides the most benefits. The additional method of crown thinning can be added if funds are available. After prioritizing and removing hazard trees, the UFMP becomes a proactive tool, focusing on preventing tree failure and long-term maintenance by reducing the amount of time spent on hazardous tree removal.

Appendix F contains a comprehensive discussion on canopy lifting and cleaning, structural pruning, hazardous trees, tree/sidewalk conflicts mulching and fertilizing.

TREES AND CONSTRUCTION

Soil Compaction

The biggest challenge of having trees co-exist in a built environment is the importance of providing enough non-compacted soil to accommodate large root systems. Trees take up a lot of space above and below the ground. Their root systems are aerobic, meaning they require oxygen in the form of air, which is available to them in the pore space of non-compacted soils. Typically, 25-50 per cent of the volume of native soil is air, or pore space. This is the exact opposite of the density of soil that is required to support buildings and pavement. Construction soils are typically compacted to 90-98 per cent of its capacity in order to support structures. Trees planted near these soils may fail to survive, or grow at a slower rate and are shorter lived than trees in natural environments. Compaction damage can also be a result of activities that occur after a tree is planted, such vehicles parking off of pavements on the root zone of trees.

The symptoms of soil compaction start as reduced new growth. In time this leads to tip dieback, then entire limbs die, then death of the entire tree.

Avoiding compaction starts with the landscape design. Trees ideally should be given the entire area under the drip line in order to flourish. Large trees planted in small parking islands or in small tree pits in sidewalks may seem like a good idea but is rarely

successful in the long term. If the tree was to flourish in this situation, it will often cause damage to the pavements. A good design alternative is to have fewer but larger green spaces than the typical parking lot islands in commercial and urban designs.

There is some remediation for soils that have been compacted. These methods include: vertical mulching, soil excavation, or radial trenching.

Each compacted situation should be inspected by a Certified Arborist to determine which method is appropriate.

Appendix F contains an illustration on how to protect trees and general guidelines that, if followed, will help ensure trees survive nearby construction.

Tree Diseases and Pests

The tree species present in the Town of Ponce Inlet can be susceptible to several known disorders. Although some are currently just a threat, others are actively affecting the health of the urban forest. Below are the pests and pathogens most likely to occur in the tree species of Ponce Inlet, followed by those least likely to occur, and then a general discussion of additional commonly encountered pests (FDACS, 2007).

Oakleaf Caterpillar

The Oakleaf caterpillar (*Lochmaeus manteo*) is a common native pest that weaves tent-like webs in tree canopies. This tent caterpillar is generally seasonal and will not be the sole cause of the tree to die, though the tree could loose much of its canopy. The caterpillars tend to arrive in late summer and may persist into to the fall. The often present salt spray of the area will likely keep this insect from ever becoming a serious problem. Treatments range from horticultural oils, insecticides, streams of water, to doing nothing at all.

Galls

Round or oval, woody structures on a tree's leaves or stems are usually a type of insect gall. Galls can occur in many shapes and colors and often look like berries. The biology behind insect galls reveals an interesting relationship between the plant and the insect. The insect has tricked the plant in to creating the gall in which the insect will lay its eggs. These are rarely harmful, and often remain behind for a season or two due to their woody structure. The best

treatment is not to worry about it since the application of pesticides only adds to pollution and will not deal with the ecology of the event.

Mistletoe

Mistletoe (*Phoradendron leucarpum*) is a flowering plant with white berries and it is a parasite to trees. Mistletoe occurs more often in the shorter-lived species of oaks, such as laurel oak (Quercus laurifolia) and water oak (Quercus nigra), but can occur on a wide variety of species, not just oak. The mistletoe injects specialized root-like appendages into the tree's tissues and robs it of nutrients. The mistletoe is easily spread by birds and should be removed whenever possible. Over time, mistletoe will hasten the decline of a tree.

Redbay Ambrosia Beetle

The redbay ambrosia beetle (*Xyleborus glabratus*) introduces a vascular fungus (*Raffaelea laurelensis*) into its host, namely redbay, sassafras and avocado, causing infected tree to wilt and die within a few weeks or months (Fraedrich 2005).

In Florida, the infestation was first noticed at Kingsley Plantation on the north end of Fort George Island in 2005, and has since spread to neighboring islands. Almost 40% of the red bays on northern Fort George Island are now dead. At the site of the initial *X. glabratus* detection in Florida, redbay mortality has increased from 10% to nearly 60% in a period of only nine months (A. Mayfield and J. Eickwort, FDACS, unpublished). As of December 2007, the ambrosia beetle has been found in northwestern Volusia County.

Redbays has enormous value to wildlife, as its fruit, seed and foliage are eaten by several species of songbirds, wild turkeys, quail, deer, and black bear (Brendemuehl 1990), and the larvae of the Palamedes swallowtail (*Papilio palamedes*) feed primarily on species of Persea. Although not yet confirmed as hosts, Florida's other native *Persea* species, including the commercially valuable avocado (*Persea americana*), may also be at risk.

The Town of Ponce Inlet should be prepared for redbay mortality to occur. There are currently experiments taking place to inoculate redbay with an insecticide in an attempt to protect this species.

Sudden Oak Death

Sudden Oak Death is a recently recognized disease that is killing oaks and other plant species in the western U.S. First noticed in 1995, the disease has been confirmed in the coastal areas north and south of San Francisco, and in a relatively remote location in southwestern Oregon. The pathogen responsible for the disease, a fungus-like organism called *Phytophthora ramorum*, is also found in Germany and Denmark, where it is causing a recently identified disease on Rhododendron and Viburnum.

Although in the U.S. the disease has been found only in California and Oregon, it is of great concern to land managers in the Eastern U.S. as well. Forestland managers nationwide should be aware of the symptoms of sudden oak death, and should contact a pest management specialist if they suspect that the disease is present in a new location. However, as of 2007 sudden oak death has not been found in Florida or anywhere else on the Eastern seaboard.

CRITERIA OF HAZARD TREES

- A defective tree, or tree part, that poses a high risk of failure or fracture
- Presence of a target that could be struck by the tree (e.g., people or property)
- Environmental hazards may increase the likelihood of tree failure (e.g., severe storms, strong winds, shallow or wet soils, or growing spaces that restrict root or crown development)

CHARACTERISTICS OF INFERIOR TREES

- Fast growing and weak-wooded species subject to breakage in high winds
- Messy trees with heavy fruit production and high amounts of small deadwood
- Poor compartmentalizers subject to rapidly developing decay and hollow
- Prone to fungal and insect infestations

Queen Palm Diseases

Queen palm (*Syagrus romanzoffiana*) is a common ornamental palm with prone to several known disorders. Queen palms are not-well adapted to coastal conditions in Florida. They are native to southern Brazil and Argentina and are more often that not in a state of stress due to its inability to acquire nutrients from the soil. There are several diseases that have been problems for queen palms, most notable is the butt rot, a shelf fungi that attacks the base of the tree. There is no treatment, only prevention. New infections occur when moisture and

temperature conditions are suitable. Infections are aided by mechanical damage to palm bases and/or roots. Butt rot affects a wide variety of palms in Florida, including the *Sabal palmetto*.

A new lethal disease affecting only queen palms has emerged in Florida. There are more questions than answers about this problem. Foliage declines and eventual death of the palm follows shortly. No insects are associated with the problem, nor are nutritional deficiencies implicated. The yellowing leaf symptoms alone are not indicative of the disease, as these symptoms would be similar for natural senescence, especially when potassium deficiency is present. What makes the disease different from natural senescence is that usually within two months of the initial symptoms, the entire canopy has turned brown, as if freeze-dried in place.

Fungus

A variety of pathogenic fungi can infect roots of pines, palms, and oaks. The occurrence and impacts of these pathogens and their associated diseases vary with host species, soil types, tree ages, and forest and shade tree management practices. In Florida, *Inonotus circinatus*, a cause of "red root and butt rot" of various conifers, is a predominant pathogen in diseased roots of sand pine (*Pinus clausa*) and a common colonizer of slash pine (*Pinus elliottii*) roots. *Ganoderma spp*. and *Hispidium spp*. are known to attack hardwoods and palms.

Africanized Honey Bees

The threat of Africanized honey bees is of concern in Florida. This African bee is slightly smaller than our domestic bee, but it takes a laboratory test to measure the difference. A single African bee sting is no more venomous than a single European bee sting. The most important difference is in their behavior: African honey bees produce more offspring, defend their nests much more fiercely and in greater numbers, and are more likely to abandon the nest when threatened by predators or adverse environmental conditions.

The population of Africanized honey bees has grown and will continue to grow in Florida due to its numerous pathways into the state and the lack of effective eradication products or techniques. The Florida Department of Agriculture & Consumer Services is developing the tools to protect the beekeeping industry and educate the public on how to learn to live with this potentially dangerous insect. At some point, the defensive behavior of these bees will become more common.

Pink Hibiscus Mealybug

The pink hibiscus mealybug (*Maconellicoccus hirsutus*),a serious pest of many plants in tropical and subtropical regions, including Africa, Southeast Asia, and northern Australia. This pest has been found recently in the Town of Ponce Inlet by the Florida Department of Agriculture.

Pink hibiscus mealybug was found in the Caribbean in 1994 for the first time. It was discovered in Broward County, Florida on 13 June, 2002, then in Dade County, and has continued to spread. Along with many of Florida fruit and vegetable crops, the pink hibiscus mealybug attacks forest trees and many species of ornamental plants including Allamanda, Angelica, Anthurium, Bougainvillea, Croton, ginger lily, Heliconia, Ixora, hibiscus, palm, and oleander. As the pink hibiscus mealybug spreads across Florida we will have to learn to live with this pest. Native natural enemies are expected to provide some control. We also believe this pest can be suppressed by classical biological control (i.e., importation, rearing, release and establishment of host-specific natural enemies).

Additional Tree Disorders

- Maple (*Acer sp.)* - Basal Canker *(Phytophthora palmivora)*
- Oak (*Quercus sp.)* - Oak Blister *(Taphrina caerulescens)*
- Oak (*Quercus sp.)* - Mushroom Root Rot *(Armillaria tabescens)*
- Holly *(Ilex sp.)* - Witch's Broom *(Sphaeropsis tumefaciens)*
- Wax Myrtle *(Myrica cerifera)* - Heartrot *(Fusarium sp.)*
- Red Cedar *(Juniperus virginiana)* - Cercosporidium Blight *(Cercosporidium sequoia)*
- Chestnut *(Castanea spp.)* - Tubakia Leaf Spot *(Tubakia dryina)*
- Chinkapin *(Castanea sp.)* - Chestnut Blight *(Cyphonectria parasitica)*
- Pine *(Pinus spp.)* - Root Rot *(Phytophthora cinnamomi)*
- Sand Pine *(Pinus calusa)* - Root Rot *(Leptographium procerum*

INVASIVE PLANTS

Share characteristics among invasive plants allow them to grow out of control, such as they aggressively spread by runners or rhizomes; they produce large numbers of seeds that survive to germinate; they disperse seeds away from the parent plant through various means such as wind, water, wildlife and people; and they have few, if any, natural controls, such as herbivores and diseases, to keep them in check.

Invasive plants will take over and degrade natural ecosystems since they disrupt the intricate web of life for plants, animals, and microorganisms and compete for limited natural resources. Invasive plants displace native plants, including some rare species, thus reducing food and shelter for native wildlife, eliminating host plants of native insects and competing for native plant pollinators. Some invasive plants spread so rapidly that they muscle out most other plants, changing a forest, meadow or wetland into a landscape dominated by one species. Such monocultures have little ecological value and greatly reduce the natural biological diversity of an area.

Invasive plants also affect the type of recreational activities that we can enjoy in natural areas such as boating, bird watching, fishing and exploring. Some invasive plants become so thick that it is impossible to access waterways, forests and other areas.

Once established, invasive plants require enormous amounts of time, labor and money to control or eliminate. Invasive species cost the United States an estimated $34.7 billion each year in control efforts and agricultural losses. (Florida Division of Plant Industry) The Florida Exotic Pest Plant Council (FLEPPC) maintains a list of plants to avoid, and the Florida Department of Agriculture and Consumer Services has a similar list, the *Florida Noxious Weed List* (5b-57.007 FAC). Plants on the Florida Noxious Weed List may not be introduced, possessed, moved, or released without a permit. Several of the species on these lists exist in the Town of Ponce Inlet public areas, and are discussed next.

Air Potato

Air potato (*Discorea bulbifera*) has been listed since 1993 by the EPPC as one of Florida's most invasive plant species and in 1999 was added to the Florida Noxious Weed List. Air potato can quickly engulf native vegetation in natural areas, climbing high into mature tree canopies. It produces large numbers of bulbils, which facilitate its spread and make it extremely difficult to eliminate because new plants sprout from even very small bulbils. It invades a variety of habitats including pinelands and hammocks of natural areas.

Brazilian Pepper

Brazilian pepper (*Schinus terebinthifolius*) is a shrub-like tree related to poisonwood, poison oak and poison ivy. Possession of Brazilian pepper with the intent to sell or plant is illegal in Florida. Brazilian pepper invasions represent a significant threat to Florida's native plant and wildlife populations since they typically form dense forests that exclude all other plant life by producing a dense closed canopy, thus making them a poor habitat for native wildlife species. The dense clusters of small berries produced change from green to bright red and are locally dispersed primarily by raccoons and oppossums. Fruit-eating birds, including migratory American robins, assist long-distance spread. Treatment must be applied to the seeds to ensure they are sterile and will not germinate.

Australian Pine

Australian pine (*Casuarina equisetifolia, C. glauca, C. cunninghamiana)* is a weedy exotic member of the beefwood family. Although called a pine, these species are not conifers but true flowering species. This tree can reach heights of over 100 feet and was once widely planted in Florida to form windbreaks around canals, agricultural fields, roads, and houses. However, because it is resistant to salt spray, and can grow close to seawater, it has invaded thousands of acres of coastal Florida.

The lack of inhibiting factors in Florida allow the Australian pine to multiply in numbers at such a fast rate that they become unmanageable. Diverse native shore species found along beaches dramatically decrease, are less rich in types of species, are less complex in food web structure and have less potential to adapt to changing conditions. It is illegal to possess, distribute or plant in Florida.

Other Invasive Species

- Oyster plant *(Rhoeo spathacea)*
- Asparagus fern *(Asparagus aethiopicus)*
- Boston fern (Nephrolepis cordifolia)
- Golden poths *(Syngonium podophyllum)*
- Snake plant *(Sansevieria hyacinthoides)*
- Periwinkle *(Vinca minor*)
- Wedelia *(Sphagneticola trilobata)*

To maintain the Town's biodiversity, all invasive species should be eradicated.

PUBLIC EDUCATION

Trees are important to a community in many ways, but the perception of that value could use some fostering among the community. We are all connected to the environmental well-being of Florida's livelihood; through the air we breathe, the water we drink, and the environment we live and play in. Our quality of life depends upon our active participation in the management of Florida's natural resources.

The creation of a tree protection brochure would greatly advance the public's knowledge. The brochure could outline the dynamics of the Town's maritime hammock, list the most common tree species in town, and illustrate how to properly plant and prune a tree. **Appendix G** has a recommended list of street trees and proper installation guidelines.

KEY BENEFITS TO HAVING A PUBLIC TREE ORDINANCE

- Provides permanent procedures and legal authority
- Establishes an official policy for the Town Identifies standards and regulations for arboricultural practices, such as planting, removal, maintenance, and selection of appropriate tree species for the Town's trees.
- Makes the Town's tree management program more visible
- Establishes a program independent of changing public opinion and finances Provides a channel through which governmental departments may interact
- Establishes the nature and degree of public responsibilities to the Town's trees according to specific standards
- Provides the means to educate the public about the benefits of the urban forest (Ricard, 2002)

Arbor Day is a special day dedicated to tree planting and increasing awareness of the importance of trees. For the homeowner, Arbor Day is an excellent opportunity to take stock of the trees on their property and plan for the future. Homeowner should inspect their trees, note any broken branches or evidence of disease or insect infestation; they could consider how planting new trees might improve the look of their property and provide wind or heat protection. Community events could be tours and hikes through parks, a native nursery "open house" to see what's available and to get new ideas. Planting native trees is a great way to celebrate Florida's Arbor Day, which falls on the third Friday in January.

Birding is the number one sport in America, according to US Fish and Wildlife Services, with 51.3 million birders in the United States alone. In order to encourage wildlife to an area, the National Wildlife Federation touts its Backyard Wildlife Habitat program, where residents can achieve certification for their yard or garden space by providing five requirements: Food, Water, Cover, Places to Raise Young, and Sustainable Gardening Practices.

There are state organizations that reward communities for taking action to educate their residents on the plight of natural areas and foster participation. Florida Yards & Neighbors is a statewide program sponsored by the University of Florida IFAS Extension. Encourages homeowners to water efficiently, mulch, recycle, select the least toxic pest control measures, put the right plant in the right spot, fertilize only when necessary, provide food, water and shelter for wildlife, protect surface water bodies (i.e., bays, rivers, streams, ponds, etc.) and minimize stormwater runoff. For program details visit http://hort.ufl.edu/fyn. Additionally, every year for nearly two decades, the Florida Native Plant Society has awarded high quality home or business sites landscaped primarily with Florida native plant species (minimum 75%) and free of FLEPPC Category I and II exotic pest plants. Visit www.fnps.org.

Recommended Native Florida Trees and Their Salt Tolerance

Hackberry	*Medium*	*American Elm*	*Low*
Red Maple	*Low*	*Black Cherry*	*Medium*
Live Oak	*High*	*Sand Live Oak*	*High*
Red Bay	*High*	*Red Cedar*	*High*
Magnolia	*Medium*	*Hercules Club*	*Medium*
Sabal palm	*High*	*Tough bully*	*High*

CONCLUSIONS

Overall, the urban forest in the Town of Ponce Inlet is healthy and relatively diverse, for a coastal community. The distribution of class sizes fits a distribution curve of a sustainable, mature forest system: not to many old or to many young trees – with the majority of the trees occurring the mid-age range. The Town's forest cover is excellent in some areas and not so good in others. We encourage the town to continue to plant trees, especially cedars, stoppers, hollies, hickories and oaks, to a lesser degree, to maintain a diverse age distribution of the forest.

We did not list redbay due to the impending arrival of redbay mortality. The Town's tree board should be prepared for the onslaught of questions regarding the disease, its spread and tree replacement options since 19% of the Town's urban forest is made up of this species. In addition, the Town may want to consider some type of cost sharing plan or permit fee waiver to offset the immense financial burden that a massive die off will cause.

The main cause of tree mortality is a direct result of construction damage. The Town does have a solid tree preservation ordinance and we urge the town to keep it updated and protect trees to their fullest ability.

Finally, we encourage the town to maintain the tree inventory. The ability to track tree health, pruning schedules, and tree locations in relation to changing forest dynamics will aid the Town as it continues to proactively manage its urban forest today and into the future. The Town has the unique ability, due to its small size, to manage all of its trees in the public areas with a high degree of attention/detail.

Through this Urban Forest Management Plan we have emphasized the importance of tree protection, tree maintenance, biological diversity, public education and outreach events. We hope the end user will find the information in this document informative and practical.

The urban forest is a community asset and one that enhances the quality of life.

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GLOSSARY

Arborist—an individual certified as an arborist by the International Society of Arboriculture (ISA), the California Arborist Association (CAA), or other nationally recognized tree research, care and preservation organization approved by the Director.

City Manager— the Director of the Parks and Community Services Department or his or her designee.

Crown cleaning – the act of removing dead branches or eliminating one or more competing branches in a canopy.

Crown thinning – the act of removing branches to increase light penetration, wind drag, or lightening the load on the end of limb.

Diameter at breast height (DBH) - the diameter of a tree measured at four feet six inches above ground level. The diameter may be calculated by use of the following formula: DBH = circumference at breast height ÷ 3.14. DBH is one factor used for many forms of tree evaluation, such as determining Trees of Significance, and is a factor in establishing replacement fees, penalties for violations, etc.

Encroachment - any activity conducted within the Tree Protection Zone or drip line of a protected tree.

Grading - the removal, movement or addition of soil or earth material.

Irrigation– water distributed by artificial. Optimum soil moisture condition can help compensate for compaction damage as nutrients are absorbed by roots in the water that is taken up the tree.

Urban Forest - all publicly and privately owned trees within the municipality, its open space areas and surrounding planning area(s).

Urban Forest Management Plan (UFMP) - is this document, the Town's long-term plan for comprehensive management of the Urban Forest. The UFMP is available by request from the Planning and Building Department and/or the Parks and Community Services Department.

Hazard tree - any action undertaken which causes injury, death or disfigurement of a tree. This includes, but is not limited to, cutting, poisoning, overwatering, relocating or transplanting a tree, or trenching, excavating or paving within the Tree Protection Zone of a tree.

Hurricane pruning – a term used to excessively trim palm trees. This excessive removal of palms is common place when transporting palm trees but is recognized to provide no added advantage on a mature tree, whether a storm is approaching or not.

Landmark Tree - a tree that has been determined by resolution of the City Council to be of high value because of its species, size, age, form, historical significance, or some other professional criterion. The Landmark Tree List, available by request from the Parks and Community Services Department, designates these identified trees.

Lion's tailing – the act of the removing to many limbs or branches that occur inside of a canopy. The result is at tree with all or most of a tree's out towards the tips of branches, weighing them down to the point where their weight may cause branch attachment failure.

Master Tree List - the city-adopted tree list for street trees and parking lot trees. It is available by request from the Planning and Building Department and/or the Parks and Community Services Department.

Mulching– the application of chipped or shredded wood, straw, or bark to a landscaped bed. Mulching will reduce compaction over a period of time. It will also help prevent compaction by absorbing the weight of the traffic itself.

Private tree - any tree privately owned and growing on private property, which may include Landmark Trees and/or Trees of Significance, and may be located within the City landscape easement.

Prune - above surface or underground cutting of woody material; to cut off or cut back parts to enhance health and structure.

Radial trenching– removing soil in radially oriented trenches within the root zone with a pneumatic excavator (hydro excavation) to avoid injury to roots. The trenches are backfilled with an improved soil to provide a favorable soil for root growth. This method is generally preferred over vertical mulching.

Right-of-way tree – a tree that occurs in the Town that is located with in ten feet of the edge of pavement.

Street tree—any tree planted and/or maintained by the Town, or recorded as a street tree, adjacent to a street or within a city easement or right-of-way on private property, within the street tree easement.

Target – a structure, economically important object or person, that can be harmed by a falling limb or tree.

Tree - any woody perennial plant having one or several main stems commonly achieving ten or more feet in height and capable of being pruned and shaped to develop a branch-free trunk at least nine feet in height. Reference to any tree indicates the entire plant, including both visible (canopy, trunk) and below grade (roots).

Tree Protection Zone (TPZ) - the outermost edge of a tree's canopy (or drip line). In certain instances, the TPZ may extend beyond the drip line, as determined by the Director.

Vertical Mulching- physically auguring openings in the soil and filling it with a porous material.

APPENDIX A

DATABASE GUIDELINES

TIMS Program Use

Tree data should be collected with a GPS unit or recorded via paper and surveyed using traditional survey techniques. Any tree then entered into the TIMS program is automatically given a unique identification number and becomes part of the Master Tree List (MTL). The user adds enters the data (e.g., tree DBH, species, geo-location, health evaluation, and any additional comments). An entry should be created for each new tree when placed into the public lands; a tree's record should be updated with each instance of scheduled pruning or when a health survey was conducted, and when necessary, a tree is removed. Data can then be exported into a spreadsheet to be sorted as necessary.

TIMS Program User Instructions

NOTE: The TIMS program requires Microsoft Access version 2003 or later. The TIMS program is currently not network-compatible.

<u>To start the TIMS program:</u>

1. Click the icon
2. Click OK to accept the security settings.
3. Click Enter to begin entering, tracking, or modifying records in the TIMS database.

To Add a Tree into TIMS:

1. To add a new tree, click **Save and Add**. The program will automatically generate an identification number in the **ID** field.

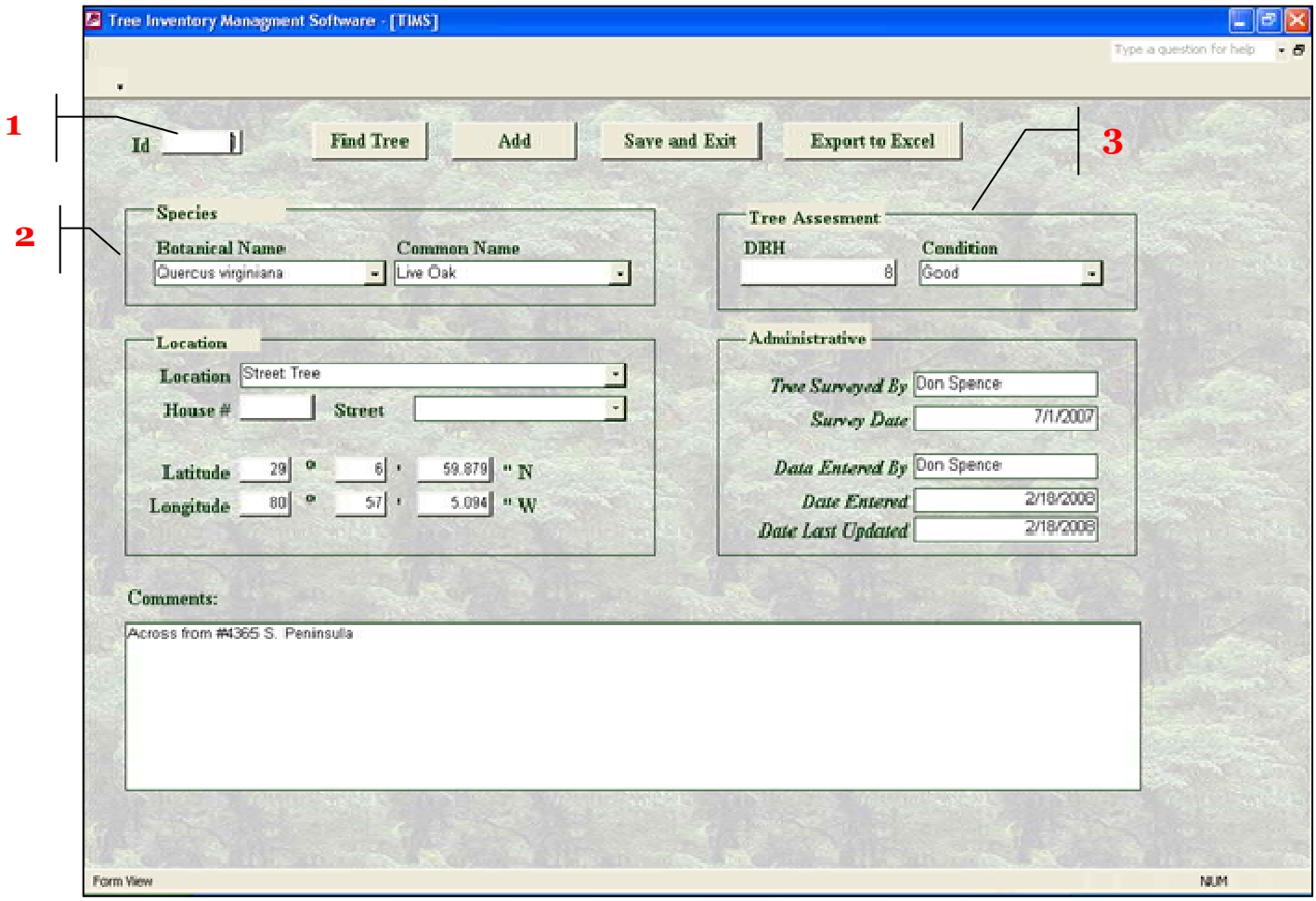
NOTE: Every tree has a unique Tree ID Number that cannot be duplicated.

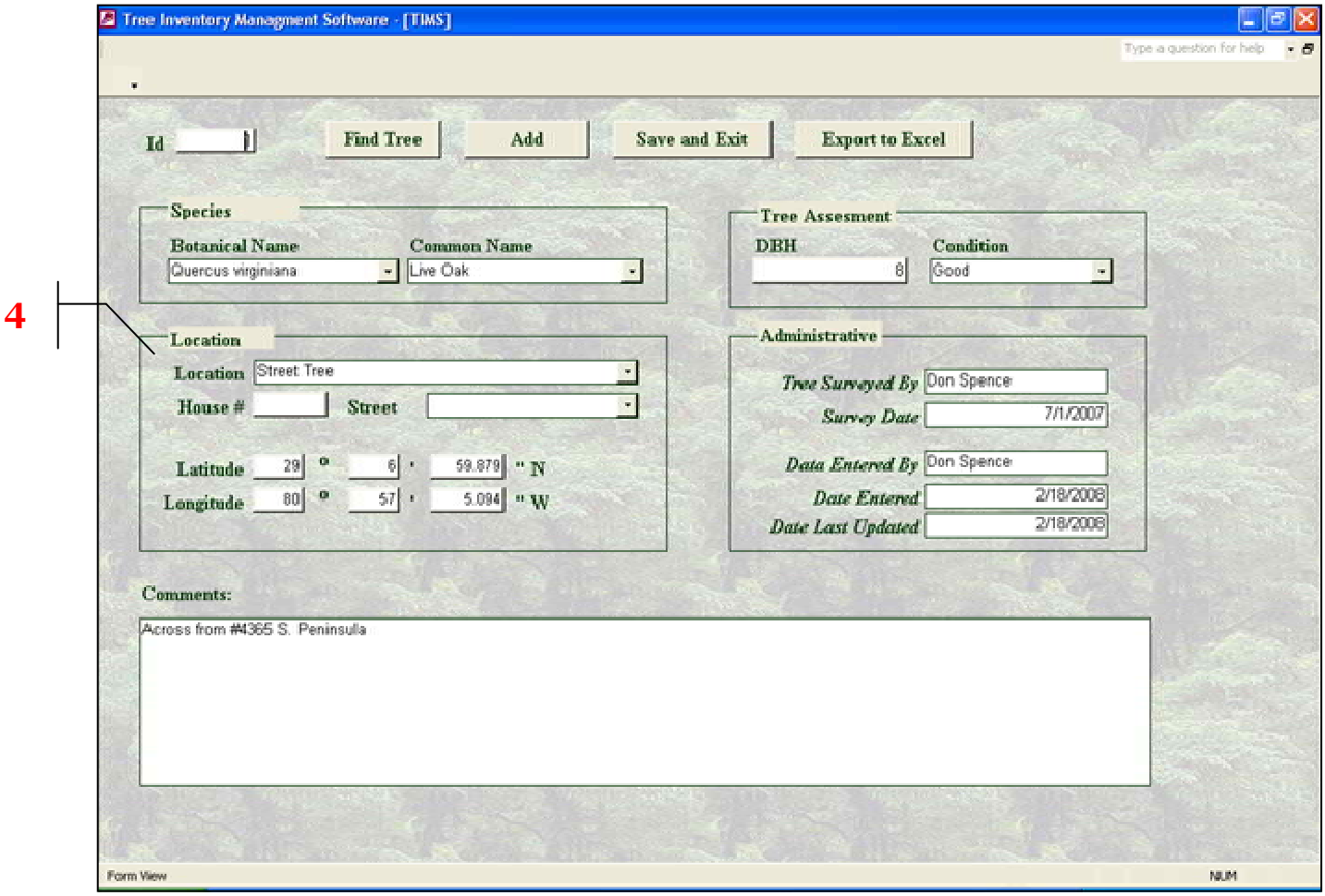
2. In the **Species** group box, choose the tree species from either the **Botanical Name** or the **Common Name** drop-down lists. A choice in either list will automatically populate the other field.

3. In the **Tree Assessment** group box,

   A. Type the tree's size measurement in the **DBH** field.

   B. Choose the condition (good, bad, poor, or dead) that best represents the health of the tree from the **Condition** drop-down list.





4. In the **Location** group box,

   A. Choose the area of the tree's location within the Town from the **Location** drop-down list.

   B. If the tree is along a street: choose "street tree" from the Location list, then type the house number associated with the tree in the House # field. Then choose the street from the **Street Name** drop-down list.

   C. In the **Latitude** field, type the latitude in degrees (°), minutes ('), and seconds (") N.

   D. In the **Longitude** field, type the longitude in degrees (°), minutes ('), and seconds (") W.

NOTE: This data will allow a future surveyor to identify the location within a few feet of where the tree is supposed to be. Not to use this function will ultimately lead to confusion on which tree is which. Providing this geolocation, the DBH, and species will help narrow down the search among any other trees in the area.

5. In the **Comments** field, type any surveyor's notes (such as when field pruning was done on a particular tree, condition changes to watch, or features important to tracking this trees health)
6. Complete the **Administrative** group box:

   A. Type the name of the surveyor who surveyed the tree in the Tree Surveyed By field.

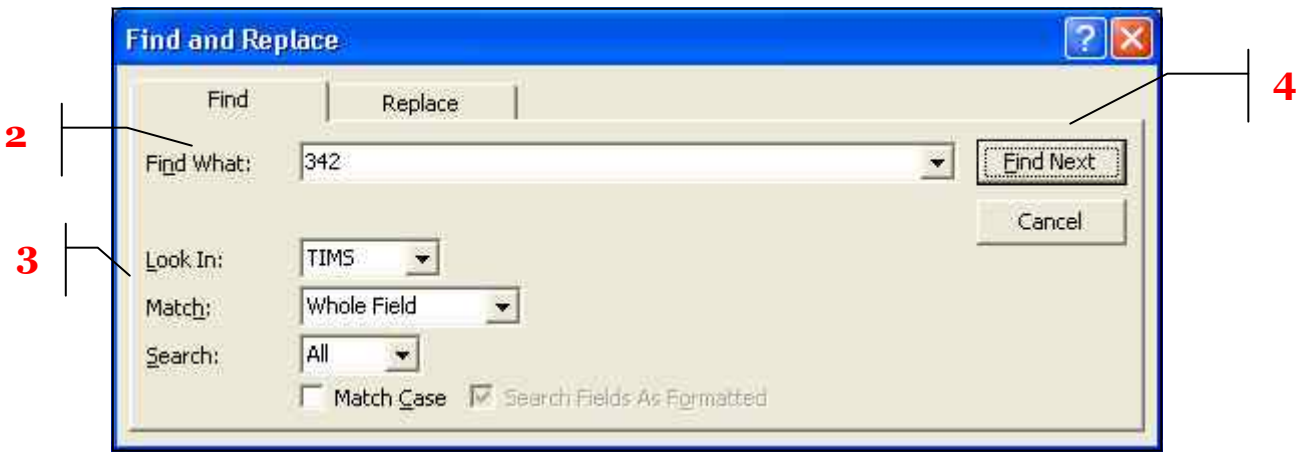
   B. Type the date in format) when the tree was surveyed in the Survey Date field.

   C. Type the name of the user who entered the data into TIMS in the Data Entered By field.

NOTE: The Data Entered field is auto-filled with the current date when the Save and Add function is invoked. Similarly, the Last Date Updated field is auto-filled with the current date when changes were last made.

<u>To Find a Tree in TIMS:</u>

1. Click **Find Tree**.
2. In the **Find What** field, type the tree's Id number.
3. From the **Look In** drop-down list, select TIMS.



4. Click **Find Next**.

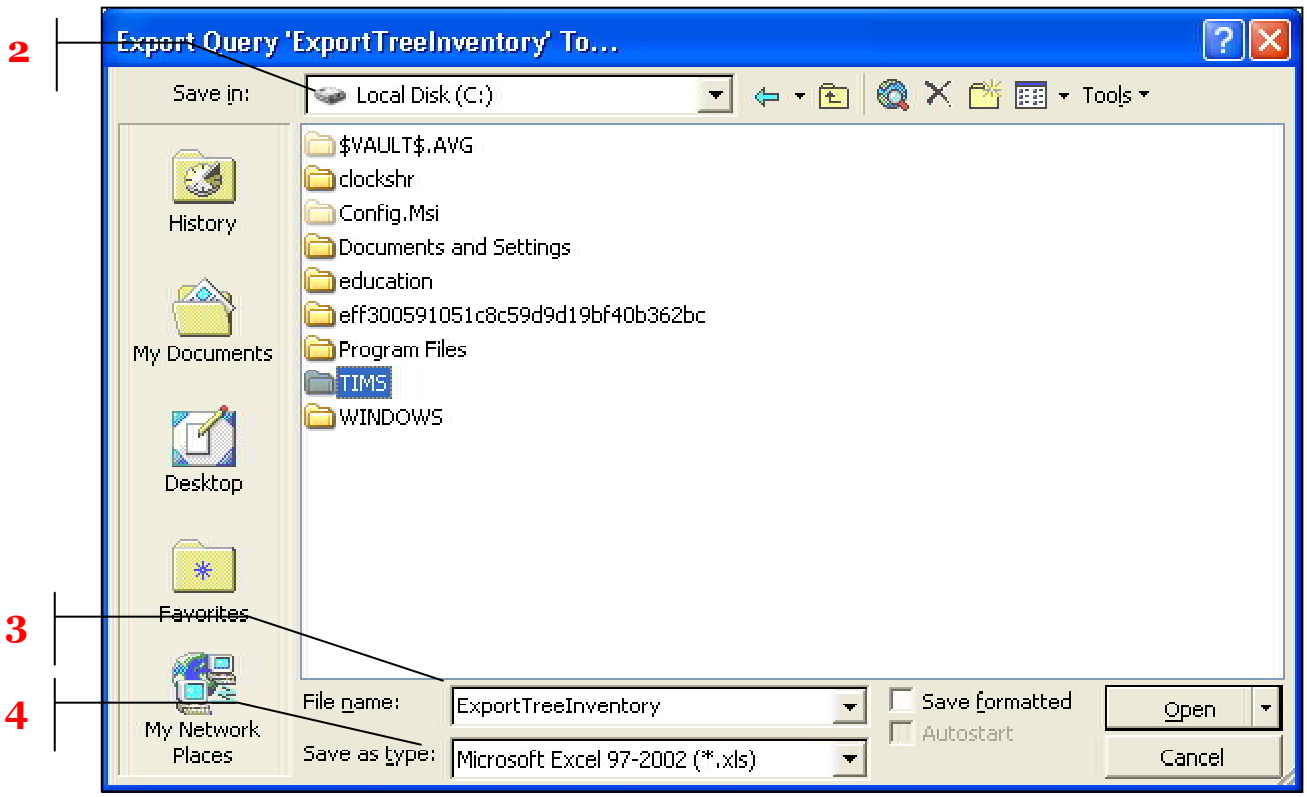
<u>To Save and Exit TIMS:</u>

1. Click **Save and Exit**.
2. The TIMS program will close.

To Generate a Report from TIMS:

1. Click **Export to Excel**.
2. In the Export Query dialog box, choose the file location where you want to save the report and type a name for the file.
3. In the **File** name field, type a name for your report.
4. In the **Save as type** drop-down list, choose Microsoft Excel.
5. Click **Export All**.

NOTE: Any data exported to Excel and manipulated is independent of the TIMS data and when manipulated it will have no effect on the TIMS database.



Ponce Inlet Urban Forest Data Collection Sheet

ID #	LOCATION	SPECIES	DBH	COND	CONSTL	MAINT CMNTS	LONGITUDE	LATITUDE

ID #: This is a unique number that can not be used more than once. Consult TIMS data base for the next open tree number.
Location: Street with house number is applicable.
Species: Consult UFMP for a listing of species that have been previously identified it the town
DBH: measured at 4.5 feet above natural grade, follow guidelines in the Urban Forest Management Plan
Condition: Good, Fair, Poor, Dead
CONSTL: Is a professional consultation need by a certified arborist? Yes or No
MAINT-COMTS: Is maintenance needed? Pruning, removal, pest identification, relocation. Describe work to be completed

APPENDIX B

TREE MAINTENANCE SCHEDULE

Activity	Generally	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
General Management													
Access new tree conflicts, both parks and street trees						X	X	X	X				
Town-wide hazard tree evaluations	As needed												
Pest Management													
Treatments or determination for removal				X	X	X				X	X	X	
Pruning													
Priority one													
All other													
Pruning training													
Fertilization													
Street trees only, as needed based on health evaluation													
Removal													
Hazard tree removal	As needed												
Priority one													
All other													
Exotic Removal													
Monitor sites that are known to contain invasive species													
Brazilian pepper removal – based on berry production													
Inventory													
Community tree observations													
Update Tree Data Base				X							X		
Tree Planting													
Site location determination													
Site preparation – to occur just prior to planting		X	X									X	
Installation of new tree		X	X									X	

Shaded area indicate the most appropriate window for the activity

An ‘X’ indicates the optimal time based on arboriculture practices

APPENDIX C

MASTER TREE INVENTORY

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
1	*Quercus virginiana*	Live oak	7.75	29° 6' 59.879" N	80° 57' 5.094" W	Street Tree	Good
2	*Quercus virginiana*	Live oak	8.25	29° 6' 59.791" N	80° 57' 4.984" W	Street Tree	Good
3	*Quercus virginiana*	Live oak	9.25	29° 6' 59.720" N	80° 57' 4.927" W	Street Tree	Good
4	*Quercus virginiana*	Live oak	9	29° 6' 59.698" N	80° 57' 4.909" W	Street Tree	Good
5	*Quercus virginiana*	Live oak	13	29° 6' 59.642" N	80° 57' 4.937" W	Street Tree	Good
6	*Quercus virginiana*	Live oak	14	29° 6' 59.629" N	80° 57' 4.852" W	Street Tree	Good
7	*Quercus virginiana*	Live oak	18	29° 6' 58.451" N	80° 57' 3.802" W	Street Tree	Good
8	*Quercus virginiana*	Live oak	13.25	29° 6' 58.187" N	80° 57' 3.654" W	Street Tree	Good
9	*Quercus virginiana*	Live oak	15	29° 6' 57.529" N	80° 57' 3.465" W	Street Tree	Good
10	*Quercus virginiana*	Live oak	25	29° 6' 57.445" N	80° 57' 3.219" W	Street Tree	Good
11	*Quercus virginiana*	Live oak	10	29° 6' 56.750" N	80° 57' 2.943" W	Street Tree	Good
12	*Quercus virginiana*	Live oak	12	29° 6' 56.772" N	80° 57' 3.002" W	Street Tree	Good
13	*Persea borbonia*	Redbay	13	29° 6' 56.497" N	80° 57' 2.820" W	Street Tree	Good
14	*Quercus virginiana*	Live oak	18.5	29° 6' 56.075" N	80° 57' 2.547" W	Street Tree	Good
15	*Juniperus virginiana*	Red cedar	18.75	29° 6' 53.809" N	80° 57' 1.459" W	Street Tree	Good
16	*Quercus virginiana*	Live oak	16.75	29° 6' 53.046" N	80° 57' 1.015" W	Street Tree	Good
17	*Quercus virginiana*	Live oak	7.75	29° 6' 52.666" N	80° 57' 0.820" W	Street Tree	Good
18	*Juniperus virginiana*	Red cedar	10	29° 6' 50.807" N	80° 56' 59.859" W	Street Tree	Good
19	*Quercus virginiana*	Live oak	10.5	29° 6' 50.807" N	80° 56' 59.859" W	Street Tree	Good
20	*Quercus virginiana*	Live oak	31	29° 6' 50.494" N	80° 56' 59.768" W	Street Tree	Good
21	*Quercus virginiana*	Live oak	11	29° 6' 50.461" N	80° 56' 59.613" W	Street Tree	Good
22	*Quercus virginiana*	Live oak	10.5	29° 6' 50.446" N	80° 56' 59.663" W	Street Tree	Good
23	*Quercus virginiana*	Live oak	8.25	29° 6' 50.331" N	80° 56' 59.522" W	Street Tree	Good
24	*Quercus virginiana*	Live oak	17.5	29° 6' 50.065" N	80° 56' 59.358" W	Street Tree	Good
25	*Quercus virginiana*	Live oak	16.5	29° 6' 49.573" N	80° 56' 59.201" W	Street Tree	Good
26	*Quercus virginiana*	Live oak	8.25	29° 6' 47.329" N	80° 56' 57.516" W	Street Tree	Good
27	*Celtis laevigata*	Hackberry	5.25	29° 6' 39.941" N	80° 56' 53.290" W	Street Tree	Good
28	*Quercus virginiana*	Live oak	18	29° 6' 20.666" N	80° 56' 42.220" W	TBG	Good
29	*Quercus virginiana*	Live oak	13.25	29° 6' 20.667" N	80° 56' 42.189" W	TBG	Good
30	*Quercus virginiana*	Live oak	19.5	29° 6' 20.025" N	80° 56' 42.640" W	TBG	Good
31	*Quercus virginiana*	Live oak	29	29° 6' 19.980" N	80° 56' 42.957" W	TBG	Good
32	*Quercus virginiana*	Live oak	18	29° 6' 19.968" N	80° 56' 43.165" W	TBG	Good
33	*Quercus virginiana*	Live oak	30	29° 6' 20.023" N	80° 56' 43.566" W	TBG	Good
34	*Quercus virginiana*	Live oak	24	29° 6' 19.988" N	80° 56' 44.167" W	TBG	Good
35	*Quercus virginiana*	Live oak	17.5	29° 6' 20.143" N	80° 56' 44.077" W	TBG	Good
36	*Quercus virginiana*	Live oak	21.25	29° 6' 20.311" N	80° 56' 44.235" W	TBG	Good
37	*Quercus virginiana*	Live oak	19.75	29° 6' 19.283" N	80° 56' 43.912" W	TBG	Good
38	*Quercus virginiana*	Live oak	20	29° 6' 19.362" N	80° 56' 43.858" W	TBG	Good
39	*Quercus virginiana*	Live oak	12.25	29° 6' 19.306" N	80° 56' 43.670" W	TBG	Good
40	*Quercus virginiana*	Live oak	13.25	29° 6' 19.214" N	80° 56' 43.759" W	TBG	Good

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
41	*Quercus virginiana*	Live oak	13	29° 6' 19.088" N	80° 56' 43.258" W	TBG	Good
42	*Quercus virginiana*	Live oak	15.25	29° 6' 19.294" N	80° 56' 43.379" W	TBG	Good
43	*Quercus virginiana*	Live oak	14.75	29° 6' 19.273" N	80° 56' 43.404" W	TBG	Good
44	*Quercus virginiana*	Live oak	13	29° 6' 19.441" N	80° 56' 43.446" W	TBG	Good
45	*Quercus virginiana*	Live oak	13.25	29° 6' 19.382" N	80° 56' 43.243" W	TBG	Good
46	*Quercus virginiana*	Live oak	16.5	29° 6' 19.483" N	80° 56' 43.616" W	TBG	Good
47	*Quercus virginiana*	Live oak	13.75	29° 6' 19.136" N	80° 56' 43.827" W	TBG	Good
48	*Quercus virginiana*	Live oak	12.25	29° 6' 19.124" N	80° 56' 43.776" W	TBG	Good
49	*Quercus virginiana*	Live oak	10.5	29° 6' 19.061" N	80° 56' 43.823" W	TBG	Good
50	*Quercus virginiana*	Live oak	16	29° 6' 19.172" N	80° 56' 43.913" W	TBG	Fair
51	*Quercus virginiana*	Live oak	15.25	29° 6' 18.830" N	80° 56' 44.133" W	TBG	Good
52	*Quercus virginiana*	Live oak	15	29° 6' 18.544" N	80° 56' 43.900" W	TBG	Fair
53	*Quercus virginiana*	Live oak	15.5	29° 6' 18.541" N	80° 56' 43.871" W	TBG	Good
54	*Quercus virginiana*	Live oak	31	29° 6' 18.737" N	80° 56' 44.242" W	TBG	Good
55	*Quercus virginiana*	Live oak	11.25	29° 6' 18.915" N	80° 56' 44.067" W	TBG	Good
56	*Quercus virginiana*	Live oak	15.5	29° 6' 18.996" N	80° 56' 44.290" W	TBG	Good
57	*Quercus virginiana*	Live oak	24.5	29° 6' 18.862" N	80° 56' 44.601" W	TBG	Good
58	*Quercus virginiana*	Live oak	21	29° 6' 18.802" N	80° 56' 44.667" W	TBG	Good
59	*Quercus virginiana*	Live oak	22	29° 6' 18.400" N	80° 56' 44.912" W	TBG	Fair
60	*Quercus virginiana*	Live oak	23.25	29° 6' 18.341" N	80° 56' 44.903" W	TBG	Good
61	*Quercus virginiana*	Live oak	28.75	29° 6' 18.693" N	80° 56' 44.924" W	TBG	Good
62	*Juniperus virginiana*	Red cedar	17.25	29° 6' 18.849" N	80° 56' 45.542" W	TBG	Good
63	*Juniperus virginiana*	Red cedar	18.75	29° 6' 19.153" N	80° 56' 45.274" W	TBG	Good
64	*Juniperus virginiana*	Red cedar	17	29° 6' 19.210" N	80° 56' 45.005" W	TBG	Fair
65	*Quercus virginiana*	Live oak	12.5	29° 6' 19.215" N	80° 56' 44.866" W	TBG	Good
66	*Quercus virginiana*	Live oak	34	29° 6' 19.312" N	80° 56' 44.429" W	TBG	Good
67	*Quercus virginiana*	Live oak	12.75	29° 6' 19.194" N	80° 56' 44.081" W	TBG	Good
68	*Quercus virginiana*	Live oak	18.75	29° 6' 19.273" N	80° 56' 43.986" W	TBG	Good
69	*Juniperus virginiana*	Red cedar	13.25	29° 6' 19.578" N	80° 56' 44.451" W	TBG	Poor
70	*Quercus virginiana*	Live oak	16.75	29° 6' 19.774" N	80° 56' 44.647" W	TBG	Good
71	*Quercus virginiana*	Live oak	19	29° 6' 19.750" N	80° 56' 44.701" W	TBG	Good
72	*Juniperus virginiana*	Red cedar	20.75	29° 6' 19.503" N	80° 56' 45.038" W	TBG	Fair
73	*Quercus virginiana*	Live oak	22	29° 6' 19.897" N	80° 56' 45.047" W	TBG	Good
74	*Quercus virginiana*	Live oak	13.25	29° 6' 19.807" N	80° 56' 44.995" W	TBG	Good
75	*Quercus virginiana*	Live oak	12.25	29° 6' 19.735" N	80° 56' 45.350" W	TBG	Good
76	*Quercus virginiana*	Live oak	25.75	29° 6' 19.586" N	80° 56' 45.308" W	TBG	Good
77	*Persea borbonia*	Redbay	18.5	29° 6' 19.958" N	80° 56' 45.658" W	TBG	Good
78	*Persea borbonia*	Redbay	18.5	29° 6' 19.877" N	80° 56' 45.681" W	TBG	Good
79	*Juniperus virginiana*	Red cedar	18.25	29° 6' 19.246" N	80° 56' 45.563" W	TBG	Good
80	*Quercus virginiana*	Live oak	13.5	29° 6' 19.490" N	80° 56' 45.738" W	TBG	Good

Master Tree Inventory

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
81	*Quercus virginiana*	Live oak	14	29° 6' 19.488" N	80° 56' 45.803" W	TBG	Good
82	*Quercus virginiana*	Live oak	11.75	29° 6' 19.527" N	80° 56' 45.894" W	TBG	Good
83	*Juniperus virginiana*	Red cedar	32	29° 6' 19.334" N	80° 56' 46.396" W	TBG	Good
84	*Quercus virginiana*	Live oak	12.5	29° 6' 19.853" N	80° 56' 47.480" W	TBG	Good
85	*Quercus virginiana*	Live oak	12	29° 6' 19.710" N	80° 56' 48.467" W	TBG	Good
86	*Juniperus virginiana*	Red cedar	23.5	29° 6' 18.503" N	80° 56' 46.024" W	TBG	Good
87	*Quercus virginiana*	Live oak	12.25	29° 6' 18.414" N	80° 56' 46.360" W	TBG	Good
88	*Quercus virginiana*	Live oak	13	29° 5' 54.820" N	80° 56' 26.710" W	Tennis Court	Good
89	*Magnolia grandiflora*	Southern	22.5	29° 5' 54.822" N	80° 56' 26.063" W	Tennis Court	Good
90	*Ilex vomitoria*	Yaupon holly	2.75	29° 5' 54.850" N	80° 56' 25.877" W	Tennis Court	Good
91	*Ilex vomitoria*	Yaupon holly	4	29° 5' 54.817" N	80° 56' 25.817" W	Tennis Court	Good
92	*Myrcianthes fragrans*	Simpson's	7.5	29° 5' 54.582" N	80° 56' 25.603" W	Tennis Court	Good
93	*Persea borbonia*	Redbay	9.25	29° 5' 54.602" N	80° 56' 25.713" W	Tennis Court	Good
94	*Persea borbonia*	Redbay	7.75	29° 5' 54.535" N	80° 56' 25.766" W	Tennis Court	Good
95	*Persea borbonia*	Redbay	9	29° 5' 54.503" N	80° 56' 25.812" W	Tennis Court	Good
96	*Persea borbonia*	Redbay	6	29° 5' 54.520" N	80° 56' 25.833" W	Tennis Court	Good
97	*Persea borbonia*	Redbay	9	29° 5' 54.423" N	80° 56' 25.774" W	Tennis Court	Good
98	*Persea borbonia*	Redbay	8.25	29° 5' 54.433" N	80° 56' 25.788" W	Tennis Court	Good
99	*Persea borbonia*	Redbay	6	29° 5' 54.487" N	80° 56' 25.973" W	Tennis Court	Good
100	*Persea borbonia*	Redbay	11.75	29° 5' 54.529" N	80° 56' 26.039" W	Tennis Court	Good
101	*Persea borbonia*	Redbay	11	29° 5' 54.489" N	80° 56' 25.969" W	Tennis Court	Good
102	*Persea borbonia*	Redbay	14.25	29° 5' 54.529" N	80° 56' 26.046" W	Tennis Court	Good
103	*Persea borbonia*	Redbay	11.5	29° 5' 54.389" N	80° 56' 25.958" W	Tennis Court	Good
104	*Myrcianthes fragrans*	Simpson's	5.5	29° 5' 54.221" N	80° 56' 26.292" W	Tennis Court	Good
105	*Myrcianthes fragrans*	Simpson's	5.75	29° 5' 54.222" N	80° 56' 26.349" W	Tennis Court	Good
106	*Persea borbonia*	Redbay	14	29° 5' 53.858" N	80° 56' 26.281" W	Tennis Court	Good
107	*Persea borbonia*	Redbay	17.5	29° 5' 53.865" N	80° 56' 26.251" W	Tennis Court	Good
108	*Persea borbonia*	Redbay	17	29° 5' 53.882" N	80° 56' 26.236" W	Tennis Court	Good
109	*Quercus virginiana*	Live oak	7	29° 5' 53.590" N	80° 56' 26.083" W	Tennis Court	Good
110	*Quercus virginiana*	Live oak	9	29° 5' 53.435" N	80° 56' 26.027" W	Tennis Court	Good
111	*Quercus virginiana*	Live oak	10	29° 5' 53.246" N	80° 56' 25.901" W	Tennis Court	Good
112	*Persea borbonia*	Redbay	8.75	29° 5' 54.080" N	80° 56' 25.374" W	Tennis Court	Good
113	*Persea borbonia*	Redbay	9.75	29° 5' 53.635" N	80° 56' 25.157" W	Tennis Court	Good
114	*Persea borbonia*	Redbay	5.25	29° 5' 53.629" N	80° 56' 25.117" W	Tennis Court	Good
115	*Persea borbonia*	Redbay	7.75	29° 5' 53.698" N	80° 56' 25.119" W	Tennis Court	Good
116	*Persea borbonia*	Redbay	9.75	29° 5' 53.724" N	80° 56' 25.114" W	Tennis Court	Good
117	*Persea borbonia*	Redbay	8.75	29° 5' 53.688" N	80° 56' 25.492" W	Tennis Court	Good
118	*Persea borbonia*	Redbay	12.5	29° 5' 53.700" N	80° 56' 25.463" W	Tennis Court	Good
119	*Persea borbonia*	Redbay	11.5	29° 5' 53.670" N	80° 56' 25.446" W	Tennis Court	Good
120	*Persea borbonia*	Redbay	7.5	29° 5' 53.637" N	80° 56' 25.370" W	Tennis Court	Good

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
121	*Sideroxylon tenax*	Toughbully	7.5	29° 5' 53.467" N	80° 56' 25.596" W	Tennis Court	Good
122	*Sideroxylon tenax*	Toughbully	7	29° 5' 53.474" N	80° 56' 25.553" W	Tennis Court	Good
123	*Persea borbonia*	Redbay	14.75	29° 5' 53.265" N	80° 56' 25.540" W	Tennis Court	Good
124	*Myrcianthes fragrans*	Simpson's	5.5	29° 5' 53.194" N	80° 56' 25.608" W	Tennis Court	Good
125	*Persea borbonia*	Redbay	18	29° 5' 53.017" N	80° 56' 25.693" W	Tennis Court	Good
126	*Persea borbonia*	Redbay	9	29° 5' 52.841" N	80° 56' 25.563" W	Tennis Court	Good
127	*Myrcianthes fragrans*	Simpson's	6.75	29° 5' 52.835" N	80° 56' 25.344" W	Tennis Court	Good
128	*Myrcianthes fragrans*	Simpson’s	7	29° 5' 52.826" N	80° 56' 25.342" W	Tennis Court	Good
129	*Persea borbonia*	Redbay	18.5	29° 5' 52.978" N	80° 56' 25.192" W	Tennis Court	Good
130	*Persea borbonia*	Redbay	12.5	29° 5' 53.180" N	80° 56' 25.049" W	Tennis Court	Good
131	*Persea borbonia*	Redbay	12.5	29° 5' 53.238" N	80° 56' 25.067" W	Tennis Court	Good
132	*Persea borbonia*	Redbay	9.5	29° 5' 53.231" N	80° 56' 25.014" W	Tennis Court	Good
133	*Persea borbonia*	Redbay	4	29° 5' 53.367" N	80° 56' 24.961" W	Tennis Court	Good
134	*Persea borbonia*	Redbay	7.75	29° 5' 53.415" N	80° 56' 24.941" W	Tennis Court	Good
135	*Persea borbonia*	Redbay	10	29° 5' 53.343" N	80° 56' 24.848" W	Tennis Court	Good
136	*Persea borbonia*	Redbay	10.5	29° 5' 53.125" N	80° 56' 24.895" W	Tennis Court	Good
137	*Persea borbonia*	Redbay	11	29° 5' 53.111" N	80° 56' 24.883" W	Tennis Court	Good
138	*Quercus virginiana*	Live oak	13.25	29° 5' 52.997" N	80° 56' 24.681" W	Tennis Court	Good
139	*Persea borbonia*	Redbay	4.75	29° 5' 52.906" N	80° 56' 24.649" W	Tennis Court	Good
140	*Ilex vomitoria*	Yaupon holly	5.75	29° 5' 52.904" N	80° 56' 24.669" W	Tennis Court	Good
141	*Ilex vomitoria*	Yaupon holly	4	29° 5' 52.860" N	80° 56' 24.681" W	Tennis Court	Good
142	*Ilex vomitoria*	Yaupon holly	5	29° 5' 52.835" N	80° 56' 24.763" W	Tennis Court	Good
143	*Persea borbonia*	Redbay	5.25	29° 5' 52.779" N	80° 56' 24.654" W	Tennis Court	Good
144	*Ilex vomitoria*	Yaupon holly	7	29° 5' 52.746" N	80° 56' 24.564" W	Tennis Court	Good
145	*Ilex vomitoria*	Yaupon holly	4	29° 5' 52.754" N	80° 56' 24.511" W	Tennis Court	Good
146	*Persea borbonia*	Redbay	11.5	29° 5' 52.581" N	80° 56' 24.675" W	Tennis Court	Good
147	*Persea borbonia*	Redbay	18.25	29° 5' 52.516" N	80° 56' 24.700" W	Tennis Court	Good
148	*Persea borbonia*	Redbay	9	29° 5' 52.508" N	80° 56' 24.668" W	Tennis Court	Good
149	*Persea borbonia*	Redbay	13.25	29° 5' 52.471" N	80° 56' 24.664" W	Tennis Court	Good
150	*Persea borbonia*	Redbay	12.5	29° 5' 52.504" N	80° 56' 24.884" W	Tennis Court	Good
151	*Persea borbonia*	Redbay	13.5	29° 5' 52.506" N	80° 56' 24.849" W	Tennis Court	Good
152	*Persea borbonia*	Redbay	7.75	29° 5' 52.426" N	80° 56' 24.902" W	Tennis Court	Good
153	*Persea borbonia*	Redbay	9.25	29° 5' 52.455" N	80° 56' 24.942" W	Tennis Court	Good
154	*Persea borbonia*	Redbay	12	29° 5' 52.149" N	80° 56' 24.857" W	Tennis Court	Good
155	*Persea borbonia*	Redbay	13	29° 5' 52.132" N	80° 56' 24.820" W	Tennis Court	Good
156	*Myrcianthes fragrans*	Simpson's	5.25	29° 5' 52.053" N	80° 56' 25.346" W	Tennis Court	Good
157	*Myrcianthes fragrans*	Simpson's	5	29° 5' 52.095" N	80° 56' 25.379" W	Tennis Court	Good
158	*Persea borbonia*	Redbay	15.25	29° 5' 52.347" N	80° 56' 25.316" W	Tennis Court	Good
159	*Persea borbonia*	Redbay	13.25	29° 5' 52.365" N	80° 56' 25.262" W	Tennis Court	Good
160	*Persea borbonia*	Redbay	7	29° 5' 52.245" N	80° 56' 25.263" W	Tennis Court	Good

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
161	*Persea borbonia*	Redbay	14.25	29° 5' 52.319" N	80° 56' 25.316" W	Tennis Court	Good
162	*Persea borbonia*	Redbay	9.25	29° 5' 52.380" N	80° 56' 25.306" W	Tennis Court	Good
163	*Persea borbonia*	Redbay	2.5	29° 5' 52.380" N	80° 56' 25.333" W	Tennis Court	Good
164	*Persea borbonia*	Redbay	11.5	29° 5' 52.403" N	80° 56' 25.396" W	Tennis Court	Good
165	*Quercus virginiana*	Live oak	4.25	29° 5' 52.017" N	80° 56' 25.573" W	Tennis Court	Good
166	*Quercus virginiana*	Live oak	2.5	29° 5' 51.961" N	80° 56' 25.719" W	Tennis Court	Good
167	*Myrcianthes fragrans*	Simpson's	4.75	29° 5' 51.771" N	80° 56' 25.434" W	Tennis Court	Good
168	*Myrcianthes fragrans*	Simpson's	4.25	29° 5' 51.791" N	80° 56' 25.403" W	Tennis Court	Good
169	*Magnolia grandiflora*	Southern	2.5	29° 5' 51.584" N	80° 56' 25.706" W	Tennis Court	Good
170	*Magnolia grandiflora*	Southern	2.5	29° 5' 51.789" N	80° 56' 25.844" W	Tennis Court	Good
171	*Juniperus virginiana*	Red cedar	27.5	29° 5' 51.618" N	80° 56' 25.989" W	Tennis Court	Good
172	*Quercus virginiana*	Live oak	6	29° 5' 51.428" N	80° 56' 25.347" W	Tennis Court	Good
173	*Myrcianthes fragrans*	Simpson's	6	29° 5' 52.644" N	80° 56' 25.009" W	Tennis Court	Good
174	*Myrcianthes fragrans*	Simpson's	5.75	29° 5' 52.689" N	80° 56' 24.961" W	Tennis Court	Good
175	*Myrcianthes fragrans*	Simpson's	4.75	29° 5' 52.840" N	80° 56' 24.937" W	Tennis Court	Good
176	*Myrcianthes fragrans*	Simpson's	4.75	29° 5' 52.821" N	80° 56' 24.931" W	Tennis Court	Good
177	*Quercus virginiana*	Live oak	7	29° 5' 49.324" N	80° 56' 22.720" W	dog park row	Good
178	*Quercus virginiana*	Live oak	12.75	29° 5' 49.433" N	80° 56' 23.200" W	Dog Park	Good
179	*Quercus virginiana*	Live oak	26.25	29° 5' 49.359" N	80° 56' 23.705" W	Dog Park	Good
180	*Quercus virginiana*	Live oak	20.25	29° 5' 49.365" N	80° 56' 23.935" W	Dog Park	Good
181	*Quercus virginiana*	Live oak	8	29° 5' 49.283" N	80° 56' 24.040" W	Dog Park	Good
182	*Quercus virginiana*	Live oak	23	29° 5' 49.296" N	80° 56' 24.185" W	Dog Park	Good
183	*Quercus virginiana*	Live oak	42	29° 5' 49.305" N	80° 56' 24.278" W	Dog Park	Good
184	*Quercus virginiana*	Live oak	25.25	29° 5' 49.454" N	80° 56' 24.389" W	Dog Park	Good
185	*Quercus virginiana*	Live oak	18	29° 5' 49.098" N	80° 56' 24.098" W	Dog Park	Good
186	*Quercus virginiana*	Live oak	16.75	29° 5' 49.563" N	80° 56' 22.705" W	Dog Park	Good
187	*Quercus virginiana*	Live oak	11	29° 5' 49.598" N	80° 56' 22.700" W	Dog Park	Good
188	*Quercus virginiana*	Live oak	8	29° 5' 50.008" N	80° 56' 23.096" W	Dog Park	Good
189	*Quercus virginiana*	Live oak	16.5	29° 5' 49.523" N	80° 56' 23.312" W	Dog Park	Good
190	*Quercus virginiana*	Live oak	14	29° 5' 49.572" N	80° 56' 23.305" W	Dog Park	Good
191	*Quercus virginiana*	Live oak	15.5	29° 5' 49.660" N	80° 56' 23.266" W	Dog Park	Good
192	*Quercus virginiana*	Live oak	8	29° 5' 49.682" N	80° 56' 23.278" W	Dog Park	Good
193	*Quercus virginiana*	Live oak	9.5	29° 5' 49.811" N	80° 56' 23.363" W	Dog Park	Good
194	*Quercus virginiana*	Live oak	11.25	29° 5' 49.826" N	80° 56' 23.388" W	Dog Park	Good
195	*Quercus virginiana*	Live oak	16.5	29° 5' 49.785" N	80° 56' 23.436" W	Dog Park	Good
196	*Quercus virginiana*	Live oak	6.5	29° 5' 49.871" N	80° 56' 23.474" W	Dog Park	Good
197	*Quercus virginiana*	Live oak	7.5	29° 5' 49.867" N	80° 56' 23.485" W	Dog Park	Good
198	*Quercus virginiana*	Live oak	10.25	29° 5' 49.962" N	80° 56' 23.400" W	Dog Park	Good
199	*Quercus virginiana*	Live oak	11	29° 5' 49.919" N	80° 56' 23.537" W	Dog Park	Good
200	*Quercus virginiana*	Live oak	8.75	29° 5' 49.588" N	80° 56' 23.590" W	Dog Park	Good

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Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
201	*Quercus virginiana*	Live oak	24.75	29° 5' 49.819" N	80° 56' 23.758" W	Dog Park	Good
202	*Quercus virginiana*	Live oak	10.5	29° 5' 49.920" N	80° 56' 23.730" W	Dog Park	Good
203	*Quercus virginiana*	Live oak	8.75	29° 5' 49.855" N	80° 56' 23.805" W	Dog Park	Good
204	*Quercus virginiana*	Live oak	10.75	29° 5' 49.826" N	80° 56' 23.845" W	Dog Park	Good
205	*Quercus virginiana*	Live oak	15	29° 5' 49.708" N	80° 56' 24.106" W	Dog Park	Good
206	*Quercus virginiana*	Live oak	7.75	29° 5' 49.640" N	80° 56' 24.203" W	Dog Park	Good
207	*Quercus virginiana*	Live oak	8.75	29° 5' 49.576" N	80° 56' 24.024" W	Dog Park	Good
208	*Persea borbonia*	Redbay	8	29° 5' 56.726" N	80° 56' 27.028" W	Street Tree	Good
209	*Persea borbonia*	Redbay	12.5	29° 5' 56.684" N	80° 56' 27.055" W	Street Tree	Good
210	*Persea borbonia*	Redbay	9.75	29° 5' 56.703" N	80° 56' 27.066" W	Street Tree	Good
211	*Persea borbonia*	Redbay	8.75	29° 5' 56.616" N	80° 56' 26.903" W	Street Tree	Good
212	*Persea borbonia*	Redbay	8.75	29° 4' 53.393" N	80° 55' 52.564" W	Street Tree	Good
213	*Persea borbonia*	Redbay	11	29° 4' 53.161" N	80° 55' 49.700" W	Street Tree	Good
214	*Persea borbonia*	Redbay	11.75	29° 5' 0.597" N	80° 56' 1.474" W	Street Tree	Good
215	*Persea borbonia*	Redbay	11.5	29° 5' 1.604" N	80° 56' 1.787" W	Street Tree	Good
216	*Persea borbonia*	Redbay	11	29° 4' 58.385" N	80° 55' 56.773" W	Street Tree	Good
217	*Quercus geminata*	Sand live oak	8.5	29° 4' 52.690" N	80° 55' 46.729" W	Street Tree	Good
218	*Quercus geminata*	Sand live oak	10.2	29° 4' 52.365" N	80° 55' 53.245" W	Street Tree	Good
219	*Quercus geminata*	Sand live oak	8.5	29° 4' 53.156" N	80° 55' 49.435" W	Street Tree	Good
220	*Quercus geminata*	Sand live oak	8.25	29° 4' 53.159" N	80° 55' 49.540" W	Street Tree	Good
221	*Quercus geminata*	Sand live oak	8	29° 4' 53.237" N	80° 55' 50.595" W	Street Tree	Good
222	*Quercus geminata*	Sand live oak	9.25	29° 4' 53.195" N	80° 55' 50.788" W	Street Tree	Good
223	*Quercus geminata*	Sand live oak	10.5	29° 4' 52.365" N	80° 55' 53.245" W	Street Tree	Good
224	*Quercus laurifolia*	Sand live oak	9	29° 5' 2.769" N	80° 56' 2.196" W	Street Tree	Good
225	*Quercus virginiana*	Live oak	10.25	29° 5' 56.141" N	80° 56' 27.047" W	Street Tree	Good
226	*Quercus virginiana*	Live oak	8.25	29° 5' 56.061" N	80° 56' 26.762" W	Street Tree	Good
227	*Quercus virginiana*	Live oak	11	29° 5' 55.923" N	80° 56' 26.508" W	Street Tree	Good
228	*Quercus virginiana*	Live oak	11	29° 5' 55.648" N	80° 56' 26.355" W	Street Tree	Good
229	*Quercus virginiana*	Live oak	10.5	29° 5' 44.566" N	80° 56' 19.712" W	Street Tree	Good
230	*Quercus virginiana*	Live oak	11.5	29° 5' 43.737" N	80° 56' 19.300" W	Street Tree	Good
231	*Quercus virginiana*	Live oak	12	29° 5' 42.768" N	80° 56' 18.658" W	Street Tree	Good
232	*Quercus virginiana*	Live oak	11.25	29° 5' 0.595" N	80° 56' 1.251" W	Street Tree	Good
233	*Quercus virginiana*	Live oak	9	29° 5' 32.471" N	80° 56' 12.740" W	Street Tree	Good
234	*Quercus virginiana*	Live oak	10.5	29° 5' 3.802" N	80° 56' 2.948" W	Street Tree	Good
235	*Quercus virginiana*	Live oak	11.5	29° 4' 49.538" N	80° 55' 50.156" W	Street Tree	Good
236	*Quercus virginiana*	Live oak	11.5	29° 4' 53.485" N	80° 55' 56.034" W	Street Tree	Good
237	*Quercus virginiana*	Live oak	8.75	29° 4' 53.674" N	80° 55' 47.868" W	Street Tree	Good
238	*Quercus virginiana*	Live oak	10.75	29° 4' 58.429" N	80° 55' 56.797" W	Street Tree	Good
239	*Quercus virginiana*	Live oak	11.25	29° 5' 32.531" N	80° 56' 12.778" W	Street Tree	Good
240	*Quercus virginiana*	Live oak	11	29° 5' 1.723" N	80° 56' 6.556" W	Street Tree	Good

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Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
241	*Quercus virginiana*	Live oak	11.5	29° 4' 54.109" N	80° 55' 47.475" W	Street Tree	Good
242	*Quercus virginiana*	Live oak	11.25	29° 4' 53.595" N	80° 55' 51.977" W	Street Tree	Good
243	*Quercus virginiana*	Live oak	8.5	29° 5' 1.205" N	80° 56' 1.656" W	Street Tree	Good
244	*Quercus virginiana*	Live oak	9.25	29° 5' 2.216" N	80° 56' 2.143" W	Street Tree	Good
245	*Quercus virginiana*	Live oak	10.5	29° 5' 26.696" N	80° 56' 9.135" W	Street Tree	Good
246	*Quercus virginiana*	Live oak	10	29° 5' 2.892" N	80° 56' 3.787" W	Street Tree	Good
247	*Quercus virginiana*	Live oak	11	29° 4' 53.175" N	80° 55' 51.797" W	Street Tree	Good
248	*Quercus virginiana*	Live oak	10.75	29° 4' 53.658" N	80° 55' 52.065" W	Street Tree	Good
249	*Quercus virginiana*	Live oak	8.75	29° 4' 52.041" N	80° 55' 53.488" W	Street Tree	Good
250	*Quercus virginiana*	Live oak	8	29° 4' 55.759" N	80° 55' 39.866" W	Street Tree	Good
251	*Quercus virginiana*	Live oak	12	29° 5' 5.622" N	80° 55' 46.533" W	Street Tree	Good
252	*Juniperus virginiana*	Red cedar	13.5	29° 5' 13.971" N	80° 56' 2.172" W	Street Tree	Good
253	*Juniperus virginiana*	Red cedar	13.75	29° 5' 3.727" N	80° 56' 2.798" W	Street Tree	Good
254	*Juniperus virginiana*	Red cedar	12.5	29° 4' 57.909" N	80° 55' 59.811" W	Street Tree	Good
255	*Juniperus virginiana*	Red cedar	13.25	29° 5' 2.531" N	80° 55' 52.656" W	Street Tree	Good
256	*Juniperus virginiana*	Red cedar	12.5	29° 5' 3.111" N	80° 56' 2.526" W	Street Tree	Good
257	*Juniperus virginiana*	Red cedar	15	29° 5' 1.528" N	80° 56' 1.648" W	Street Tree	Good
258	*Juniperus virginiana*	Red cedar	12.5	29° 4' 53.413" N	80° 55' 52.729" W	Street Tree	Good
259	*Juniperus virginiana*	Red cedar	14	29° 5' 2.485" N	80° 56' 4.716" W	Street Tree	Good
260	*Persea borbonia*	Redbay	17	29° 5' 56.591" N	80° 56' 26.948" W	Street Tree	Good
261	*Persea borbonia*	Redbay	16.5	29° 5' 56.587" N	80° 56' 27.430" W	Street Tree	Good
262	*Persea borbonia*	Redbay	12.25	29° 5' 56.535" N	80° 56' 27.517" W	Street Tree	Good
263	*Persea borbonia*	Redbay	15.25	29° 5' 46.184" N	80° 56' 20.465" W	Street Tree	Good
264	*Persea borbonia*	Redbay	13.5	29° 5' 1.607" N	80° 56' 1.814" W	Street Tree	Good
265	*Persea borbonia*	Redbay	13	29° 5' 1.692" N	80° 56' 1.928" W	Street Tree	Good
266	*Persea borbonia*	Redbay	14	29° 4' 58.413" N	80° 55' 56.722" W	Street Tree	Good
267	*Quercus geminata*	Sand live oak	17	29° 4' 58.442" N	80° 56' 0.087" W	Street Tree	Good
268	*Quercus geminata*	Sand live oak	15	29° 5' 2.687" N	80° 56' 2.121" W	Street Tree	Good
269	*Quercus virginiana*	Live oak	12.25	29° 5' 42.755" N	80° 56' 18.748" W	Street Tree	Good
270	*Quercus virginiana*	Live oak	13	29° 5' 32.419" N	80° 56' 12.676" W	Street Tree	Good
271	*Quercus virginiana*	Live oak	13.25	29° 5' 24.623" N	80° 56' 8.820" W	Street Tree	Good
272	*Quercus virginiana*	Live oak	12.25	29° 5' 24.542" N	80° 56' 8.806" W	Street Tree	Good
273	*Quercus virginiana*	Live oak	13	29° 4' 54.178" N	80° 55' 47.547" W	Street Tree	Good
274	*Quercus virginiana*	Live oak	17	29° 4' 49.511" N	80° 55' 50.228" W	Street Tree	Good
275	*Quercus virginiana*	Live oak	14.25	29° 4' 50.000" N	80° 55' 51.019" W	Street Tree	Good
276	*Quercus virginiana*	Live oak	13.25	29° 4' 50.370" N	80° 55' 51.666" W	Street Tree	Good
277	*Quercus virginiana*	Live oak	16.25	29° 4' 51.969" N	80° 55' 53.413" W	Street Tree	Good
278	*Quercus virginiana*	Live oak	12.25	29° 4' 51.862" N	80° 55' 53.434" W	Street Tree	Good
279	*Juniperus virginiana*	Red cedar	9.5	29° 4' 53.295" N	80° 55' 52.748" W	Street Tree	Good
280	*Quercus virginiana*	Live oak	15.75	29° 4' 51.931" N	80° 55' 53.606" W	Street Tree	Good

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Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
281	*Juniperus virginiana*	Red cedar	10.5	29° 4' 53.950" N	80° 55' 47.469" W	Street Tree	Good
282	*Quercus virginiana*	Live oak	13.25	29° 4' 57.712" N	80° 56' 0.175" W	Street Tree	Good
283	*Morus rubra*	Red mulberry	10.25	29° 4' 53.142" N	80° 55' 55.519" W	Street Tree	Good
284	*Quercus virginiana*	Live oak	12.75	29° 4' 52.304" N	80° 55' 53.311" W	Street Tree	Good
285	*Myrichanthes fragrans*	Simpson's Stopper	8	29° 5' 55.962" N	80° 56' 26.680" W	Street Tree	Good
286	*Quercus virginiana*	Live oak	12.25	29° 4' 53.613" N	80° 55' 52.074" W	Street Tree	Good
287	*Myrichanthes fragrans*	Simpson's Stopper	8.75	29° 5' 55.571" N	80° 56' 26.464" W	Street Tree	Good
288	*Quercus virginiana*	Live oak	14.5	29° 4' 53.134" N	80° 55' 51.902" W	Street Tree	Good
289	*Quercus virginiana*	Live oak	14.25	29° 4' 55.633" N	80° 55' 58.936" W	Street Tree	Good
290	*Quercus virginiana*	Live oak	12.5	29° 4' 59.844" N	80° 56' 0.873" W	Street Tree	Good
291	*Quercus virginiana*	Live oak	16	29° 4' 58.004" N	80° 55' 58.112" W	Street Tree	Good
292	*Quercus virginiana*	Live oak	13.5	29° 4' 52.147" N	80° 55' 53.585" W	Street Tree	Good
293	*Quercus virginiana*	Live oak	13	29° 5' 3.431" N	80° 56' 2.699" W	Street Tree	Good
294	*Quercus virginiana*	Live oak	13.25	29° 5' 2.914" N	80° 56' 3.147" W	Street Tree	Good
295	*Quercus virginiana*	Live oak	17	29° 4' 57.292" N	80° 56' 1.785" W	Street Tree	Good
296	*Quercus virginiana*	Live oak	16	29° 5' 0.632" N	80° 56' 1.367" W	Street Tree	Good
297	*Quercus virginiana*	Live oak	16.75	29° 4' 58.096" N	80° 55' 57.913" W	Street Tree	Good
298	*Quercus virginiana*	Live oak	16.75	29° 4' 58.317" N	80° 55' 57.268" W	Street Tree	Good
299	*Quercus virginiana*	Live oak	13.25	29° 5' 5.621" N	80° 55' 46.522" W	Street Tree	Good
300	*Juniperus virginiana*	Red cedar	17.5	29° 4' 56.972" N	80° 55' 59.510" W	Street Tree	Good
301	*Juniperus virginiana*	Red cedar	20.5	29° 4' 57.423" N	80° 55' 59.546" W	Street Tree	Good
302	*Quercus geminata*	Sand live oak	17.5	29° 4' 53.440" N	80° 55' 49.223" W	Street Tree	Good
303	*Quercus virginiana*	Live oak	18.5	29° 5' 45.026" N	80° 56' 19.946" W	Street Tree	Good
304	*Quercus virginiana*	Live oak	18.5	29° 5' 42.283" N	80° 56' 18.494" W	Street Tree	Good
305	*Quercus virginiana*	Live oak	19.5	29° 4' 58.454" N	80° 56' 0.325" W	Street Tree	Good
306	*Quercus virginiana*	Live oak	18.25	29° 4' 55.463" N	80° 55' 48.285" W	Street Tree	Good
307	*Quercus virginiana*	Live oak	21	29° 4' 54.126" N	80° 55' 56.779" W	Street Tree	Good
308	*Quercus virginiana*	Live oak	20.5	29° 4' 54.323" N	80° 55' 57.392" W	Street Tree	Good
309	*Quercus virginiana*	Live oak	19.75	29° 4' 55.103" N	80° 55' 58.557" W	Street Tree	Good
310	*Quercus virginiana*	Live oak	17.5	29° 4' 56.536" N	80° 55' 59.331" W	Street Tree	Good
311	*Quercus virginiana*	Live oak	17.25	29° 4' 56.722" N	80° 55' 59.517" W	Street Tree	Good
312	*Quercus virginiana*	Live oak	20	29° 4' 57.303" N	80° 55' 59.760" W	Street Tree	Good
313	*Quercus virginiana*	Live oak	20.75	29° 4' 57.525" N	80° 55' 59.610" W	Street Tree	Good
314	*Quercus virginiana*	Live oak	19.5	29° 5' 28.967" N	80° 56' 10.629" W	Street Tree	Good
315	*Quercus virginiana*	Live oak	21.25	29° 5' 0.084" N	80° 56' 0.960" W	Street Tree	Good
316	*Quercus virginiana*	Live oak	21.5	29° 5' 3.054" N	80° 56' 3.318" W	Street Tree	Good
317	*Quercus virginiana*	Live oak	21	29° 5' 2.847" N	80° 56' 4.193" W	Street Tree	Good
318	*Quercus virginiana*	Live oak	18.75	29° 4' 57.356" N	80° 56' 1.729" W	Street Tree	Good
319	*Quercus virginiana*	Live oak	17.5	29° 4' 57.356" N	80° 56' 1.822" W	Street Tree	Good
320	*Juniperus virginiana*	Red cedar	22.75	29° 5' 2.333" N	80° 55' 52.660" W	Street Tree	Good

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
321	*Juniperus virginiana*	Red cedar	22.75	29° 4' 55.466" N	80° 55' 58.637" W	Street Tree	Good
322	*Quercus virginiana*	Live oak	23.75	29° 5' 24.327" N	80° 56' 8.704" W	Street Tree	Good
323	*Quercus virginiana*	Live oak	24.25	29° 4' 49.635" N	80° 55' 50.563" W	Street Tree	Good
324	*Quercus virginiana*	Live oak	23.25	29° 4' 50.148" N	80° 55' 50.943" W	Street Tree	Good
325	*Quercus virginiana*	Live oak	26.75	29° 4' 53.926" N	80° 55' 56.599" W	Street Tree	Good
326	*Quercus virginiana*	Live oak	26	29° 4' 54.250" N	80° 55' 56.980" W	Street Tree	Good
327	*Quercus virginiana*	Live oak	23.75	29° 4' 56.305" N	80° 55' 59.262" W	Street Tree	Good
328	*Quercus virginiana*	Live oak	25	29° 4' 58.770" N	80° 56' 0.465" W	Street Tree	Good
329	*Quercus virginiana*	Live oak	22.25	29° 4' 59.434" N	80° 56' 0.798" W	Street Tree	Good
330	*Quercus virginiana*	Live oak	22.5	29° 5' 0.242" N	80° 56' 1.025" W	Street Tree	Good
331	*Quercus virginiana*	Live oak	23.5	29° 5' 2.868" N	80° 56' 2.372" W	Street Tree	Good
332	*Quercus virginiana*	Live oak	22.5	29° 5' 2.900" N	80° 56' 3.030" W	Street Tree	Good
333	*Quercus virginiana*	Live oak	22.5	29° 4' 57.084" N	80° 56' 2.513" W	Street Tree	Good
334	*Quercus virginiana*	Live oak	23.75	29° 4' 57.218" N	80° 56' 2.317" W	Street Tree	Good
335	*Quercus virginiana*	Live oak	28.5	29° 4' 54.237" N	80° 55' 56.923" W	Street Tree	Good
336	*Quercus virginiana*	Live oak	28.5	29° 4' 49.898" N	80° 55' 50.943" W	Street Tree	Good
337	*Ilex vomitoria*	Yaupon holly	3.25	29° 5' 56.115" N	80° 56' 26.570" W	Street Tree	Good
338	*Ilex vomitoria*	Yaupon holly	2.75	29° 4' 55.200" N	80° 55' 40.640" W	Street Tree	Good
339	*Juniperus virginiana*	Red cedar	7	29° 4' 53.478" N	80° 55' 52.165" W	Street Tree	Good
340	*Juniperus virginiana*	Red cedar	7	29° 4' 55.727" N	80° 55' 48.469" W	Street Tree	Good
341	*Juniperus virginiana*	Red cedar	6	29° 4' 53.238" N	80° 55' 50.971" W	Street Tree	Good
342	*Juniperus virginiana*	Red cedar	5.25	29° 5' 3.126" N	80° 56' 2.605" W	Street Tree	Good
343	*Myrichanthes fragrans*	Simpson's	5.75	29° 5' 55.957" N	80° 56' 26.667" W	Street Tree	Good
344	*Myrichanthes fragrans*	Simpson's	6	29° 5' 55.889" N	80° 56' 26.665" W	Street Tree	Good
345	*Myrichanthes fragrans*	Simpson's	6.25	29° 5' 55.578" N	80° 56' 26.502" W	Street Tree	Good
346	*Persea borbonia*	Redbay	6.5	29° 5' 56.616" N	80° 56' 27.500" W	Street Tree	Good
347	*Persea borbonia*	Redbay	7.25	29° 5' 54.990" N	80° 56' 27.035" W	Street Tree	Good
348	*Persea borbonia*	Redbay	6.75	29° 5' 33.197" N	80° 56' 13.119" W	Street Tree	Good
349	*Persea borbonia*	Redbay	7.5	29° 4' 52.650" N	80° 55' 46.806" W	Street Tree	Good
350	*Persea borbonia*	Redbay	7	29° 4' 52.534" N	80° 55' 46.646" W	Street Tree	Good
351	*Persea borbonia*	Redbay	6	29° 4' 52.479" N	80° 55' 46.666" W	Street Tree	Good
352	*Persea borbonia*	Redbay	7.5	29° 5' 1.740" N	80° 56' 1.892" W	Street Tree	Good
353	*Quercus geminata*	Sand live oak	6.25	29° 4' 52.393" N	80° 55' 53.259" W	Street Tree	Good
354	*Quercus laurifolia*	Laurel oak	7.25	29° 4' 52.077" N	80° 55' 53.238" W	Street Tree	Good
355	*Quercus virginiana*	Live oak	6	29° 5' 56.234" N	80° 56' 26.979" W	Street Tree	Good
356	*Quercus virginiana*	Live oak	7.75	29° 5' 55.899" N	80° 56' 26.497" W	Street Tree	Good
357	*Quercus virginiana*	Live oak	6	29° 5' 33.882" N	80° 56' 13.584" W	Street Tree	Good
358	*Quercus virginiana*	Live oak	6	29° 4' 52.491" N	80° 55' 53.855" W	Street Tree	Good
359	*Quercus virginiana*	Live oak	7	29° 4' 52.492" N	80° 55' 53.727" W	Street Tree	Good
360	*Quercus virginiana*	Live oak	6.75	29° 5' 1.131" N	80° 56' 1.624" W	Street Tree	Good

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
361	*Quercus virginiana*	Live oak	5.5	29° 4' 54.345" N	80° 55' 45.566" W	Street Tree	Good
362	*Quercus virginiana*	Live oak	3.5	29° 4' 54.829" N	80° 55' 44.016" W	Street Tree	Good
363	*Quercus virginiana*	Live oak	3.5	29° 4' 55.085" N	80° 55' 42.429" W	Street Tree	Good
364	*Quercus virginiana*	Live oak	1.5	29° 4' 55.291" N	80° 55' 41.710" W	Street Tree	Good
365	*Quercus virginiana*	Live oak	7	29° 4' 55.521" N	80° 55' 40.684" W	Street Tree	Good
366	*Quercus virginiana*	Live oak	3.5	29° 4' 56.021" N	80° 55' 38.812" W	Street Tree	Good
367	*Quercus virginiana*	Live oak	1.5	29° 4' 56.169" N	80° 55' 38.111" W	Street Tree	Good
368	*Quercus virginiana*	Live oak	1.5	29° 4' 56.654" N	80° 55' 36.444" W	Street Tree	Good
369	*Quercus virginiana*	Live oak	1.5	29° 4' 56.173" N	80° 55' 36.924" W	Street Tree	Good
370	*Quercus virginiana*	Live oak	4.25	29° 4' 55.479" N	80° 55' 39.749" W	Street Tree	Good
371	*Quercus virginiana*	Live oak	7.75	29° 5' 5.671" N	80° 55' 46.495" W	Street Tree	Good
372	*Quercus virginiana*	Live oak	5.75	29° 5' 5.679" N	80° 55' 46.359" W	Street Tree	Good
373	*Juniperus virginiana*	Red cedar	9	29° 4' 55.809" N	80° 55' 48.506" W	Street Tree	Good
374	*Juniperus virginiana*	Red cedar	10.5	29° 5' 4.000" N	80° 56' 2.753" W	Street Tree	Good
375	*Juniperus virginiana*	Red cedar	9	29° 4' 50.148" N	80° 55' 47.741" W	Street Tree	Good
376	*Juniperus virginiana*	Red cedar	8.25	29° 4' 49.967" N	80° 55' 48.012" W	Street Tree	Good
377	*Juniperus virginiana*	Red cedar	9.25	29° 4' 49.943" N	80° 55' 48.364" W	Street Tree	Good
378	*Juniperus virginiana*	Red cedar	10	29° 4' 50.037" N	80° 55' 48.563" W	Street Tree	Good
379	*Quercus virginiana*	Live oak	31.25	29° 4' 55.816" N	80° 56' 2.675" W	Old Post Office	Good
380	*Quercus virginiana*	Live oak	32.5	29° 4' 55.804" N	80° 56' 2.551" W	Old Post Office	Good
381	*Quercus virginiana*	Live oak	35.5	29° 4' 56.198" N	80° 56' 2.564" W	Old Post Office	Good
382	*Juniperus virginiana*	Red cedar	16.5	29° 4' 56.669" N	80° 56' 2.580" W	Old Post Office	Good
383	*Quercus virginiana*	Live oak	17.75	29° 4' 56.687" N	80° 56' 2.536" W	Old Post Office	Good
384	*Quercus virginiana*	Live oak	16.25	29° 4' 56.761" N	80° 56' 2.473" W	Old Post Office	Good
385	*Juniperus virginiana*	Red cedar	17.25	29° 4' 49.591" N	80° 55' 44.512" W	Lighthouse Point Park	Good
386	*Quercus virginiana*	Live oak	11.25	29° 4' 49.418" N	80° 55' 44.167" W	Lighthouse Point Park	Good
387	*Quercus virginiana*	Live oak	12.25	29° 4' 49.423" N	80° 55' 44.055" W	Lighthouse Point Park	Good
388	*Quercus virginiana*	Live oak	11.5	29° 4' 49.480" N	80° 55' 44.031" W	Lighthouse Point Park	Good
389	*Quercus virginiana*	Live oak	14.75	29° 4' 49.326" N	80° 55' 44.088" W	Lighthouse Point Park	Good
390	*Quercus virginiana*	Live oak	12.5	29° 4' 49.334" N	80° 55' 43.966" W	Lighthouse Point Park	Good
391	*Quercus virginiana*	Live oak	10	29° 4' 49.195" N	80° 55' 43.970" W	Lighthouse Point Park	Good
392	*Quercus virginiana*	Live oak	12	29° 4' 49.163" N	80° 55' 44.069" W	Lighthouse Point Park	Good
393	*Quercus virginiana*	Live oak	15	29° 4' 49.312" N	80° 55' 44.229" W	Lighthouse Point Park	Good
394	*Quercus virginiana*	Live oak	15.25	29° 4' 49.162" N	80° 55' 44.227" W	Lighthouse Point Park	Good
395	*Quercus virginiana*	Live oak	11.5	29° 4' 49.108" N	80° 55' 43.936" W	Lighthouse Point Park	Good
396	*Quercus virginiana*	Live oak	13.5	29° 4' 49.108" N	80° 55' 43.947" W	Lighthouse Point Park	Good
397	*Quercus virginiana*	Live oak	13.5	29° 4' 49.065" N	80° 55' 44.127" W	Lighthouse Point Park	Good
398	*Quercus virginiana*	Live oak	13.25	29° 4' 49.126" N	80° 55' 44.218" W	Lighthouse Point Park	Good
399	*Quercus virginiana*	Live oak	17.25	29° 4' 49.113" N	80° 55' 44.378" W	Lighthouse Point Park	Good
400	*Quercus virginiana*	Live oak	11	29° 4' 49.041" N	80° 55' 44.373" W	Lighthouse Point Park	Good

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
401	*Quercus virginiana*	Live oak	17.25	29° 4' 49.015" N	80° 55' 44.620" W	Lighthouse Point Park	Good
402	*Quercus virginiana*	Live oak	10.75	29° 4' 48.752" N	80° 55' 44.783" W	Lighthouse Point Park	Good
403	*Quercus virginiana*	Live oak	13.25	29° 4' 48.930" N	80° 55' 44.263" W	Lighthouse Point Park	Good
404	*Quercus virginiana*	Live oak	14.75	29° 4' 48.936" N	80° 55' 44.065" W	Lighthouse Point Park	Good
405	*Quercus virginiana*	Live oak	13.75	29° 4' 48.969" N	80° 55' 43.801" W	Lighthouse Point Park	Good
406	*Quercus virginiana*	Live oak	13.25	29° 4' 48.765" N	80° 55' 43.932" W	Lighthouse Point Park	Good
407	*Quercus virginiana*	Live oak	25.75	29° 4' 48.617" N	80° 55' 43.417" W	Lighthouse Point Park	Good
408	*Quercus virginiana*	Live oak	17	29° 4' 48.660" N	80° 55' 43.754" W	Lighthouse Point Park	Good
409	*Quercus virginiana*	Live oak	11.5	29° 4' 48.441" N	80° 55' 43.890" W	Lighthouse Point Park	Good
410	*Juniperus virginiana*	Red cedar	17.5	29° 4' 48.302" N	80° 55' 44.075" W	Lighthouse Point Park	Good
411	*Juniperus virginiana*	Red cedar	17.5	29° 4' 48.499" N	80° 55' 44.432" W	Lighthouse Point Park	Good
412	*Juniperus virginiana*	Red cedar	18.5	29° 4' 48.545" N	80° 55' 44.583" W	Lighthouse Point Park	Good
413	*Quercus virginiana*	Live oak	11	29° 4' 48.453" N	80° 55' 44.740" W	Lighthouse Point Park	Good
414	*Quercus virginiana*	Live oak	10	29° 4' 48.356" N	80° 55' 44.544" W	Lighthouse Point Park	Good
415	*Quercus virginiana*	Live oak	9.5	29° 4' 48.342" N	80° 55' 44.500" W	Lighthouse Point Park	Good
416	*Quercus virginiana*	Live oak	8.5	29° 4' 48.415" N	80° 55' 44.270" W	Lighthouse Point Park	Good
417	*Quercus virginiana*	Live oak	8.5	29° 4' 48.391" N	80° 55' 44.242" W	Lighthouse Point Park	Good
418	*Quercus virginiana*	Live oak	8.75	29° 4' 48.316" N	80° 55' 44.247" W	Lighthouse Point Park	Good
419	*Quercus virginiana*	Live oak	8.25	29° 4' 48.205" N	80° 55' 44.228" W	Lighthouse Point Park	Good
420	*Quercus virginiana*	Live oak	9.25	29° 4' 48.208" N	80° 55' 44.208" W	Lighthouse Point Park	Good
421	*Quercus virginiana*	Live oak	11.5	29° 4' 48.371" N	80° 55' 44.084" W	Lighthouse Point Park	Good
422	*Quercus virginiana*	Live oak	15.5	29° 4' 48.096" N	80° 55' 43.886" W	Lighthouse Point Park	Good
423	*Quercus virginiana*	Live oak	12.75	29° 4' 48.107" N	80° 55' 44.318" W	Lighthouse Point Park	Good
424	*Quercus virginiana*	Live oak	12.75	29° 4' 48.179" N	80° 55' 44.393" W	Lighthouse Point Park	Good
425	*Quercus virginiana*	Live oak	10.5	29° 4' 48.219" N	80° 55' 44.610" W	Lighthouse Point Park	Good
426	*Quercus virginiana*	Live oak	10.75	29° 4' 48.071" N	80° 55' 44.623" W	Lighthouse Point Park	Good
427	*Quercus virginiana*	Live oak	13	29° 4' 48.051" N	80° 55' 44.644" W	Lighthouse Point Park	Good
428	*Quercus virginiana*	Live oak	13	29° 4' 48.015" N	80° 55' 44.561" W	Lighthouse Point Park	Good
429	*Quercus virginiana*	Live oak	12.5	29° 4' 47.947" N	80° 55' 44.680" W	Lighthouse Point Park	Good
430	*Quercus virginiana*	Live oak	9	29° 4' 47.802" N	80° 55' 44.516" W	Lighthouse Point Park	Good
431	*Quercus virginiana*	Live oak	9.5	29° 4' 47.792" N	80° 55' 44.473" W	Lighthouse Point Park	Good
432	*Quercus virginiana*	Live oak	9	29° 4' 47.864" N	80° 55' 44.394" W	Lighthouse Point Park	Good
433	*Quercus virginiana*	Live oak	9.75	29° 4' 47.940" N	80° 55' 44.318" W	Lighthouse Point Park	Good
434	*Quercus virginiana*	Live oak	8.75	29° 4' 47.791" N	80° 55' 44.324" W	Lighthouse Point Park	Good
435	*Quercus virginiana*	Live oak	8.75	29° 4' 47.731" N	80° 55' 44.466" W	Lighthouse Point Park	Good
436	*Quercus virginiana*	Live oak	15	29° 4' 47.907" N	80° 55' 44.087" W	Lighthouse Point Park	Good
437	*Quercus virginiana*	Live oak	11.25	29° 4' 47.805" N	80° 55' 44.119" W	Lighthouse Point Park	Good
438	*Juniperus virginiana*	Red cedar	15	29° 4' 47.716" N	80° 55' 44.232" W	Lighthouse Point Park	Good
439	*Persea borbonia*	Redbay	8.75	29° 4' 47.796" N	80° 55' 44.077" W	Lighthouse Point Park	Good
440	*Juniperus virginiana*	Red cedar	11	29° 4' 47.749" N	80° 55' 44.168" W	Lighthouse Point Park	Good

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
441	*Quercus virginiana*	Live oak	8.75	29° 4' 47.702" N	80° 55' 44.167" W	Lighthouse Point Park	Good
442	*Quercus virginiana*	Live oak	10.5	29° 4' 47.607" N	80° 55' 44.254" W	Lighthouse Point Park	Good
443	*Myrcianthes fragrans*	Simpson's	7	29° 4' 47.759" N	80° 55' 44.051" W	Lighthouse Point Park	Good
444	*Quercus virginiana*	Live oak	11.25	29° 4' 47.655" N	80° 55' 44.031" W	Lighthouse Point Park	Good
445	*Quercus virginiana*	Live oak	10.5	29° 4' 47.573" N	80° 55' 43.960" W	Lighthouse Point Park	Good
446	*Quercus virginiana*	Live oak	12.5	29° 4' 47.551" N	80° 55' 43.845" W	Lighthouse Point Park	Good
447	*Juniperus virginiana*	Red cedar	12	29° 4' 47.703" N	80° 55' 43.606" W	Lighthouse Point Park	Good
448	*Juniperus virginiana*	Red cedar	17.5	29° 4' 48.091" N	80° 55' 43.741" W	Lighthouse Point Park	Good
449	*Quercus virginiana*	Live oak	14.5	29° 4' 48.295" N	80° 55' 43.665" W	Lighthouse Point Park	Good
450	*Quercus virginiana*	Live oak	13	29° 4' 48.354" N	80° 55' 43.542" W	Lighthouse Point Park	Good
451	*Quercus virginiana*	Live oak	14.75	29° 4' 48.341" N	80° 55' 43.426" W	Lighthouse Point Park	Good
452	*Quercus virginiana*	Live oak	10	29° 4' 48.211" N	80° 55' 43.218" W	Lighthouse Point Park	Good
453	*Quercus virginiana*	Live oak	11	29° 4' 48.237" N	80° 55' 43.425" W	Lighthouse Point Park	Good
454	*Quercus virginiana*	Live oak	10	29° 4' 48.157" N	80° 55' 43.359" W	Lighthouse Point Park	Good
455	*Quercus virginiana*	Live oak	11.75	29° 4' 48.032" N	80° 55' 43.565" W	Lighthouse Point Park	Good
456	*Quercus virginiana*	Live oak	11.75	29° 4' 47.992" N	80° 55' 43.467" W	Lighthouse Point Park	Good
457	*Quercus virginiana*	Live oak	7.75	29° 4' 48.135" N	80° 55' 43.198" W	Lighthouse Point Park	Good
458	*Quercus virginiana*	Live oak	7.75	29° 4' 48.070" N	80° 55' 43.199" W	Lighthouse Point Park	Good
459	*Quercus virginiana*	Live oak	8	29° 4' 48.047" N	80° 55' 43.213" W	Lighthouse Point Park	Good
460	*Quercus virginiana*	Live oak	11.75	29° 4' 47.968" N	80° 55' 43.152" W	Lighthouse Point Park	Good
461	*Persea borbonia*	Redbay	7.25	29° 4' 48.047" N	80° 55' 43.117" W	Lighthouse Point Park	Good
462	*Quercus virginiana*	Live oak	8	29° 4' 48.023" N	80° 55' 43.112" W	Lighthouse Point Park	Good
463	*Quercus virginiana*	Live oak	7	29° 4' 48.010" N	80° 55' 43.004" W	Lighthouse Point Park	Good
464	*Persea borbonia*	Redbay	10.5	29° 4' 47.980" N	80° 55' 42.982" W	Lighthouse Point Park	Good
465	*Quercus virginiana*	Live oak	9.25	29° 4' 47.888" N	80° 55' 42.964" W	Lighthouse Point Park	Good
466	*Quercus virginiana*	Live oak	9.5	29° 4' 47.819" N	80° 55' 42.987" W	Lighthouse Point Park	Good
467	*Quercus virginiana*	Live oak	20	29° 4' 47.891" N	80° 55' 42.933" W	Lighthouse Point Park	Good
468	*Quercus virginiana*	Live oak	15	29° 4' 47.785" N	80° 55' 43.359" W	Lighthouse Point Park	Good
469	*Quercus virginiana*	Live oak	11.75	29° 4' 47.597" N	80° 55' 43.431" W	Lighthouse Point Park	Good
470	*Quercus virginiana*	Live oak	6.75	29° 4' 47.648" N	80° 55' 43.362" W	Lighthouse Point Park	Good
471	*Quercus virginiana*	Live oak	6.75	29° 4' 47.671" N	80° 55' 43.305" W	Lighthouse Point Park	Good
472	*Quercus virginiana*	Live oak	9.5	29° 4' 47.537" N	80° 55' 43.316" W	Lighthouse Point Park	Good
473	*Quercus virginiana*	Live oak	10.75	29° 4' 47.543" N	80° 55' 43.301" W	Lighthouse Point Park	Good
474	*Quercus virginiana*	Live oak	9.5	29° 4' 47.563" N	80° 55' 43.265" W	Lighthouse Point Park	Good
475	*Quercus virginiana*	Live oak	14.5	29° 4' 47.475" N	80° 55' 43.360" W	Lighthouse Point Park	Good
476	*Quercus virginiana*	Live oak	10.25	29° 4' 47.524" N	80° 55' 43.268" W	Lighthouse Point Park	Good
477	*Quercus virginiana*	Live oak	14.25	29° 4' 47.458" N	80° 55' 43.192" W	Lighthouse Point Park	Good
478	*Quercus virginiana*	Live oak	10	29° 4' 47.554" N	80° 55' 43.166" W	Lighthouse Point Park	Good
479	*Quercus virginiana*	Live oak	14.25	29° 4' 47.338" N	80° 55' 42.591" W	Lighthouse Point Park	Good
480	*Quercus virginiana*	Live oak	7.5	29° 4' 47.514" N	80° 55' 42.656" W	Lighthouse Point Park	Good

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
481	*Juniperus virginiana*	Red cedar	29.5	29° 4' 47.674" N	80° 55' 42.500" W	Lighthouse Point Park	Good
482	*Persea borbonia*	Redbay	6.75	29° 4' 47.773" N	80° 55' 42.280" W	Lighthouse Point Park	Good
483	*Persea borbonia*	Redbay	10.5	29° 4' 47.758" N	80° 55' 42.264" W	Lighthouse Point Park	Good
484	*Juniperus virginiana*	Red cedar	14.25	29° 4' 47.534" N	80° 55' 42.122" W	Lighthouse Point Park	Good
485	*Persea borbonia*	Redbay	12.25	29° 4' 47.468" N	80° 55' 42.138" W	Lighthouse Point Park	Good
486	*Quercus virginiana*	Live oak	12.25	29° 4' 47.414" N	80° 55' 42.475" W	Lighthouse Point Park	Good
487	*Quercus virginiana*	Live oak	11.75	29° 4' 47.395" N	80° 55' 42.508" W	Lighthouse Point Park	Good
488	*Quercus virginiana*	Live oak	11.25	29° 4' 47.358" N	80° 55' 42.462" W	Lighthouse Point Park	Good
489	*Quercus virginiana*	Live oak	11.25	29° 4' 47.465" N	80° 55' 42.357" W	Lighthouse Point Park	Good
490	*Quercus virginiana*	Live oak	7.5	29° 4' 47.377" N	80° 55' 42.358" W	Lighthouse Point Park	Good
491	*Quercus virginiana*	Live oak	11	29° 4' 47.226" N	80° 55' 42.379" W	Lighthouse Point Park	Good
492	*Quercus virginiana*	Live oak	8.25	29° 4' 47.316" N	80° 55' 42.352" W	Lighthouse Point Park	Good
493	*Quercus virginiana*	Live oak	6.25	29° 4' 47.368" N	80° 55' 42.329" W	Lighthouse Point Park	Good
494	*Quercus virginiana*	Live oak	8.25	29° 4' 47.408" N	80° 55' 42.215" W	Lighthouse Point Park	Good
495	*Quercus virginiana*	Live oak	6.75	29° 4' 47.357" N	80° 55' 42.281" W	Lighthouse Point Park	Good
496	*Quercus virginiana*	Live oak	8	29° 4' 47.377" N	80° 55' 42.254" W	Lighthouse Point Park	Good
497	*Quercus virginiana*	Live oak	9.5	29° 4' 47.296" N	80° 55' 42.306" W	Lighthouse Point Park	Good
498	*Quercus virginiana*	Live oak	11.25	29° 4' 47.281" N	80° 55' 42.238" W	Lighthouse Point Park	Good
499	*Quercus virginiana*	Live oak	9.25	29° 4' 47.115" N	80° 55' 41.721" W	Lighthouse Point Park	Good
500	*Quercus virginiana*	Live oak	11.75	29° 4' 47.120" N	80° 55' 41.704" W	Lighthouse Point Park	Good
501	*Quercus virginiana*	Live oak	21.25	29° 4' 47.147" N	80° 55' 41.489" W	Lighthouse Point Park	Good
502	*Quercus virginiana*	Live oak	15.5	29° 4' 47.090" N	80° 55' 41.425" W	Lighthouse Point Park	Good
503	*Quercus virginiana*	Live oak	16	29° 4' 47.034" N	80° 55' 40.857" W	Lighthouse Point Park	Good
504	*Persea borbonia*	Redbay	9.5	29° 4' 46.962" N	80° 55' 40.766" W	Lighthouse Point Park	Good
505	*Persea borbonia*	Redbay	8.5	29° 4' 47.092" N	80° 55' 39.885" W	Lighthouse Point Park	Good
506	*Persea borbonia*	Redbay	8.75	29° 4' 47.064" N	80° 55' 39.917" W	Lighthouse Point Park	Good
507	*Persea borbonia*	Redbay	15.25	29° 4' 47.159" N	80° 55' 39.892" W	Lighthouse Point Park	Good
508	*Persea borbonia*	Redbay	14.25	29° 4' 47.574" N	80° 55' 40.004" W	Lighthouse Point Park	Good
509	*Persea borbonia*	Redbay	11.75	29° 4' 47.510" N	80° 55' 40.069" W	Lighthouse Point Park	Good
510	*Quercus virginiana*	Live oak	18.5	29° 4' 47.232" N	80° 55' 40.694" W	Lighthouse Point Park	Good
511	*Persea borbonia*	Redbay	12	29° 4' 47.374" N	80° 55' 41.044" W	Lighthouse Point Park	Good
512	*Quercus virginiana*	Live oak	8	29° 4' 47.254" N	80° 55' 41.164" W	Lighthouse Point Park	Good
513	*Quercus geminata*	Sand live oak	8.5	29° 4' 47.359" N	80° 55' 41.414" W	Lighthouse Point Park	Good
514	*Quercus geminata*	Sand live oak	12.25	29° 4' 47.422" N	80° 55' 41.462" W	Lighthouse Point Park	Good
515	*Persea borbonia*	Redbay	11.75	29° 4' 47.425" N	80° 55' 41.277" W	Lighthouse Point Park	Good
516	*Persea borbonia*	Redbay	7.25	29° 4' 47.572" N	80° 55' 41.452" W	Lighthouse Point Park	Good
517	*Quercus geminata*	Sand live oak	11.25	29° 4' 47.577" N	80° 55' 41.483" W	Lighthouse Point Park	Good
518	*Quercus geminata*	Sand live oak	9.75	29° 4' 47.591" N	80° 55' 41.581" W	Lighthouse Point Park	Good
519	*Quercus geminata*	Sand live oak	10.5	29° 4' 47.646" N	80° 55' 41.494" W	Lighthouse Point Park	Good
520	*Quercus geminata*	Sand live oak	13	29° 4' 47.612" N	80° 55' 41.296" W	Lighthouse Point Park	Good

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
521	*Persea borbonia*	Redbay	8.5	29° 4' 47.747" N	80° 55' 41.274" W	Lighthouse Point Park	Good
522	*Quercus virginiana*	Live oak	9	29° 4' 47.789" N	80° 55' 41.425" W	Lighthouse Point Park	Good
523	*Persea borbonia*	Redbay	7.75	29° 4' 47.860" N	80° 55' 41.460" W	Lighthouse Point Park	Good
524	*Quercus virginiana*	Live oak	4.25	29° 4' 47.850" N	80° 55' 41.382" W	Lighthouse Point Park	Good
525	*Quercus geminata*	Sand live oak	7.5	29° 4' 47.873" N	80° 55' 41.361" W	Lighthouse Point Park	Good
526	*Quercus geminata*	Sand live oak	11.75	29° 4' 47.911" N	80° 55' 41.244" W	Lighthouse Point Park	Good
527	*Quercus geminata*	Sand live oak	8	29° 4' 47.924" N	80° 55' 41.314" W	Lighthouse Point Park	Good
528	*Quercus geminata*	Sand live oak	9.5	29° 4' 48.005" N	80° 55' 41.347" W	Lighthouse Point Park	Good
529	*Quercus geminata*	Sand live oak	9.75	29° 4' 48.053" N	80° 55' 41.258" W	Lighthouse Point Park	Good
530	*Quercus geminata*	Sand live oak	10.75	29° 4' 48.181" N	80° 55' 41.281" W	Lighthouse Point Park	Good
531	*Persea borbonia*	Redbay	7.5	29° 4' 48.133" N	80° 55' 41.362" W	Lighthouse Point Park	Good
532	*Persea borbonia*	Redbay	9.5	29° 4' 48.031" N	80° 55' 41.586" W	Lighthouse Point Park	Good
533	*Persea borbonia*	Redbay	18	29° 4' 48.273" N	80° 55' 41.343" W	Lighthouse Point Park	Good
534	*Quercus geminata*	Sand live oak	10.75	29° 4' 48.301" N	80° 55' 41.280" W	Lighthouse Point Park	Good
535	*Persea borbonia*	Redbay	7.5	29° 4' 48.538" N	80° 55' 41.341" W	Lighthouse Point Park	Good
536	*Persea borbonia*	Redbay	11	29° 4' 48.650" N	80° 55' 41.330" W	Lighthouse Point Park	Good
537	*Persea borbonia*	Redbay	9	29° 4' 48.753" N	80° 55' 41.209" W	Lighthouse Point Park	Good
538	*Persea borbonia*	Redbay	12	29° 4' 48.744" N	80° 55' 41.248" W	Lighthouse Point Park	Good
539	*Persea borbonia*	Redbay	6.5	29° 4' 48.690" N	80° 55' 41.244" W	Lighthouse Point Park	Good
540	*Quercus virginiana*	Live oak	7.75	29° 4' 48.698" N	80° 55' 41.147" W	Lighthouse Point Park	Good
541	*Quercus virginiana*	Live oak	4.5	29° 4' 48.615" N	80° 55' 41.173" W	Lighthouse Point Park	Good
542	*Quercus virginiana*	Live oak	8.75	29° 4' 48.589" N	80° 55' 41.167" W	Lighthouse Point Park	Good
543	*Quercus virginiana*	Live oak	8	29° 4' 48.483" N	80° 55' 41.157" W	Lighthouse Point Park	Good
544	*Quercus geminata*	Sand live oak	5.75	29° 4' 48.417" N	80° 55' 41.162" W	Lighthouse Point Park	Good
545	*Quercus myrtifolia*	Myrtle oak	9.75	29° 4' 48.283" N	80° 55' 41.061" W	Lighthouse Point Park	Good
546	*Persea borbonia*	Redbay	8.75	29° 4' 48.255" N	80° 55' 40.912" W	Lighthouse Point Park	Good
547	*Quercus virginiana*	Live oak	4.75	29° 4' 48.268" N	80° 55' 40.899" W	Lighthouse Point Park	Good
548	*Quercus virginiana*	Live oak	5.75	29° 4' 48.307" N	80° 55' 40.880" W	Lighthouse Point Park	Good
549	*Quercus virginiana*	Live oak	8	29° 4' 48.356" N	80° 55' 40.919" W	Lighthouse Point Park	Good
550	*Quercus virginiana*	Live oak	11	29° 4' 48.394" N	80° 55' 40.960" W	Lighthouse Point Park	Good
551	*Persea borbonia*	Redbay	6.5	29° 4' 48.438" N	80° 55' 40.877" W	Lighthouse Point Park	Good
552	*Persea borbonia*	Redbay	5	29° 4' 48.499" N	80° 55' 40.841" W	Lighthouse Point Park	Good
553	*Quercus virginiana*	Live oak	5.25	29° 4' 48.537" N	80° 55' 40.743" W	Lighthouse Point Park	Good
554	*Quercus virginiana*	Live oak	8.75	29° 4' 48.560" N	80° 55' 40.758" W	Lighthouse Point Park	Good
555	*Quercus virginiana*	Live oak	7.25	29° 4' 48.542" N	80° 55' 40.835" W	Lighthouse Point Park	Good
556	*Quercus virginiana*	Live oak	6.5	29° 4' 48.599" N	80° 55' 40.912" W	Lighthouse Point Park	Dead
557	*Quercus virginiana*	Live oak	6.75	29° 4' 48.608" N	80° 55' 40.920" W	Lighthouse Point Park	Good
558	*Quercus virginiana*	Live oak	7.25	29° 4' 48.595" N	80° 55' 40.943" W	Lighthouse Point Park	Good
559	*Quercus virginiana*	Live oak	7.5	29° 4' 48.646" N	80° 55' 40.973" W	Lighthouse Point Park	Good
560	*Quercus virginiana*	Live oak	6.25	29° 4' 48.630" N	80° 55' 41.014" W	Lighthouse Point Park	Good

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
561	*Quercus virginiana*	Live oak	6.5	29° 4' 48.671" N	80° 55' 40.901" W	Lighthouse Point Park	Good
562	*Quercus virginiana*	Live oak	6.5	29° 4' 48.696" N	80° 55' 40.835" W	Lighthouse Point Park	Good
563	*Quercus virginiana*	Live oak	6	29° 4' 48.670" N	80° 55' 40.818" W	Lighthouse Point Park	Good
564	*Persea borbonia*	Redbay	2.1	29° 4' 48.641" N	80° 55' 40.954" W	Lighthouse Point Park	Good
565	*Persea borbonia*	Redbay	2.5	29° 4' 48.751" N	80° 55' 40.787" W	Lighthouse Point Park	Good
566	*Persea borbonia*	Redbay	5.25	29° 4' 48.775" N	80° 55' 40.919" W	Lighthouse Point Park	Good
567	*Persea borbonia*	Redbay	4.75	29° 4' 48.790" N	80° 55' 40.908" W	Lighthouse Point Park	Good
568	*Persea borbonia*	Redbay	7.75	29° 4' 48.397" N	80° 55' 40.678" W	Lighthouse Point Park	Good
569	*Quercus geminata*	Sand live oak	10.5	29° 4' 48.188" N	80° 55' 40.587" W	Lighthouse Point Park	Good
570	*Persea borbonia*	Redbay	10	29° 4' 48.125" N	80° 55' 40.533" W	Lighthouse Point Park	Good
571	*Quercus virginiana*	Live oak	17.75	29° 4' 48.384" N	80° 55' 40.506" W	Lighthouse Point Park	Good
572	*Persea borbonia*	Redbay	9.75	29° 4' 48.492" N	80° 55' 40.329" W	Lighthouse Point Park	Good
573	*Quercus virginiana*	Live oak	16	29° 4' 48.538" N	80° 55' 40.488" W	Lighthouse Point Park	Good
574	*Persea borbonia*	Redbay	10	29° 4' 48.566" N	80° 55' 40.467" W	Lighthouse Point Park	Good
575	*Persea borbonia*	Redbay	7	29° 4' 48.586" N	80° 55' 40.348" W	Lighthouse Point Park	Good
576	*Persea borbonia*	Redbay	9.5	29° 4' 48.566" N	80° 55' 40.314" W	Lighthouse Point Park	Good
577	*Quercus virginiana*	Live oak	11	29° 4' 48.778" N	80° 55' 40.376" W	Lighthouse Point Park	Good
578	*Persea borbonia*	Redbay	23	29° 4' 48.143" N	80° 55' 40.169" W	Lighthouse Point Park	Good
579	*Quercus virginiana*	Live oak	2.1	29° 4' 47.922" N	80° 55' 40.091" W	Lighthouse Point Park	Good
580	*Sabal palmetto*	Cabbage palm	14.5	29° 4' 48.247" N	80° 55' 41.073" W	Lighthouse Point Park	Good
581	*Quercus geminata*	Sand live oak	11	29° 4' 48.133" N	80° 55' 40.843" W	Lighthouse Point Park	Good
582	*Quercus geminata*	Sand live oak	2.25	29° 4' 48.135" N	80° 55' 40.921" W	Lighthouse Point Park	Good
583	*Quercus geminata*	Sand live oak	14	29° 4' 48.050" N	80° 55' 40.885" W	Lighthouse Point Park	Good
584	*Quercus geminata*	Sand live oak	9.5	29° 4' 48.077" N	80° 55' 40.793" W	Lighthouse Point Park	Good
585	*Quercus geminata*	Sand live oak	14.5	29° 4' 47.914" N	80° 55' 40.705" W	Lighthouse Point Park	Good
586	*Quercus geminata*	Sand live oak	14	29° 4' 47.853" N	80° 55' 40.724" W	Lighthouse Point Park	Good
587	*Quercus geminata*	Sand live oak	9.75	29° 4' 48.687" N	80° 55' 41.857" W	Lighthouse Point Park	Good
588	*Quercus geminata*	Sand live oak	10.25	29° 4' 48.579" N	80° 55' 41.843" W	Lighthouse Point Park	Good
589	*Persea borbonia*	Redbay	5.75	29° 4' 48.648" N	80° 55' 42.120" W	Lighthouse Point Park	Good
590	*Quercus geminata*	Sand live oak	9.5	29° 4' 48.674" N	80° 55' 42.121" W	Lighthouse Point Park	Good
591	*Quercus myrtifolia*	Myrtle oak	6	29° 4' 48.586" N	80° 55' 42.073" W	Lighthouse Point Park	Good
592	*Quercus geminata*	Sand live oak	9.25	29° 4' 48.313" N	80° 55' 41.951" W	Lighthouse Point Park	Good
593	*Quercus geminata*	Sand live oak	13.75	29° 4' 48.259" N	80° 55' 42.007" W	Lighthouse Point Park	Good
594	*Quercus geminata*	Sand live oak	10.5	29° 4' 48.187" N	80° 55' 42.043" W	Lighthouse Point Park	Good
595	*Quercus geminata*	Sand live oak	7.5	29° 4' 48.055" N	80° 55' 42.014" W	Lighthouse Point Park	Good
596	*Quercus geminata*	Sand live oak	10.25	29° 4' 47.784" N	80° 55' 42.027" W	Lighthouse Point Park	Good
597	*Quercus geminata*	Sand live oak	8	29° 4' 48.042" N	80° 55' 42.069" W	Lighthouse Point Park	Good
598	*Quercus geminata*	Sand live oak	10	29° 4' 48.018" N	80° 55' 42.115" W	Lighthouse Point Park	Good
599	*Quercus geminata*	Sand live oak	13.25	29° 4' 47.947" N	80° 55' 42.176" W	Lighthouse Point Park	Good
600	*Quercus geminata*	Sand live oak	6.25	29° 4' 48.361" N	80° 55' 42.126" W	Lighthouse Point Park	Good

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
601	*Quercus geminata*	Sand live oak	6.25	29° 4' 48.245" N	80° 55' 42.236" W	Lighthouse Point Park	Good
602	*Quercus myrtifolia*	Myrtle oak	7.5	29° 4' 48.337" N	80° 55' 42.216" W	Lighthouse Point Park	Good
603	*Quercus geminata*	Sand live oak	6	29° 4' 48.410" N	80° 55' 42.247" W	Lighthouse Point Park	Good
604	*Quercus geminata*	Sand live oak	8.5	29° 4' 48.443" N	80° 55' 42.331" W	Lighthouse Point Park	Good
605	*Quercus geminata*	Sand live oak	8.5	29° 4' 48.352" N	80° 55' 42.359" W	Lighthouse Point Park	Good
606	*Quercus geminata*	Sand live oak	8.25	29° 4' 48.197" N	80° 55' 42.423" W	Lighthouse Point Park	Good
607	*Persea borbonia*	Redbay	10	29° 4' 48.643" N	80° 55' 43.034" W	Lighthouse Point Park	Good
608	*Quercus virginiana*	Live oak	7.5	29° 4' 49.039" N	80° 55' 42.566" W	Lighthouse Point Park	Good
609	*Persea borbonia*	Redbay	6	29° 4' 49.323" N	80° 55' 44.023" W	Lighthouse Point Park	Good
610	*Persea borbonia*	Redbay	7	29° 4' 49.006" N	80° 55' 44.402" W	Lighthouse Point Park	Good
611	*Quercus virginiana*	Live oak	12.75	29° 4' 46.622" N	80° 55' 42.478" W	Boat Ramp	Good
612	*Quercus virginiana*	Live oak	11	29° 4' 46.609" N	80° 55' 42.518" W	Boat Ramp	Good
613	*Quercus virginiana*	Live oak	10.25	29° 4' 46.595" N	80° 55' 42.513" W	Boat Ramp	Good
614	*Quercus virginiana*	Live oak	12	29° 4' 46.549" N	80° 55' 42.556" W	Boat Ramp	Good
615	*Quercus virginiana*	Live oak	15.5	29° 4' 46.488" N	80° 55' 42.586" W	Boat Ramp	Good
616	*Quercus virginiana*	Live oak	8.75	29° 4' 46.543" N	80° 55' 42.450" W	Boat Ramp	Good
617	*Quercus virginiana*	Live oak	12	29° 4' 46.535" N	80° 55' 42.418" W	Boat Ramp	Good
618	*Quercus virginiana*	Live oak	10.75	29° 4' 46.471" N	80° 55' 42.437" W	Boat Ramp	Good
619	*Quercus virginiana*	Live oak	19	29° 4' 46.446" N	80° 55' 42.438" W	Boat Ramp	Good
620	*Quercus virginiana*	Live oak	18.75	29° 4' 46.354" N	80° 55' 42.352" W	Boat Ramp	Good
621	*Quercus virginiana*	Live oak	10.5	29° 4' 46.209" N	80° 55' 42.507" W	Boat Ramp	Good
622	*Quercus virginiana*	Live oak	10.5	29° 4' 46.194" N	80° 55' 42.450" W	Boat Ramp	Good
623	*Quercus virginiana*	Live oak	19	29° 4' 46.076" N	80° 55' 42.846" W	Boat Ramp	Good
624	*Quercus virginiana*	Live oak	20	29° 4' 46.524" N	80° 55' 42.914" W	Boat Ramp	Good
625	*Quercus virginiana*	Live oak	16	29° 6' 51.066" N	80° 56' 58.697" W	Ponce Preserve	Good
626	*Quercus virginiana*	Live oak	14.25	29° 6' 50.997" N	80° 56' 58.628" W	Ponce Preserve	Good
627	*Quercus virginiana*	Live oak	12	29° 6' 51.087" N	80° 56' 57.736" W	Ponce Preserve	Good
628	*Quercus virginiana*	Live oak	18	29° 6' 51.421" N	80° 56' 59.116" W	Ponce Preserve	Fair
629	*Quercus virginiana*	Live oak	12	29° 6' 52.139" N	80° 56' 58.937" W	Ponce Preserve	Fair
630	*Quercus virginiana*	Live oak	14	29° 6' 52.232" N	80° 56' 58.832" W	Ponce Preserve	Good
631	*Quercus virginiana*	Live oak	10	29° 6' 51.898" N	80° 56' 59.143" W	Ponce Preserve	Good
632	*Quercus virginiana*	Live oak	22	29° 6' 52.554" N	80° 56' 58.721" W	Ponce Preserve	Good
633	*Quercus virginiana*	Live oak	18	29° 6' 53.442" N	80° 56' 58.947" W	Ponce Preserve	Good
634	*Quercus virginiana*	Live oak	14	29° 6' 53.568" N	80° 56' 59.237" W	Ponce Preserve	Good
635	*Quercus virginiana*	Live oak	14	29° 6' 53.573" N	80° 56' 59.305" W	Ponce Preserve	Good
636	*Quercus virginiana*	Live oak	12	29° 6' 53.657" N	80° 56' 59.307" W	Ponce Preserve	Good
637	*Quercus virginiana*	Live oak	12	29° 6' 53.648" N	80° 56' 59.180" W	Ponce Preserve	Good
638	*Quercus virginiana*	Live oak	20	29° 6' 53.671" N	80° 56' 59.023" W	Ponce Preserve	Good
639	*Quercus virginiana*	Live oak	20	29° 6' 53.653" N	80° 56' 58.946" W	Ponce Preserve	Good
640	*Quercus virginiana*	Live oak	10.5	29° 6' 53.796" N	80° 56' 59.389" W	Ponce Preserve	Good

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
641	*Persea borbonia*	Redbay	16.25	29° 6' 53.594" N	80° 57' 0.032" W	Ponce Preserve	Good
642	*Persea borbonia*	Redbay	14	29° 6' 53.716" N	80° 57' 0.201" W	Ponce Preserve	Good
643	*Juniperus virginiana*	Red cedar	18	29° 6' 53.706" N	80° 57' 0.341" W	Ponce Preserve	Good
644	*Quercus laurifolia*	Live oak	10	29° 6' 53.943" N	80° 57' 0.690" W	Ponce Preserve	Good
645	*Quercus virginiana*	Live oak		2 29° 6' 52.61" N	80° 56' 59.95" W	Ponce Preserve	Good
646	*Quercus laurifolia*	Laurel oak	12	29° 6' 54.076" N	80° 57' 0.704" W	Ponce Preserve	Good
647	*Quercus virginiana*	Live oak	16	29° 6' 53.994" N	80° 57' 0.558" W	Ponce Preserve	Good
648	*Quercus laurifolia*	Laurel oak	12	29° 6' 54.067" N	80° 57' 0.721" W	Ponce Preserve	Good
649	*Quercus laurifolia*	Laurel oak	12	29° 6' 54.069" N	80° 57' 0.735" W	Ponce Preserve	Good
650	*Quercus laurifolia*	Laurel oak	14	29° 6' 54.299" N	80° 57' 0.714" W	Ponce Preserve	Good
651	*Quercus laurifolia*	Laurel oak	16	29° 6' 54.433" N	80° 57' 0.909" W	Ponce Preserve	Good
652	*Quercus laurifolia*	Laurel oak	24	29° 6' 54.513" N	80° 57' 0.876" W	Ponce Preserve	Good
653	*Quercus laurifolia*	Laurel oak	12	29° 6' 55.121" N	80° 57' 0.988" W	Ponce Preserve	Good
654	*Quercus laurifolia*	Laurel oak	36	29° 6' 55.153" N	80° 57' 1.161" W	Ponce Preserve	Good
655	*Quercus laurifolia*	Laurel oak	12	29° 6' 55.761" N	80° 57' 1.322" W	Ponce Preserve	Good
656	*Persea borbonia*	Live oak	13	29° 6' 55.962" N	80° 57' 1.368" W	Ponce Preserve	Good
657	*Quercus laurifolia*	Laurel oak	18	29° 6' 56.230" N	80° 57' 1.590" W	Ponce Preserve	Good
658	*Persea borbonia*	Live oak	10	29° 6' 56.392" N	80° 57' 1.490" W	Ponce Preserve	Good
659	*Quercus laurifolia*	Laurel oak	16	29° 6' 55.631" N	80° 57' 1.535" W	Ponce Preserve	Good
660	*Persea borbonia*	Redbay	14	29° 6' 54.938" N	80° 56' 59.600" W	Ponce Preserve	Good
661	*Quercus virginiana*	Live oak	45	29° 6' 55.333" N	80° 56' 59.797" W	Ponce Preserve	Good
662	*Quercus virginiana*	Live oak	11	29° 6' 58.205" N	80° 57' 1.985" W	Ponce Preserve	Good
663	*Quercus virginiana*	Live oak	14	29° 6' 58.107" N	80° 57' 1.116" W	Ponce Preserve	Good
664	*Persea borbonia*	Redbay	12	29° 6' 58.191" N	80° 57' 1.529" W	Ponce Preserve	Poor
665	*Quercus virginiana*	Live oak	30	29° 6' 57.419" N	80° 57' 1.245" W	Ponce Preserve	Good
666	*Quercus virginiana*	Live oak	21	29° 6' 55.564" N	80° 56' 58.284" W	Ponce Preserve	Good
667	*Persea borbonia*	Redbay	11	29° 6' 55.520" N	80° 56' 59.049" W	Ponce Preserve	Good
668	*Quercus virginiana*	Live oak	10	29° 6' 54.973" N	80° 56' 58.750" W	Ponce Preserve	Good
669	*Quercus virginiana*	Live oak	12	29° 6' 55.786" N	80° 56' 58.509" W	Ponce Preserve	Good
670	*Quercus virginiana*	Live oak		2 29° 6' 52.63" N	80° 56' 00.01" W	Ponce Preserve	Good
671	*Quercus virginiana*	Live oak		2 29° 6' 52.65" N	80° 56' 59.96" W	Ponce Preserve	Good
672	*Quercus laurifolia*	Laurel oak	18.5	29° 6' 53.960" N	80° 56' 59.569" W	Ponce Preserve	Good
673	*Quercus virginiana*	Live oak	14	29° 6' 50.877" N	80° 56' 58.946" W	Ponce Preserve	Good
674	*Quercus virginiana*	Live oak	12	29° 6' 50.872" N	80° 56' 58.960" W	Ponce Preserve	Good
675	*Quercus virginiana*	Live oak	10	29° 6' 50.643" N	80° 56' 58.744" W	Ponce Preserve	Good
676	*Quercus virginiana*	Live oak	11	29° 6' 50.659" N	80° 56' 58.880" W	Ponce Preserve	Good
677	*Quercus virginiana*	Live oak	12	29° 6' 50.573" N	80° 56' 58.755" W	Ponce Preserve	Good
678	*Quercus virginiana*	Live oak	10	29° 6' 50.500" N	80° 56' 58.551" W	Ponce Preserve	Good
679	*Quercus virginiana*	Live oak	11	29° 6' 56.481" N	80° 56' 59.239" W	Ponce Preserve	Good
680	*Quercus virginiana*	Live oak	19	29° 6' 55.788" N	80° 56' 58.341" W	Ponce Preserve	Good

MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
681	*Quercus virginiana*	Live oak	18	29° 6' 54.845" N	80° 57' 0.199" W	Ponce Preserve	Good
682	*Quercus virginiana*	Live oak	20	29° 6' 54.950" N	80° 57' 0.264" W	Ponce Preserve	Good
683	*Persea borbonia*	Redbay	15	29° 6' 54.993" N	80° 57' 0.231" W	Ponce Preserve	Good
684	*Quercus virginiana*	Live oak	15	29° 6' 54.560" N	80° 57' 0.179" W	Ponce Preserve	Good
685	*Quercus virginiana*	Live oak	14.5	29° 6' 54.462" N	80° 57' 0.702" W	Ponce Preserve	Good
686	*Quercus virginiana*	Live oak	11.5	29° 6' 57.651" N	80° 57' 0.289" W	Ponce Preserve	Good
687	*Quercus virginiana*	Live oak	9.5	29° 6' 57.349" N	80° 57' 2.391" W	Ponce Preserve	Good
688	*Quercus virginiana*	Live oak	9.5	29° 6' 57.544" N	80° 57' 2.396" W	Ponce Preserve	Good
689	*Quercus virginiana*	Live oak	12.5	29° 6' 56.918" N	80° 57' 1.988" W	Ponce Preserve	Good
690	*Quercus virginiana*	Live oak	15	29° 6' 56.971" N	80° 57' 1.919" W	Ponce Preserve	Good
691	*Quercus virginiana*	Live oak	10.5	29° 6' 56.963" N	80° 57' 1.678" W	Ponce Preserve	Good
692	*Quercus virginiana*	Live oak	10	29° 6' 56.896" N	80° 57' 1.676" W	Ponce Preserve	Good
693	*Quercus virginiana*	Live oak	10	29° 6' 56.919" N	80° 57' 1.658" W	Ponce Preserve	Good
694	*Quercus virginiana*	Live oak	10	29° 6' 55.931" N	80° 56' 58.473" W	Ponce Preserve	Good
695	*Quercus virginiana*	Live oak	13	29° 6' 58.061" N	80° 57' 1.589" W	Ponce Preserve	Good
696	*Quercus laurifolia*	Laurel oak	21	29° 6' 58.089" N	80° 57' 1.671" W	Ponce Preserve	Good
697	*Quercus laurifolia*	Laurel oak	10	29° 6' 57.936" N	80° 57' 1.711" W	Ponce Preserve	Good
698	*Quercus virginiana*	Live oak	14	29° 6' 57.863" N	80° 57' 0.906" W	Ponce Preserve	Good
699	*Quercus virginiana*	Live oak	13	29° 6' 58.016" N	80° 57' 0.711" W	Ponce Preserve	Good
700	*Quercus virginiana*	Live oak	13	29° 6' 58.631" N	80° 57' 2.323" W	Ponce Preserve	Good
701	*Quercus virginiana*	Live oak	11	29° 6' 57.064" N	80° 56' 59.562" W	Ponce Preserve	Good
702	*Persea borbonia*	Redbay	10.75	29° 6' 58.168" N	80° 57' 0.378" W	Ponce Preserve	Good
703	*Quercus virginiana*	Live oak	2	29° 6' 52.73" N	80° 56' 59.85" W	Ponce Preserve	Good
704	*Quercus virginiana*	Live oak	11.5	29° 6' 58.015" N	80° 57' 0.033" W	Ponce Preserve	Good
705	*Quercus virginiana*	Live oak	17	29° 6' 58.011" N	80° 56' 59.941" W	Ponce Preserve	Good
706	*Quercus virginiana*	Live oak	13	29° 6' 58.848" N	80° 57' 2.105" W	Ponce Preserve	Good
707	*Quercus virginiana*	Live oak	13	29° 6' 57.101" N	80° 57' 0.957" W	Ponce Preserve	Good
708	*Persea borbonia*	Redbay	11	29° 6' 56.767" N	80° 56' 59.460" W	Ponce Preserve	Good
709	*Persea borbonia*	Redbay	11	29° 6' 56.280" N	80° 56' 59.390" W	Ponce Preserve	Good
710	*Quercus virginiana*	Live oak	40	29° 6' 55.556" N	80° 56' 59.017" W	Ponce Preserve	Good
711	*Quercus virginiana*	Live oak	14	29° 6' 55.790" N	80° 56' 58.560" W	Ponce Preserve	Good
712	*Quercus virginiana*	Live oak	14	29° 6' 51.865" N	80° 56' 59.423" W	Ponce Preserve	Good
713	*Quercus virginiana*	Live oak	20	29° 6' 51.830" N	80° 56' 59.491" W	Ponce Preserve	Good
714	*Quercus virginiana*	Live oak	29.25	29° 6' 51.843" N	80° 56' 56.439" W	Ponce Preserve	Good
715	*Quercus virginiana*	Live oak	14	29° 6' 51.563" N	80° 56' 55.719" W	Ponce Preserve	Good
716	*Quercus virginiana*	Live oak	11	29° 6' 48.767" N	80° 56' 57.748" W	Ponce Preserve	Good
717	*Quercus virginiana*	Live oak	14	29° 6' 56.020" N	80° 57' 0.403" W	Ponce Preserve	Good
718	*Quercus virginiana*	Live oak	14	29° 6' 56.319" N	80° 56' 59.479" W	Ponce Preserve	Good
719	*Quercus virginiana*	Live oak	11	29° 6' 58.281" N	80° 57' 0.842" W	Ponce Preserve	Good
720	*Persea borbonia*	Redbay	11	29° 6' 56.815" N	80° 56' 59.692" W	Ponce Preserve	Good

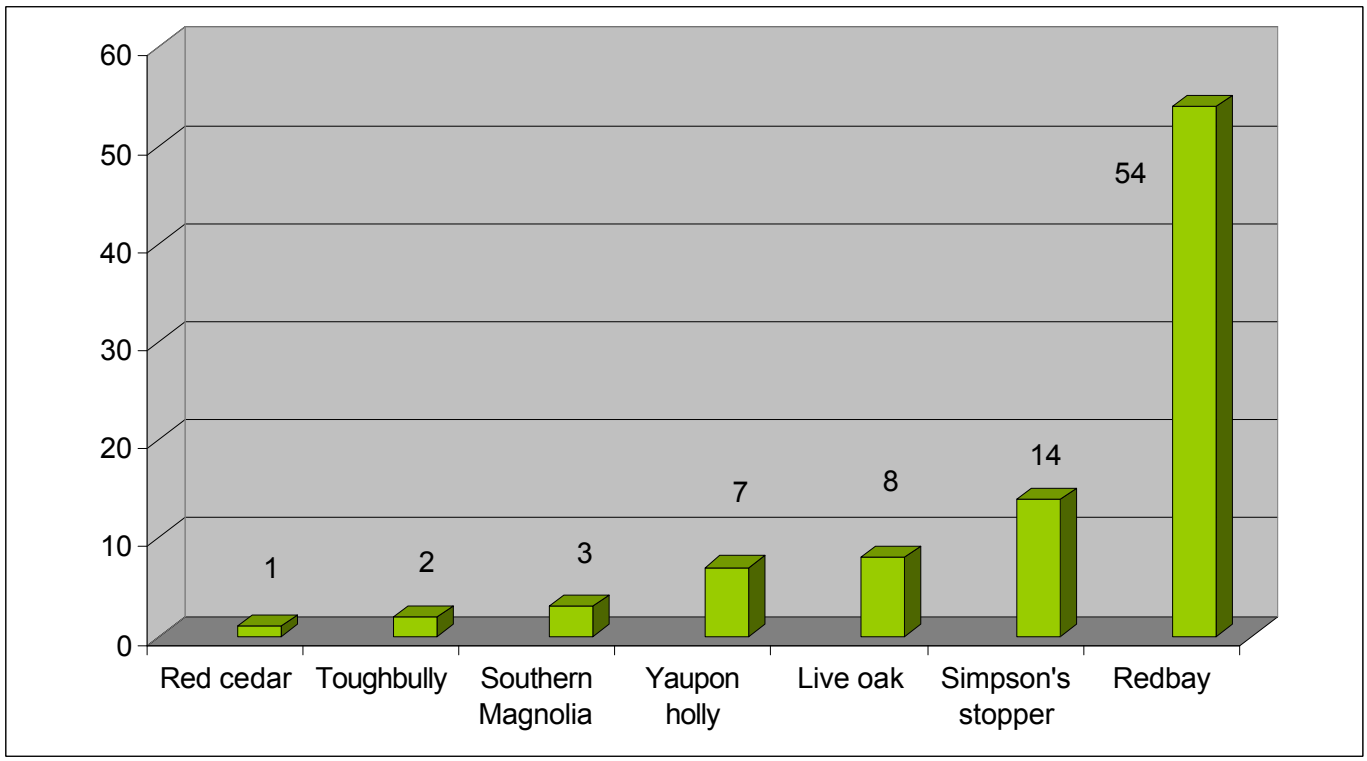
MASTER TREE INVENTORY

Tree_ID	Species	Common Name	DBH	Latitude	Longitude	Location	Condition
721	*Persea borbonia*	Redbay	15	29° 6' 58.234" N	80° 57' 0.196" W	Ponce Preserve	Good
722	*Quercus virginiana*	Live oak	10	29° 6' 56.387" N	80° 56' 59.347" W	Ponce Preserve	Good
723	*Quercus virginiana*	Live oak	12	29° 6' 55.808" N	80° 56' 58.939" W	Ponce Preserve	Good
724	*Quercus virginiana*	Live oak	19	29° 6' 55.017" N	80° 56' 58.279" W	Ponce Preserve	Good
725	*Quercus virginiana*	Live oak	2	29° 6' 52.71" N	80° 56' 59.81" W	Ponce Preserve	Good
726	*Quercus virginiana*	Live oak	1	29° 6' 52.69" N	80° 56' 59.73" W	Ponce Preserve	Good
727	*Quercus virginiana*	Live oak	20	29° 6' 57.215" N	80° 57' 0.676" W	Ponce Preserve	Good
728	*Juniperus virginiana*	Red cedar	2	29° 6' 52.83" N	80° 56' 59.33" W	Ponce Preserve	Good
729	*Quercus virginiana*	Live oak	2	29° 6' 52.50" N	80° 56' 58.87" W	Ponce Preserve	Good
730	*Sabal palmetto*	Cabbage palm	14	29° 6' 55.04" N	80° 56' 58.94" W	Ponce Preserve	Good
731	*Quercus virginiana*	Live oak	11	29° 6' 55.919" N	80° 56' 58.510" W	Ponce Preserve	Good
732	*Quercus virginiana*	Live oak	10	29° 6' 56.672" N	80° 56' 59.593" W	Ponce Preserve	Good
733	*Quercus virginiana*	Live oak	12	29° 6' 56.030" N	80° 57' 0.430" W	Ponce Preserve	Good
734	*Quercus virginiana*	Live oak	11	29° 6' 57.090" N	80° 57' 0.955" W	Ponce Preserve	Good
735	*Quercus virginiana*	Live oak	10	29° 6' 54.899" N	80° 56' 58.630" W	Ponce Preserve	Good
736	*Quercus virginiana*	Live oak	15	29° 6' 58.892" N	80° 57' 2.376" W	Ponce Preserve	Good
737	*Quercus virginiana*	Live oak	18.5	29° 6' 51.913" N	80° 56' 54.545" W	Ponce Preserve	Good
738	*Quercus virginiana*	Live oak	11	29° 6' 56.149" N	80° 57' 0.297" W	Ponce Preserve	Good
739	*Persea borbonia*	Redbay	10	29° 6' 55.404" N	80° 56' 59.148" W	Ponce Preserve	Good
740	*Quercus virginiana*	Live oak	17.5	29° 6' 55.403" N	80° 57' 0.777" W	Ponce Preserve	Good
741	*Juniperus virginiana*	Red cedar	14	29° 6' 55.271" N	80° 57' 0.863" W	Ponce Preserve	Good
742	*Quercus virginiana*	Live oak	13	29° 6' 54.168" N	80° 56' 59.484" W	Ponce Preserve	Good
743	*Quercus laurifolia*	Live oak	10	29° 6' 58.435" N	80° 57' 1.537" W	Ponce Preserve	Good
744	*Quercus virginiana*	Live oak	18	29° 6' 57.993" N	80° 56' 59.960" W	Ponce Preserve	Good
745	*Quercus virginiana*	Live oak	16.5	29° 6' 51.805" N	80° 56' 54.289" W	Ponce Preserve	Good
746	*Quercus virginiana*	Live oak	11.75	29° 6' 51.354" N	80° 56' 53.968" W	Ponce Preserve	Good
747	*Persea borbonia*	Redbay	12	29° 6' 54.981" N	80° 56' 58.671" W	Ponce Preserve	Poor
748	*Quercus virginiana*	Live oak	10	29° 6' 58.407" N	80° 57' 1.911" W	Ponce Preserve	Good
749	*Quercus virginiana*	Live oak	10	29° 6' 56.048" N	80° 57' 0.410" W	Ponce Preserve	Good
750	*Quercus virginiana*	Live oak	10	29° 6' 58.284" N	80° 57' 2.116" W	Ponce Preserve	Good
751	*Quercus virginiana*	Live oak	10	29° 6' 58.759" N	80° 57' 1.956" W	Ponce Preserve	Good
752	*Quercus virginiana*	Live oak	11	29° 6' 58.518" N	80° 57' 2.042" W	Ponce Preserve	Good
753	*Quercus virginiana*	Live oak	10	29° 6' 56.373" N	80° 57' 0.176" W	Ponce Preserve	Good
754	*Quercus virginiana*	Live oak	10	29° 6' 56.143" N	80° 57' 0.561" W	Ponce Preserve	Good
755	*Quercus virginiana*	Live oak	12	29° 6' 56.120" N	80° 57' 0.527" W	Ponce Preserve	Good
756	*Quercus virginiana*	Live oak	19	29° 6' 58.818" N	80° 57' 2.173" W	Ponce Preserve	Good
757	*Quercus virginiana*	Live oak	15	29° 6' 58.434" N	80° 57' 0.758" W	Ponce Preserve	Good
758	*Persea borbonia*	Redbay	15	29° 4' 52.847" N	80° 55' 53.253" W	Stree Tree	Good

APPENDIX D

GRAPHS

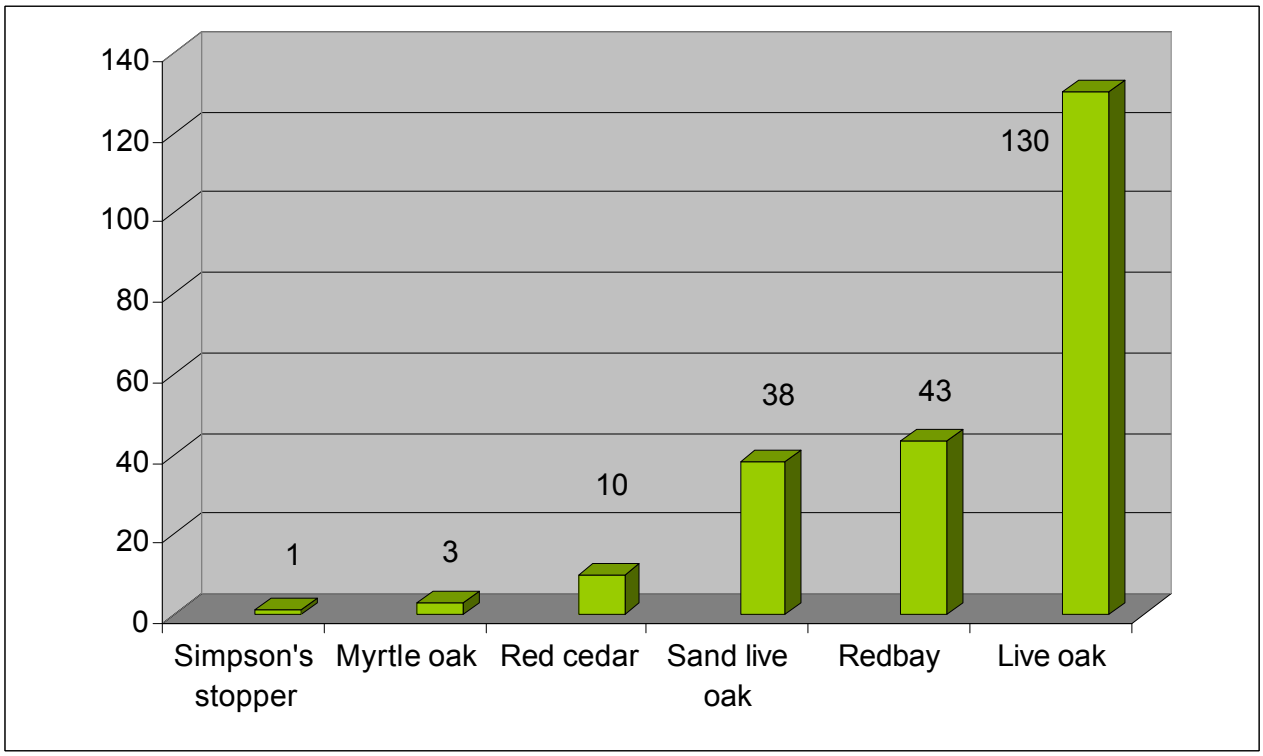
Types of Trees at Tennis Court



This graphs illustrates the types of trees present at the Tennis Courts. The diversity in this park was the highest for any of the parks surveyed. There are two events that likely aided in the higher diversity. First, the location is on the western side of the barrier island where the salt spray effect is lower and the soil contains more organics. The Second is related to humans, the park was not clear cut of all vegetation and more vegetation was left. In many of the managed parks the understory was almost completely removed (Lighthouse Point Park, the Boat Ramp, and the Old Post office).

Recommendations: Future plantings should be comprised of species other than redbay. In addition, care should be taken to not damage tree trunks while cutting the grass and using hedging and string trimmers.

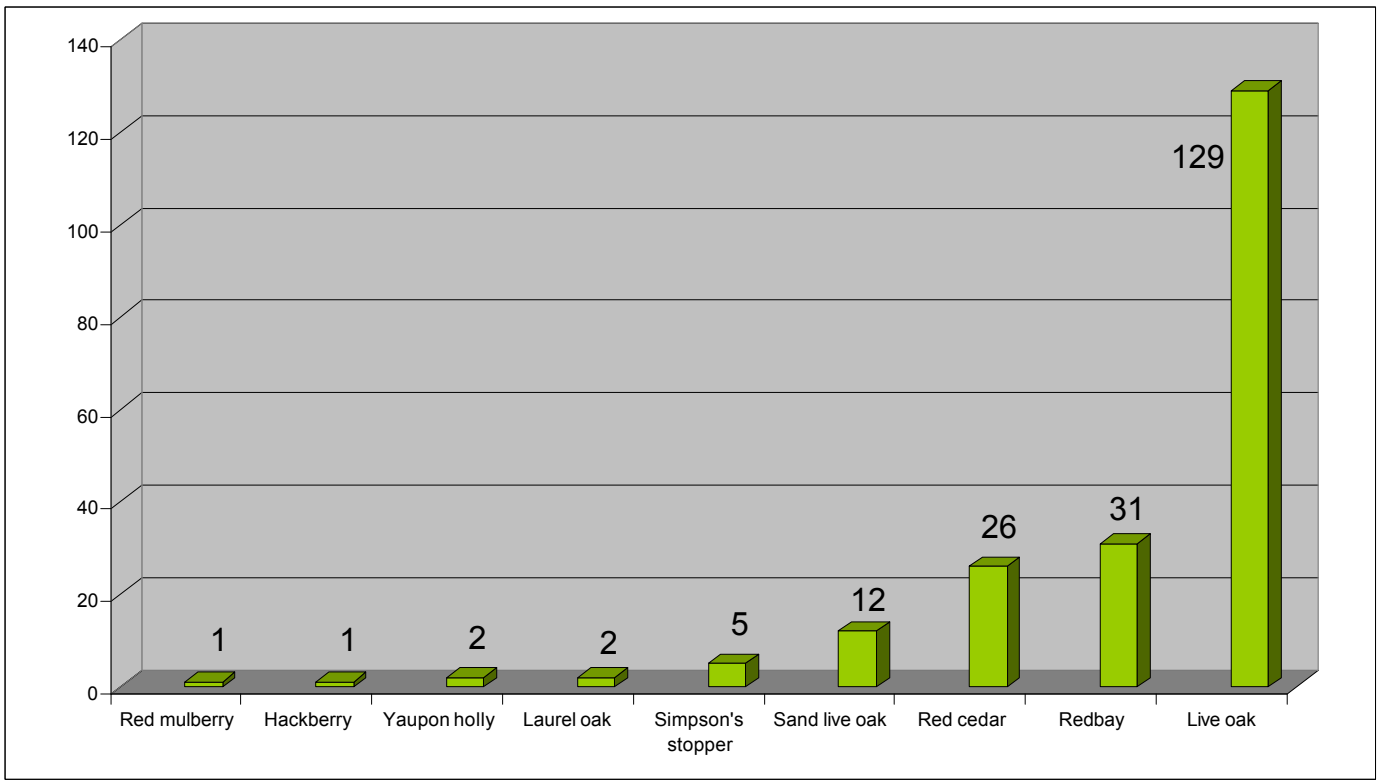
Types of Trees at Lighthouse Point Park



The diversity of trees at Lighthouse Point Park is pretty good. The abundance of the oaks was far greater than any other species. The canopy is healthy and intact. There were places were roots have become exposed due to soil compaction. We strongly advise that the roots not be cut off. To eliminate any tripping hazards, cover with mulch.

Recommendations: Future plantings should be comprised of species other than live oak and redbay. In addition, care should be taken to not damage tree trunks while cutting the grass and using hedging and string trimmers.

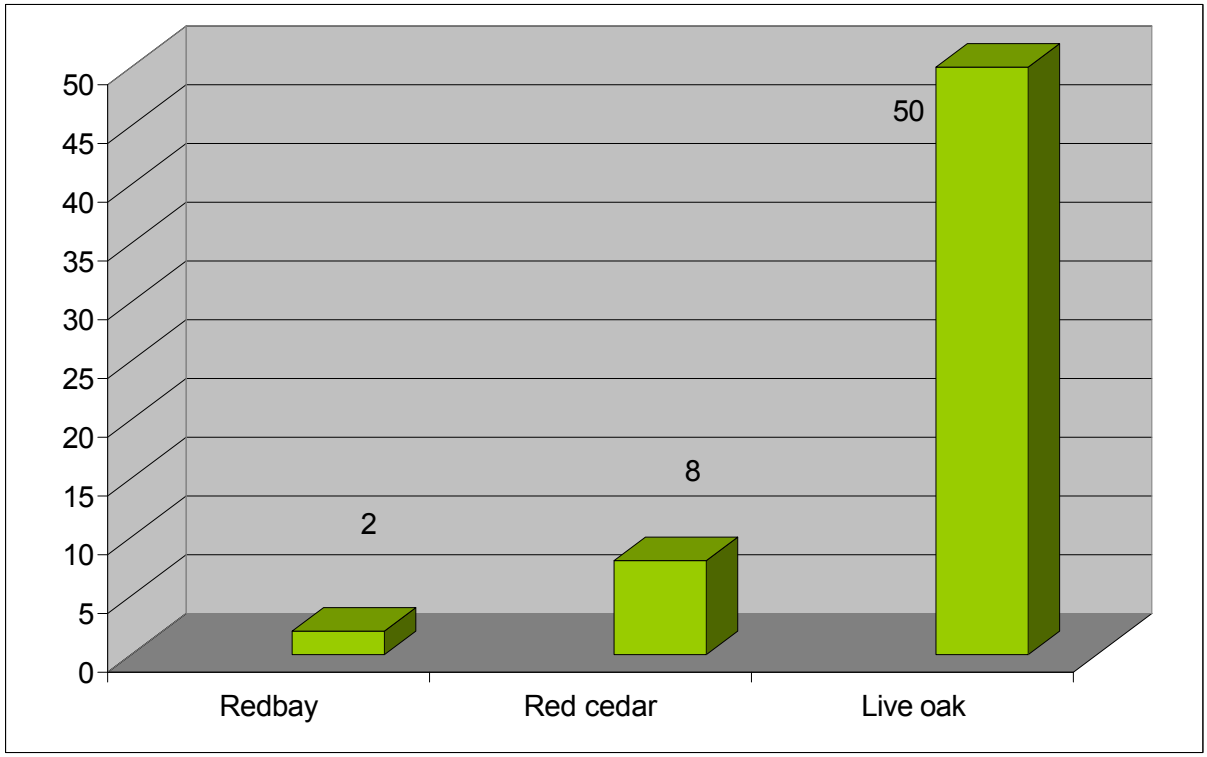
Types of Trees along Rights-of-Way



There is a significant disparity of trees found along the rights of way. Even though live oaks are the dominant species in the Town, a greater diversity should be incorporated into future right of way plantings.

Recommendations: Future plantings should be comprised of species other than live oak red cedar and redbay. In addition, care should be taken to not damage tree trunks while cutting the grass and using hedging and string trimmers. As noted in this management plan, we encourage the Town to use species such as Simpson's stopper and yaupon holly and follow the guidelines provided for species selection.

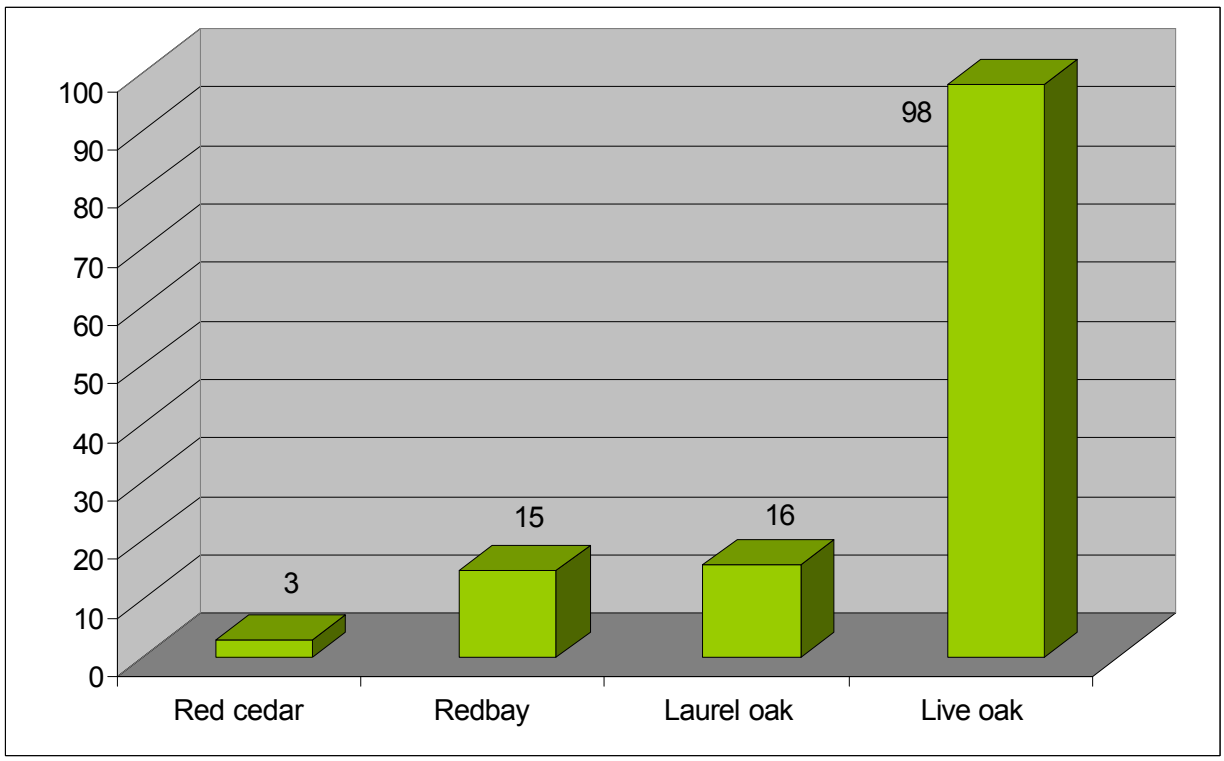
Types of Trees at Timucuan Botanical Garden



The dominance of live oak in Timucuan Botanical Garden is obvious. The tree survey here focused on specimens that were 8 inches in diameter or larger. By doing this we missed many of the smaller species that do not typically exceed six or seven inches in diameter. The forest is healthy and in tact.

Recommendations: Initiate an exotic removal program, soon. There are several species of invasive plants (mostly yard debris from adjacent homes) that are taking over the southern property line, near the marsh edge.

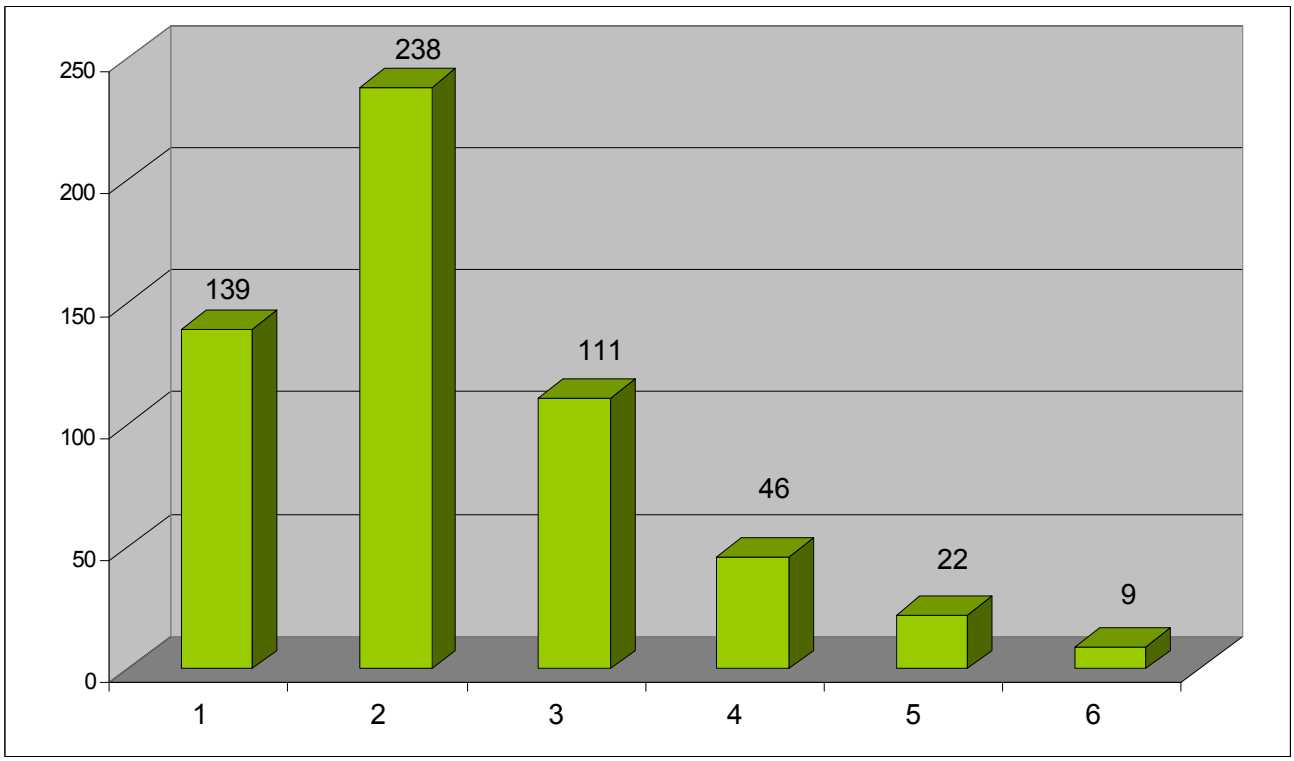
Types of Tree at Ponce Preserve



Ponce Preserve is similar in diversity to Timucuan Botanical Garden. The site is dominated by live oak with other tree species occurring at much lower levels. The preserve is healthy and intact with no major problems. The tree survey here focused on specimens that were 8 inches in diameter or larger. By doing this we missed many of the smaller species that do not typically exceed six or seven inches in diameter.

Recommendations: Initiate an exotic removal program, soon. There are several species of invasive plants (mostly yard debris from adjacent homes) that are taking over the northern property line, approximately half way between A1A and South Peninsula.

Class Size Distribution for Managed Areas



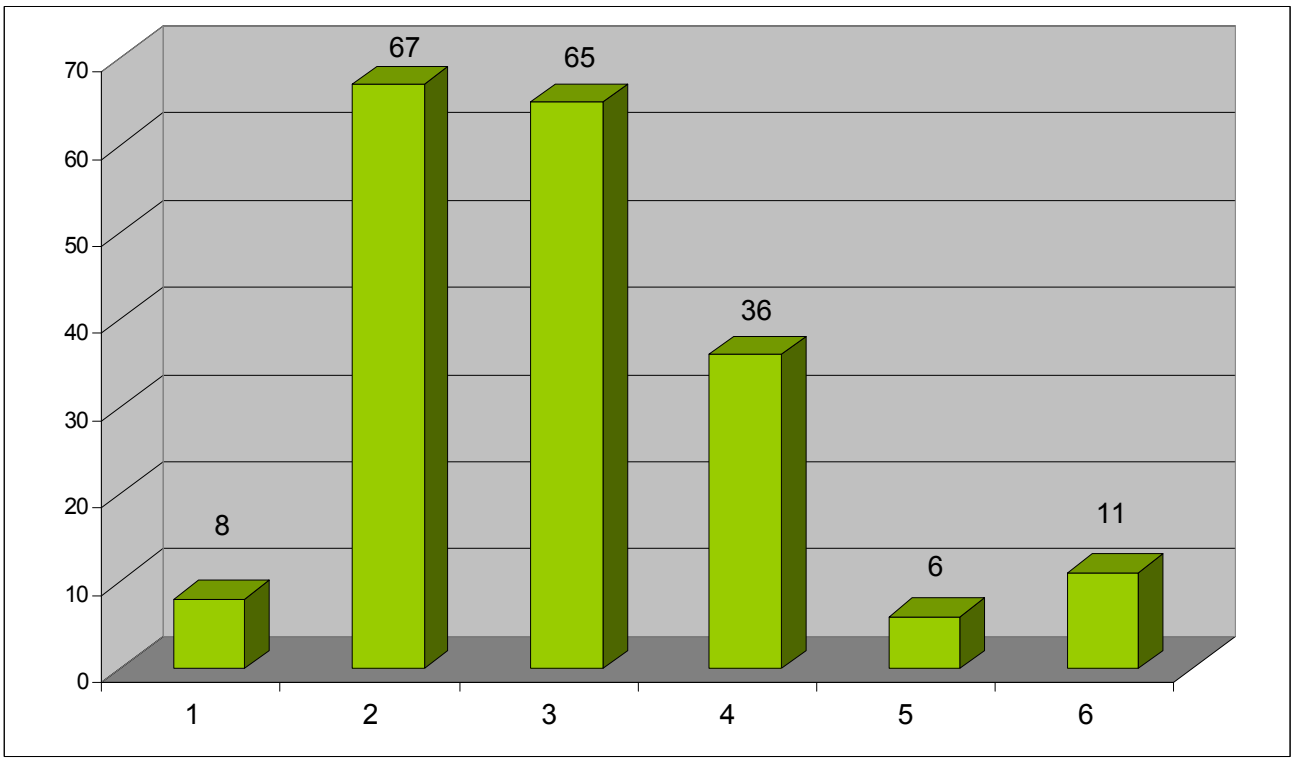
Class size levels

Class size 1	7 inches or less	**Class size 4**	17.1—22 inches
Class size 2	7.1—12 inches	**Class size 5**	22.1—27 inches
Class size 3	12.1—17 inches	**Class size 6**	27.1 inches or more

These Size Classes represent trees in the managed parks in the Town, places where people will walk and recreate. The distribution of class size is a useful measure of the current health level of the forest. It also allows the Town to plan for future forest management needs. Currently, the largest class of trees are between 7 and 12 inches in diameter. At this point, this group of plants does not pose a risk to the Town. The larger trees all occur in significantly lower proportions. However, in approximately 20 years, Size Class 2 trees will have progressed to Size Classes 4 and 5, meaning that many may start to decline and could pose a risk as they die. And, with a lower number of Size Class 1 today, there urban forest canopy may become sparse due to a lack of trees today.

<u>Recommendations:</u> Continue to plant smaller trees to keep Size Class the most or second most dominant group in the Town.

Class Size Distribution for Unmanaged Areas



Class size levels

Class size 1	7 inches or less	**Class size 4**	17.1—22 inches
Class size 2	7.1—12 inches	**Class size 5**	22.1—27 inches
Class size 3	12.1—17 inches	**Class size 6**	27.1 inches or more

This graph represents the Size Classes encountered in the unmanaged areas, place in town were mowing and land management does not actively take place. It is not surprising that the most common trees are classes two and three. It has to be reiterated that trees less than 8 inches in diameter were generally not counted in the unmanaged areas.

As one walks through Ponce Preserve and Timucuan Botanical Garden, the line of sight is low. One cannot see far due to the understory vegetation. We can only hope that Size Class 1 (trees 1 to 7 inches in diameter) is represented in this understory and that that the understory is not made up entirely of shrubs.

<u>Recommendations:</u> continue to monitor for invasive species.

APPENDIX E

SIGNIFICANT SPECIMENS

Significant Specimen in the Urban Forest

"Zeus"
Timucuan Botanical Garden

"Zeus" is a live oak, *Quercus virginiana,* with a diameter of 34" and is found in the center of Timucuan Botanical Garden. Zeus has a significant lean to the west, but is stable and healthy.

Significant Specimen in the Urban Forest

"Athena"
Ponce Preserve

"Athena" is a magnificent tree located in Ponce Preserve. It is growing on the southern slope of Green Mound. It is a multi-trunked tree with a diameter of 45"

Significant Specimen in the Urban Forest	
"Pan" Dog Park	"Atlas" Ponce Preserve
"Pan" is a 42" live oak, *Quercus virginiana*. This tree is a multi-trunked tree that is located just outside the fence of Dog Park, towards the back of the property, near the salt marsh.	"Atlas" is a magnificent arching tree in Ponce Preserve. Atlas has a diameter of 36" and is located close to South Peninsula Drive, at the western slope of Green Mound.

APPENDIX F

PRUNING GUIDELINES

Pruning, sidewalk management, hazard assessments make up the bulk of rights-of-way tree management. Initially, there can be a high level of dead or otherwise hazardous trees to remove. Routine pruning components consist of:

- Regular review right-of-way trees.
- Improving the condition of a large number of trees.
- An increase in the overall value of the urban forest due to the Town's trees' regular care.
- A recommended pruning cycle on a five- or seven-year rotation.

Canopy Lifting/Crown Cleaning

Crown cleaning is the removal of dead, dying, and diseased limbs. Dead limbs that are not removed pose a hazard if they fall and can spread decay into the trunk, which will eventually hollow out the trunk. Removing a dead limb at the branch collar will allow wound wood to close over the wound and prevent decay from entering the trunk.

Crown thinning is also a practice that further reduces the wind resistance of a tree and is a good practice if budgets allow for it. However, it is time consuming and therefore expensive and the thinned trees tend to grow back to their original density. If the contractor is not well trained in this type of pruning, they often over-thin the trees. This over-thinning is referred to as "lion-tailing", which reduces the ability of tree branches to increase in diameter and renders them more prone to storm damage. Regardless of which level of pruning is done, it should be monitored by a Certified Arborist who is not an employee of the contractor.

Palms are often over pruned and proper palm pruning can be summed up briefly: Remove only dead, brown fronds if you find them unsightly, or if they would pose a hazard if they fall. Otherwise, they require no pruning and funds are better spent elsewhere. If the fronds are green, then they are photosynthesizing and providing a benefit to the tree. Removing them reduces the carbohydrate supply to the roots. It will also reduce the trunk diameter of the palm. This is seen in a palm that has been given the typical "hurricane cut".

Structural Pruning

Structural pruning is pruning where the goal is to increase structural integrity and encourage health and long life by pruning to one dominant leader. Structural pruning selectively favors a single, dominant leader by suppressing competing leaders using reduction cuts. Reduction cuts shorten stems back to lateral branches at least one-third

the diameter of the cut stems. It usually involves relatively few cuts and is therefore quick and inexpensive. It also has long term savings because it is much less expensive to remove a problem limb when it is small than to wait until it is large and fails. Removing large limbs leaves large wounds that the tree cannot cover over with its wound wood. This leads to decay entering the main trunk and eventually causing the tree to become a hazard, which then results in the tree having to be removed while possibly still in its prime. Structural pruning is strongly encouraged for all right of way trees and any tree that has a target—a person or object that would be injured or damaged if the tree were to fail - because it is the most cost effective method of pruning to prevent future tree failure. It gives the most "bang for the buck" and is most practical way to provide longevity to a large number of trees.

Hazardous Trees

There are three components in assessing tree hazards. 1) The potential of a tree to fail, 2) The size of the part that would most likely fail, and 3) the presence of a target. As of August 2007, there were no trees identified in the tree inventory that were classified as hazardous.

The most important considerations of these is the target. If there is no target, then essentially there is no hazard. For instance, in an open space if a tree has the potential to fail, it would be considered less hazardous than a tree with the same potential to fail but that is located on the right-of-way of a frequently used street. The potential to fail is determined by the tree's structure and condition. Possible defects that would increase the potential are co-dominant leaders, bark inclusions, decay, and obviously dead and dying trees. In determining the extent of dieback to allow before a tree is removed, keep in mind this is a five year cycle. Trees with little dieback can be pruned of dead wood if determined by your arborist that it will not create a hazard anytime soon. Sometimes a hazard can be eliminated by removing just the limb. This also includes low hanging limbs. Limbs should be elevated to a height that will eliminate the hazard of being struck by vehicles or persons. In a park setting or areas that have foot traffic they should be elevated to 8-10 feet. All limbs over streets and parking lots should be elevated to a minimum of 18 feet. The maximum legal vehicle height is 13 feet 6 inches. The additional clearance allows for branch sag when the foliage is wet or for the additional growth during the five year cycle that will add end weight. A tree should never be elevated to where the clear trunk is greater than 40 per cent of the total height of the tree.

Tree/ Sidewalk Conflicts

Trees lifting sidewalks pose a trip hazard to pedestrians and a liability to municipalities. Better planning can prevent this situation, but if the situation has already occurred, the hazard can be removed by 1) grinding the sidewalk, 2) relocating the sidewalk, 3) flexible, rubberized material, or 4) removing the tree. Each situation must be evaluated separately. The size and condition of the tree will effect the decision that is made.

Grinding the raised sidewalk is inexpensive but usually a temporary solution. If the tree causing the lifting is a mature tree and the lifting is not very significant, then this may be a good solution. If the sidewalk requires replacement, the new walk should be moved further from the tree if at all possible. New products on the market can aid as a comprise to structural modifications. Examples are durable rubber mats that can be used around problem areas. Removing the tree should be considered if the tree is small and already causing damage or it is in poor condition. In order to maintain the tree inventory these trees should be replaced.

The most effective way to reduce sidewalk conflicts is to not plant shade trees within four feet of sidewalks. Root barrier products have shown to be ineffective because tree roots will grow under the barrier and up to the surface on the other side. Research indicates that if a walk must be poured close to a tree the best way to prevent lifting is to install a four inch thick stone base below the sidewalk. The roots tend to not grow in the stone as it is too dry of en environment.

Mulching

Mulch provides more than just aesthetics. It conserves moisture during periods of drought and provides protection to the trunk from damaged from string trimmers. Young trees have shallow root systems and periods of drought are normal in the spring of year. Therefore, it is critical that trees be mulched, especially in non irrigated areas. Shredded wood chips such as cypress from chipping operations are just as functional as any mulch purchased. Mulches, like cypress mulch, are cleaner and have better appearance if the budget allows.

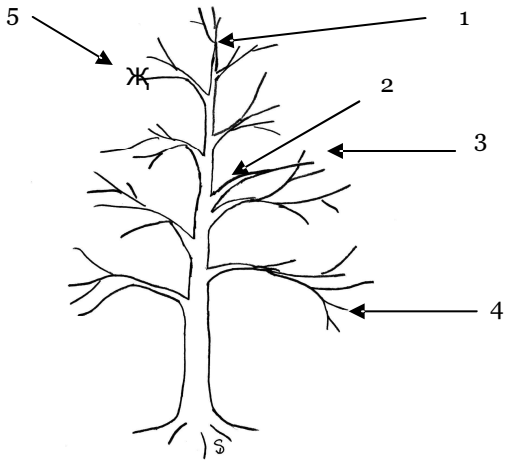
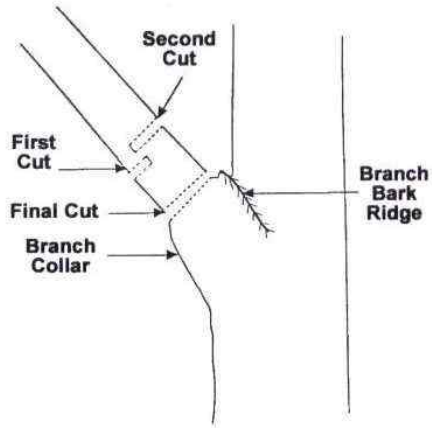
The mulch should be spread 2 inches thick but taper it down so it is not piled against the trunk and the trunk remains dry.

Fertilizing trees

Mature trees rarely require fertilization. Native species while in a juvenile state can benefit from fertilizer but it is not necessary, especially if the right plant is put in the right place. Trees only require fertilizer if nutrient deficiencies are diagnosed. A soil test may be necessary to diagnose the ailing tree. When fertilizers are used, only slow release fertilizers should be used.

General Pruning Guidelines

Property technique for pruning branches

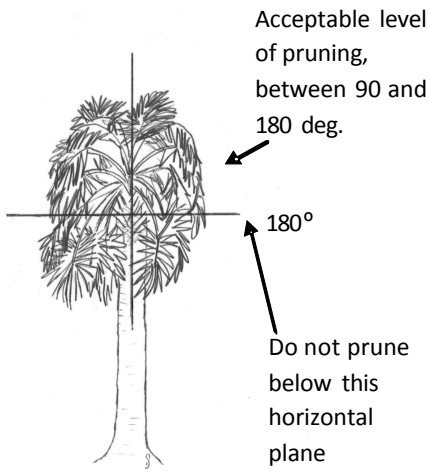
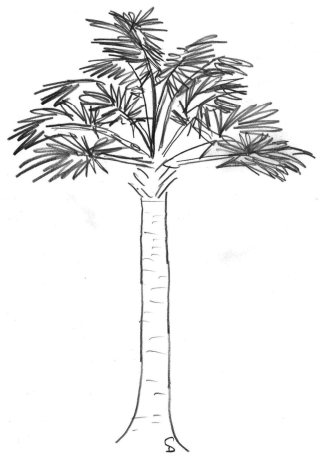
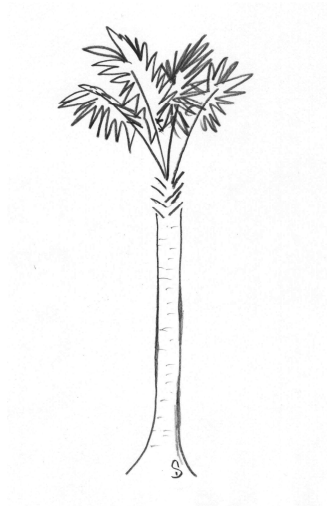
Identifying which branches need removal is an important step in maintaining good tree structure	Branch removal process
	 ANSI A300 Standard Pruning Practices

What to prune

1) Co-dominant stems or leaders. 2) Branches that can be come co-dominant and may develop included bark. 3) Any crossing branches. 4) Low hanging branches. 5) Any diseased stems or branches with mistletoe

When to prune	Proper pruning cuts	How much to prune
Most routine pruning to remove weak, diseased, or dead limbs can be done at any time of the year. But growth is maximized and wound closure is fastest if pruning occurs before the spring growth flush - when trees have just expended a great deal of energy to produce foliage and early shoot growth. Heavy pruning immediately after growth flush can stress the tree. Avoid pruning during active disease transmission periods. A few tree diseases, such as oak wilt, can be spread when pruning wounds allow spores to access a tree.	A pruning cut's location is critical to a tree's response in growth and wound closure. Pruning cuts should be made just outside the branch collar, which contains trunk or parent branch tissue that should not be damaged or removed. When removing a large limb, first reduce its weight to avoid tearing the bark make an undercut about 12-18 inches from the limb's point of attachment. Then make a second cut from the top, directly above or a few inches further out on the limb.	The amount to remove depends on the tree size, species, and age, as well as pruning objectives. Younger trees can tolerate more pruning than mature trees. Each species of tree responds differently and replaces leaves and branches at different rates. The best approach is to prune as much as necessary to maintain proper shape, keeping in mind potential future branch conflicts. When large branches are cut the tree will not be able to heal over the wound. Prune smaller branches earlier in the life of a tree to avoid large pruning cuts later in the tree's life.

Palm Pruning Techniques & Guidelines

Palm pruning guidelines	Acceptable pruning	A Palm that was Over pruned
		
Cabbage Palms are self-pruning palms that do not need to be pruned.	If pruning is necessary, pruning to this extent is acceptable.	Long-term pruning to this extent will eventually weaken the tree and cause its untimely death.

Cabbage palms have survived droughts, fires and floods, enriched the soil and adapted to coastal and inland environments for thousands of years. Their flowers and berries are vitally important to the survival of migratory birds and Florida's indigenous wildlife species.

Repercussions of Harsh Pruning

1. **Cutting healthy green** fronds steals the palms' source of nutrients, permanently stunts growth, invites disease and reduces the palms' natural resilience to high winds.
2. **Cutting fronds** reduces valuable shade, increases ground water evaporation, creates a need for irrigation and opens a wound for possible attack of an insect, disease, or fungus.
3. **Over-pruned palms** develop bottleneck trunks. In high winds and hurricanes this stressed and weakened point will cause the palm to break off and die.
4. **Pruning of protective green fronds** makes the palm's heart cold-sensitive and susceptible to winter frosts and freezes.
5. **Harsh pruning** causes native and migratory songbirds, woodpeckers, butterflies, honey bees, treefrogs, bats, anoles, squirrels, and other wildlife to lose valuable food, shelter and nesting area.
6. **Work boots with climbing spikes** incur wounds in the trunk, leaving the palm prone to disease.

APPENDIX G

CONSTRUCTION GUIDELINES

Tree Protection During Construction

As always, prevention and avoidance are the key elements in preventing soil compaction on construction sites. How trees are treated during construction is vital to their survival after construction (Matheny, 1998). To alleviate tree damage, including roots, the Town should require and follow-up on tree protection standards throughout the building process. Successful tree protection includes reduction of soil compaction by delineating tree protection areas to the drip line to keep machinery and people off the tree roots, use tree wells and retaining walls when changing the soil grade around trees, tunnel under trees instead of trenching across the roots, and use proper pruning techniques when canopies have to be altered.

It is of paramount importance that tree protection barriers be used throughout the entire construction phase. The barriers will keep heavy equipment from compacting the soil and will reduce the chance of an industrial or inorganic chemical spill that could damage roots and ultimately the health of the tree. Figure 5 is an example of a sign that could be reproduced and placed on each tree protection barrier.

Another common activity during the development or redevelopment of a site is utility installation. It is preferable to lay utilities in straight lines, which often takes them into tree protection areas. Whether work is done by FPL or subcontractors, trenching can cause serious damage to trees. When utilities are designed to move through a tree protection zone, it is preferable that the lines be tunneled under a tree's roots instead of trenching across them. Figure 6 illustrates tunneling vs. trenching.

Trees suffer damage slowly. Damage that may occur during construction may not manifest itself for years to come. To increase the odds of long-term tree survival, the owner should provide the best protection possible at the beginning of construction.

Post-Construction Tree Maintenance

Post-construction tree maintenance should include an assessment for the potential need of three components: supplemental watering, mulching, pruning, and soil remediation. Supplemental watering is important since it is likely that root loss may inhibit water absorb, roots may not function as efficiently as they did before construction. When considering supplemental watering, use these guidelines:

- The amount of water applied must be appropriate to the needs of the individual species and its environment. You will need to consider the amount of rainfall, temperature of the soil and air, as well as, the presence or absence of mulch.

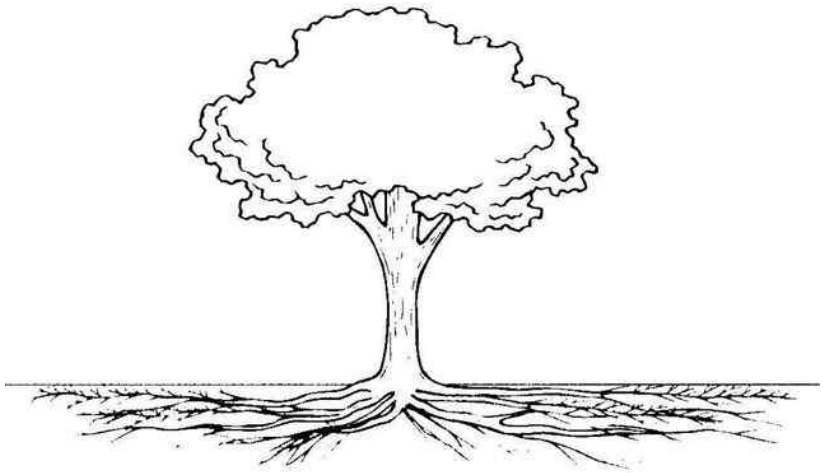
- Light, frequent watering should be avoided; instead, wet the entire root zone and allow it to dry before watering again. A tree needs 1 inch of water every week. Use a rain gauge or monitor weather reports to know how much precipitation has fallen.
- Runoff from new plantings should be avoided so the tree is not overwatered.
- Avoid wetting the trunk, as this practice promotes fungal diseases in a tree that is already stressed.
- Water trees for the winter, as this ensures that trees go into the winter months with sufficient moisture. Trees tend to suffer drought stress during thaw cycles where temperatures are warmer than freezing.

If mulch was used prior to construction it may not be necessary during post-construction management. If it was not, mulch will aid in the retention of soil moisture and act as a slow-release fertilizer aiding in tree recover.

Pruning tree limbs damaged during construction may be necessary to circumvent long term health issues, and will aid in the aesthetics of the new structure (ANSI, 2001) .

Soil Remediation may be necessary due to the compaction of soil by foot traffic, vehicle traffic, or the deposition of paints or cement washes that occurred during construction, which may have been avoided if tree protection structures were used. The result of these activities is a decrease in the porosity of the soil. This creates an unfavorable environment for tree roots to flourish and absorb nutrients. Some possible treatments to help remedy this situation are to:

- Create air spaces in the soil by making small holes a few inches in diameter and about 18 inches deep then filling them with compost or mulch. This technique is known as vertical mulching.
- Remove soil from radially oriented trenches and replaced with a porous soil material.
- Place organic mulch around the tree beneath the canopy.



The roots of a tree extend far from the trunk and are found mostly in the upper 6 to 12 inches of soil (ISA, 2004).

Tree Protection Guidelines

During construction, care for trees and their roots can be accomplished in several ways.

- Install a four-foot high fence or barrier (minimum) at least at the dripline (Critical Root Zone) of all trees to be retained (or twice the dripline for columnar trees). There are a few different guidelines about measuring the "critical root zone" of a tree. For every inch in diameter of a tree (at breast height), one goes a foot out from the trunk for radius of the area as best as possible given construction constraints.

- Retain grade level around any tree so it will not be lowered within either (a) the area within the critical root zone or (b) the protected area.

- Designate on-site parking, traffic and storage away from the trees.

- Locate trenches for utilities to minimize the effect on the root system of the trees to be retained.

- Take measures to protect tree root system from compaction. If the grade, outside of drip line, has been raised, a tree well should be constructed around the tree, preferably at drip line to maintain original grade. Place plywood or a thick layer of mulch on the ground in areas where roots are likely to be and traffic will occur.

- Maintain a buffer of trees or shrubs around the specimen for protection. This vegetation could then be removed after construction by hand or light equipment.

- Tree maintenance should be conducted during construction (watering, fertilizing, pruning, and pest control).

- Make provision for the disposal of potentially harmful items, e.g., excess concrete, runoff from cleaning equipment, paint thinners, heating oil tanks, etc., away from trees.

- Reduce disturbance around trees and restrict removal of topsoil around trees.

- Excavate trenches by hand in areas with roots larger than 1" diameter. If smaller roots are to be pruned, use a sharp saw or pruning blade for a clean cut.

- Prune lower branches if needed to provide clearance for construction traffic.

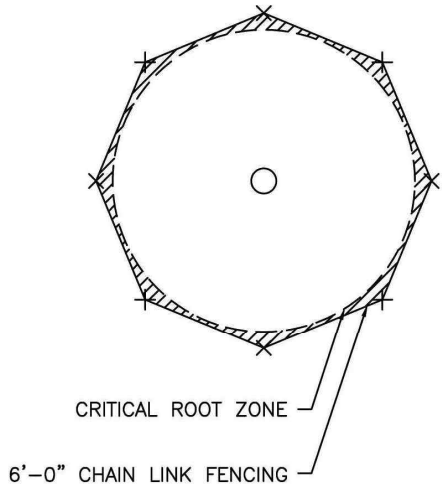
- Do not build up soil around base of tree! This can kill the tree; the roots need oxygen and water, and if roots are too deep, the tree will suffocate. Keep the natural flare of tree base above ground.

- Avoid severe pruning and locating highly reflective surfaces nearby. The exposure may cause sunscald and heat cracking.

Tree Protection Guidelines Illustrated

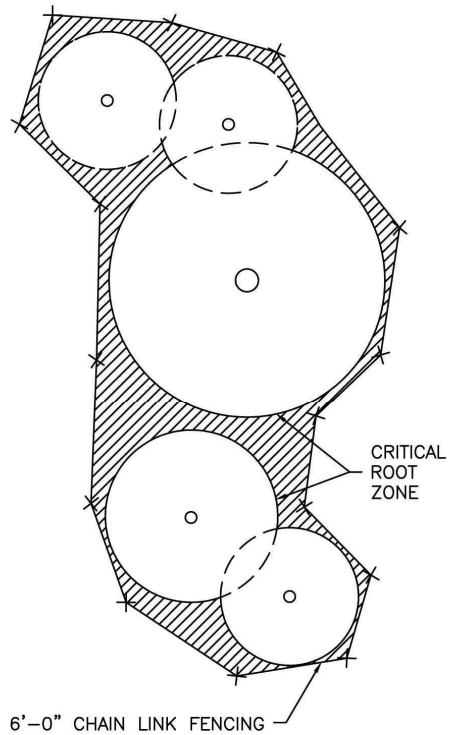
Tree Protection Barriers

Protecting Single Trees



SINGLE OR SPECIMEN TREE

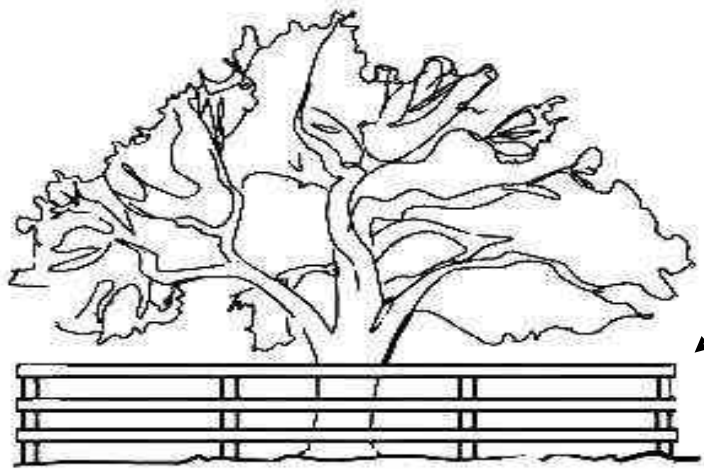
Protecting Trees in Clusters



MULTIPLE OR CLUSTERED TREES

Plan View of Tree Protection Barriers

Fence should be made of a durable material such as chain link or wood

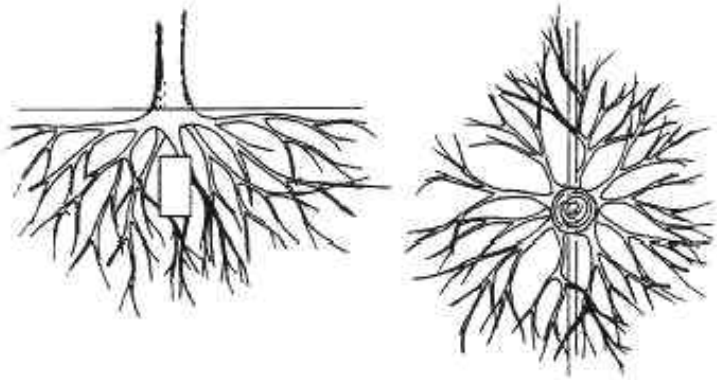


4 foot fence around tree that extends to the drip line

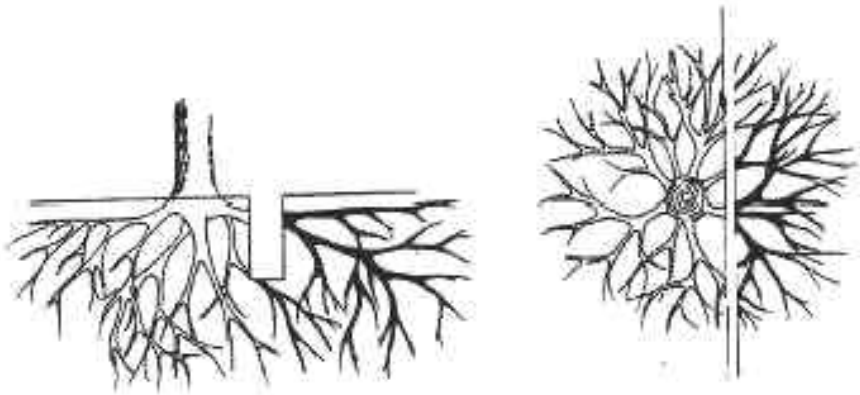
Avoiding Root Damage

Tunneling vs. Trenching

Tunneling keeps most of the roots in tact

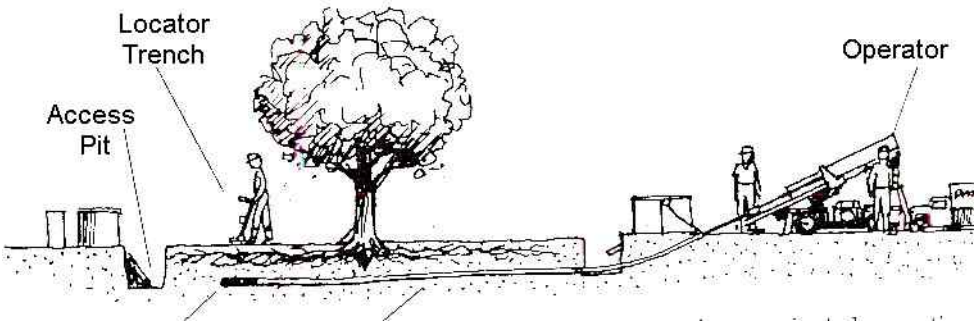


Trenching can cause significant root loss



Tree City USA Bulletin #35

Overview of the tunneling process



National Arbor Day Foundation

No Entry

Tree Preservation Area

Call: 386-235-0404
To report violations

Prohibido entrar
zona de protection del arbol
Llamar al tel. 386-235-0404
Para reportar infracciones

APPENDIX H

PLANTING GUIDELINES

Approved Street Tree and Shrub List

Species	Common Name	Native to Florida	Salt Tolerance	Cold Tolerance
Carpinus caroliniana	American Hornbeam	Yes	Moderate	High
Carya glabra	Hickory	Yes	Moderate	High
Chrysobalanus icaco	Coco plum	Yes	High	Low
Chrysophyllum	Satinleaf	Yes	Moderate	Low
Conocarpus erectus	Buttonwood	Yes	High	Moderate
Eugenia axillaris	White Stopper	Yes	Moderate	Low
Foresteria segregata	Florida Privet	Yes	High	High
Ilex cassine	Dahoon Holly	Yes	Moderate	High
Ilex vomitoria	Yaupon Holly	Yes	High	High
Lagerstroemia indica	Crape Myrtle	No	Moderate	High
Myracanthes frutescens	Simpson's Stopper	Yes	High	Moderate
Osmanthus americanus	American Olive	Yes	Moderate	High
Osmanthus megacarpa	Wild Olive	Yes	Moderate	High
Prunus caroliniana	Carolina Cherry	Yes	Moderate	High
Prunus serotina	Blackcherry	Yes	Moderate	High
Quercus geminata	Sandlive Oak	Yes	High	High
Quercus laurifolia	Laurel oak	Yes	High	High
Quercus myrtifolia	Myrtle Oak	Yes	High	High
Quercus virginiana	Live Oak	Yes	High	High
Randia aculeata	White indigoberry	Yes	Moderate	Low
Sabal palmetto	Sabal palm	Yes	High	High
Serenoa repens	Saw palmetto	Yes	High	High
Sideroxylon tenax	Tough buckthorn	Yes	High	High
Sophora tomentosa	Necklace Pod	Yes	High	Moderate
Ulmus alata	Winged Elm	Yes	Low	High
Ulmus parvifolia	Chinese Elm	No	Low	High
Ulmus pumila	Drake Elm	No	Low	High

Salt tolerance ratings are aimed at plantings west of A1A. The list of plants capable of tolerating salt spray east of A1A is limited.

TREE STAKING DETAIL

3.5 inch Caliper or less

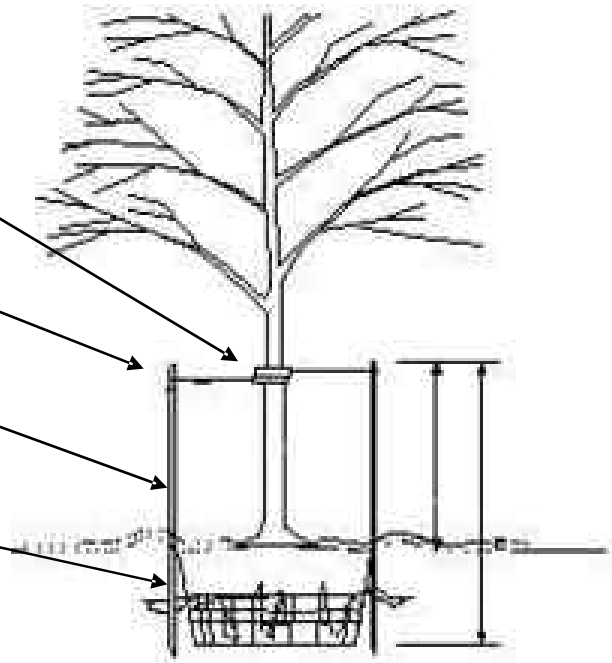
Native Florida Landscapes, LLC
Environmental, Vegetation, & Landscape Consulting
Certified Arborist – Fl-1341A
108 Ocean Aire Terrace South
Ormond Beach, Fl 32176 386-235-0404
spence@spence.com

International Society
of Arboriculture

WIRE OR CABLE SIZES SHALL BE AS FOLLOWS:
TREES UP TO 2.5 INCHES CALIPER – 14 GUAGE
TREES 2.5 TO 3.5 CALIPER – 12 GUAGE

TIGHTEN WIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT, PLASTIC HOSE SHALL BE LONG ENOUGHTO ACCOMMODATE 1.5 INCHES OF GROWTH AND BUFFER ALL BRANCHES FROM THE WIRE

TUCK ANY LOOSE ENDS OF THE WIRE OR CABLE INTO THE WIRE STRAP SO THAT NO SHARP ENDS ARE EXPOSED



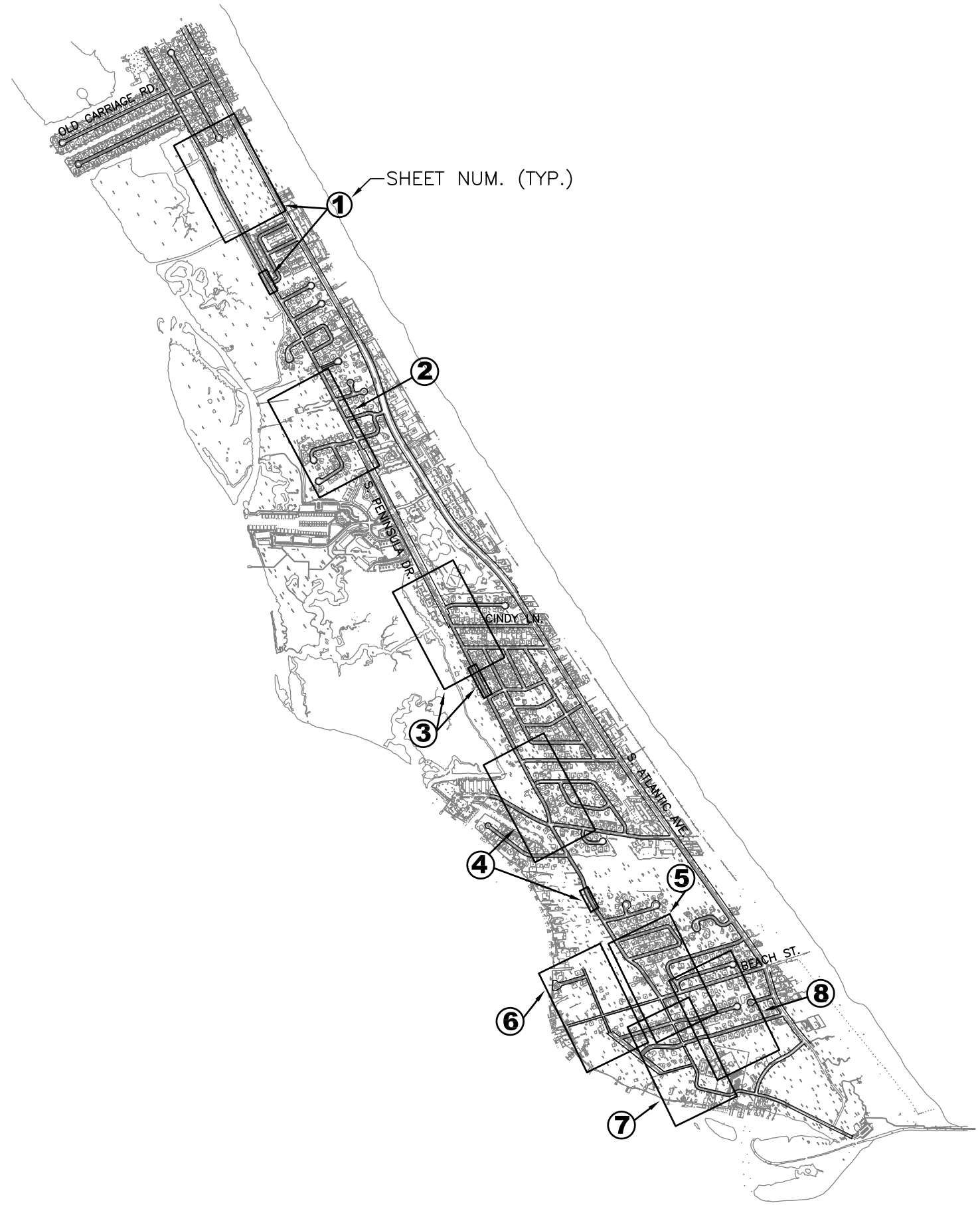
ASSURE THAT THE BEARING SURFACE OF THE PROTECTIVE COVERING OF THE WIRE OR CABLE AGAINST THE TRUNK IS A MINIMUM OF 0.05 INCHES.

REMOVE ALL STAKING AS SOON AS THE TREE HAS GROWEN SUFFICENT ROOTS TO OVERCOME THE PROBLEMS THAT REQUIRE THE TREE TO BE STAKED IN THE FIRST PLACE. STAKES SHALL BE REMOVED NO LATER THAN THE END OF THE FIRST GROWING SEASON AFTER PLANTIING.

STAKING NEED ONLY BE PLACED ON TREES DEEMED LIKELY TO TIP. CONSULT THE LANDSDAPE ARCHITECT OR ARBORST FOR DIRECTION.

THE FOLLOWING REASONS FOR STAKING COULD INCLUDE ANY OF THE FOLLOWING REASONS.
TREES WITH POOR QUALITY ROOTS OR DAMAGE ROOTBALLS
TREES THAT HAVE GROWN TOO CLOSE TOGETHER RESULTING IN A HIGH HEIGHT TO SIZE CROWN RATIO
SOILS ARE LIKELY TO BECOME UNSTABLE DURING HEAVY RAINS
SOILS WITH A GREATER THAN 75% SAND OR CLAY
TREES LOCATED IN WINDY CONDITIONS

KEY SHEET



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FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER: 626
FAX 386 761-3977
P.O. DRAWER 290247 PORT ORANGE, FLORIDA 32129-0247 386 761-6810

TOWN OF
PONCE INLET
VOLUSIA COUNTY, FLORIDA

TREE SURVEY AND
MANAGEMENT PLAN

KEY SHEET

RICHARD W. FERNANDEZ, P.E. 14722
MARK A. HAMPTON, P.E. 27391
BRADLEY T. BLAIS, P.E. 47130
DAVID A. KING, P.E. 50609
ANDREW M. GIANNINI, P.E. 46601

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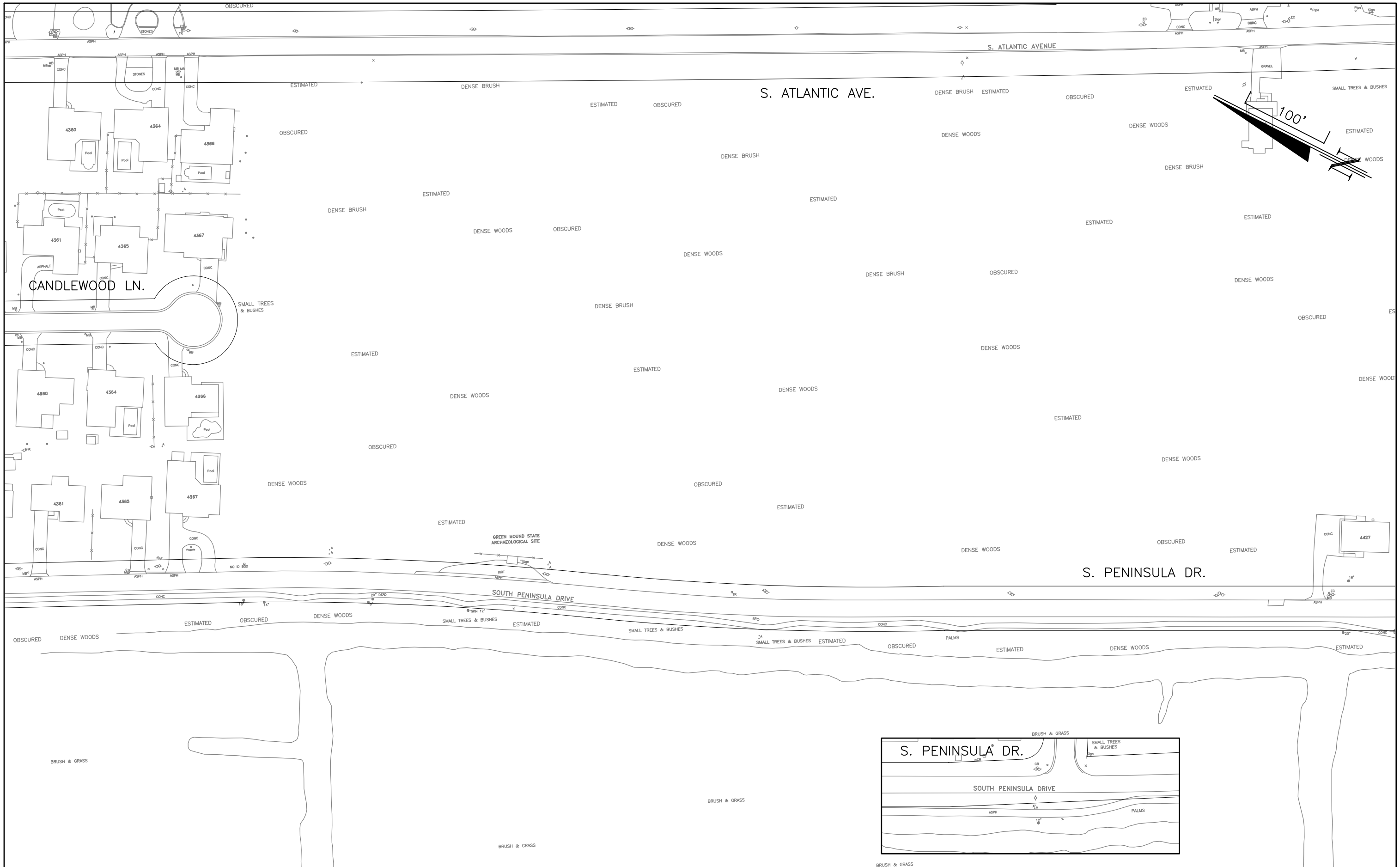
MAP 1

PONCE PRESERVE



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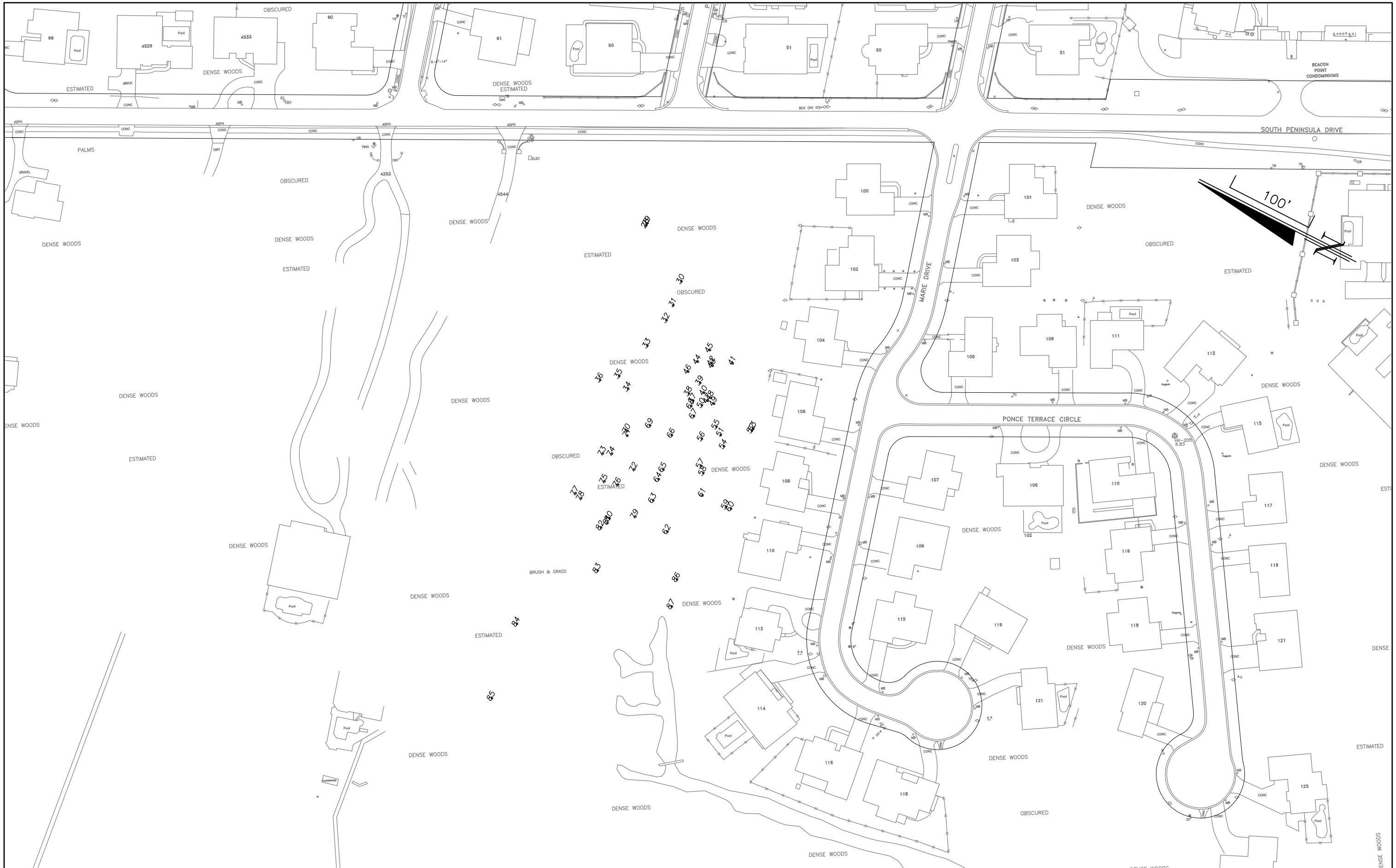
MAP 2

TIMUCUAN BOTANICAL GARDENS



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MAP 3

TENNIS COURTS & DOG PARK

AREA UNDER CONSTRUCTION

BUILDING UNDER CONSTRUCTION

LOGGERHEAD COURT

SOUTH PENINSULA DRIVE

4670 PONCE INLET COMMUNITY CENTER

4680 PONCE INLET TOWN HALL

COURTS

COURT

4681

4698

4701

4704

4708

4709

4710

4711

4712

4713

4715

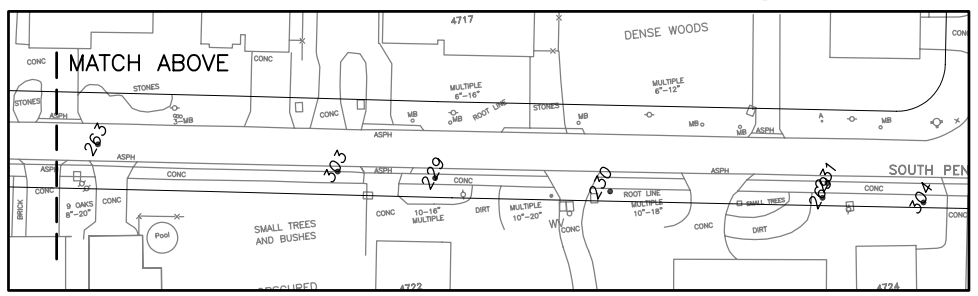
4716

4720

100'

MATCH BELOW

MATCH ABOVE



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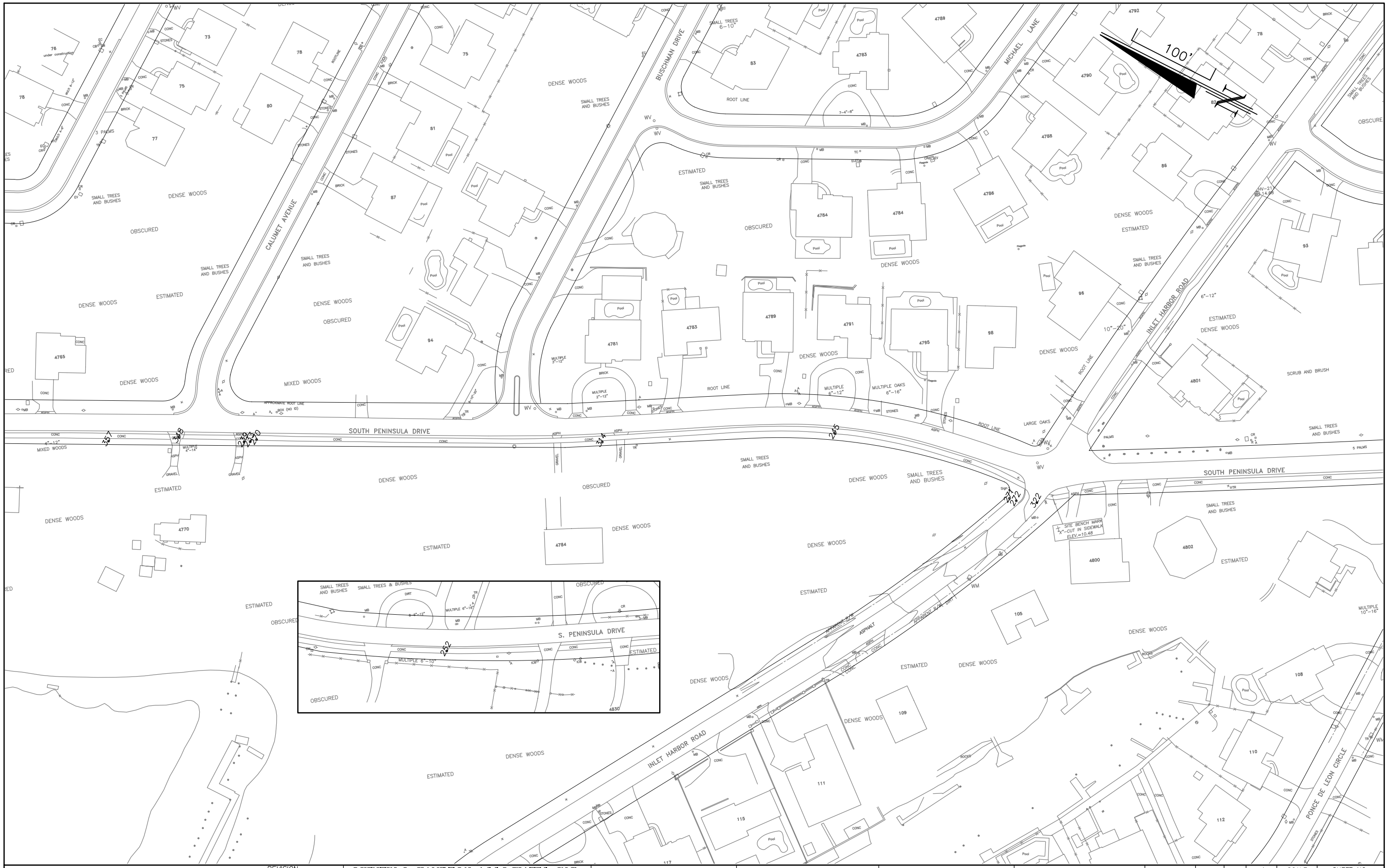
MAP 4

RIGHT OF WAY/
CENTER OF TOWN



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MAP 5

RIGHT OF WAY/
SOUTH OF TOWN

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SCALE AS SHOWN

SHEET NO. 5 OF x

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MAP 6

SAILFISH NORTH & BEACH STREET

DATE	BY	DESCRIPTION	DATE	BY	REVISION DESCRIPTION

QUENTIN L. HAMPTON ASSOCIATES, INC.
CONSULTING ENGINEERS
FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER: 626
FAX 386 761-3977
P.O. DRAWER 290247 PORT ORANGE, FLORIDA 32129-0247 386 761-6810

TOWN OF
PONCE INLET
VOLUSIA COUNTY, FLORIDA

TREE SURVEY AND MANAGEMENT PLAN

TREE LOCATIONS

RICHARD W. FERNANDEZ, P.E. 14722
MARK A. HAMPTON, P.E. 27391
BRADLEY T. BLAIS, P.E. 47130
DAVID A. KING, P.E. 50609
ANDREW M. GIANNINI, P.E. 46601

DESIGNED	PEJ	DATE	02/08
DRAWN	PEJ	DATE	02/08
CHECKED	--	DATE	--
APPROVED	--	DATE	--

SCALE AS SHOWN

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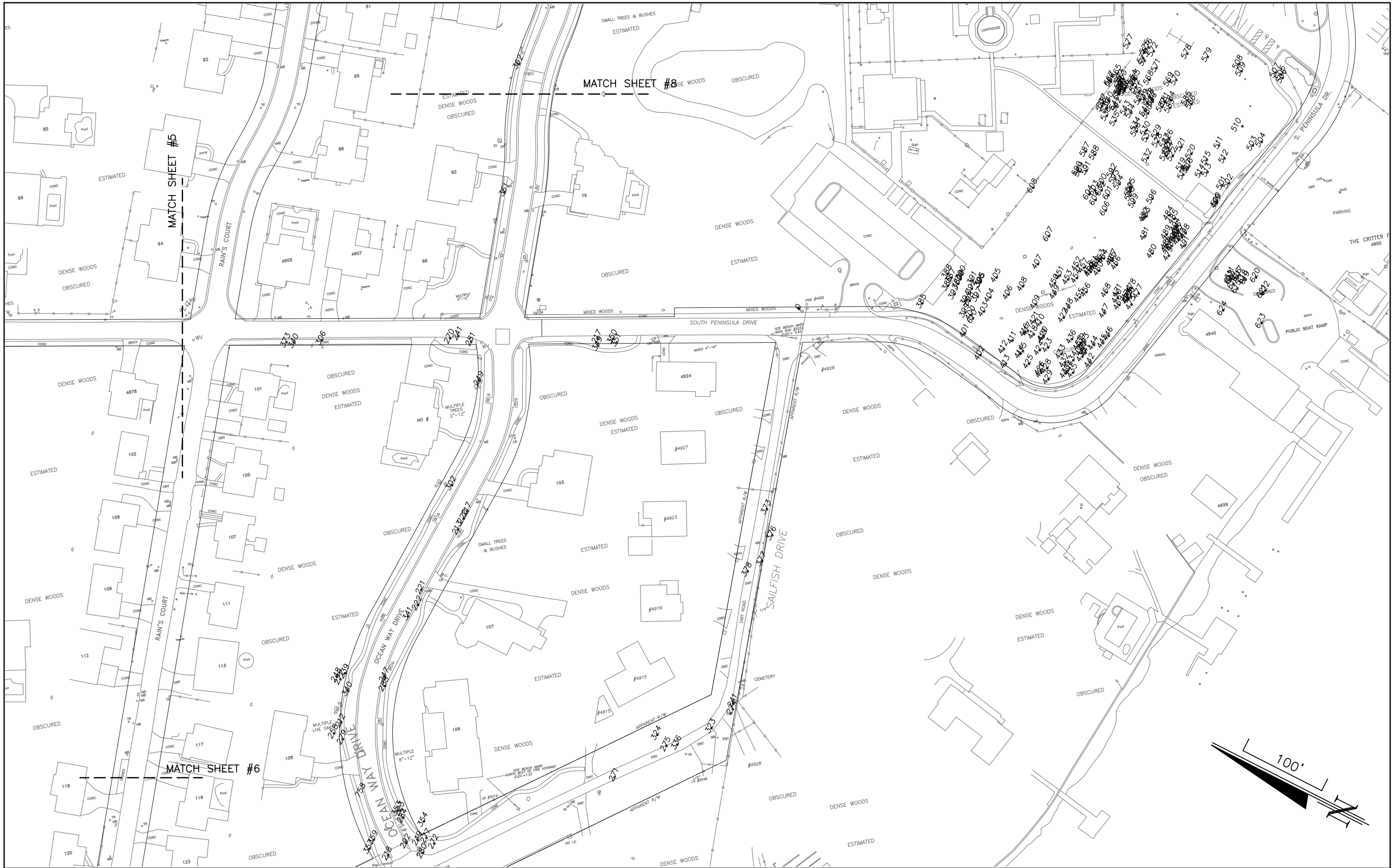
MAP 7

SAILFISH SOUTH & OCEAN WAY WEST



DATE	BY	DESCRIPTION	DATE	BY	REVISION DESCRIPTION

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APPROVED	--	DATE	--

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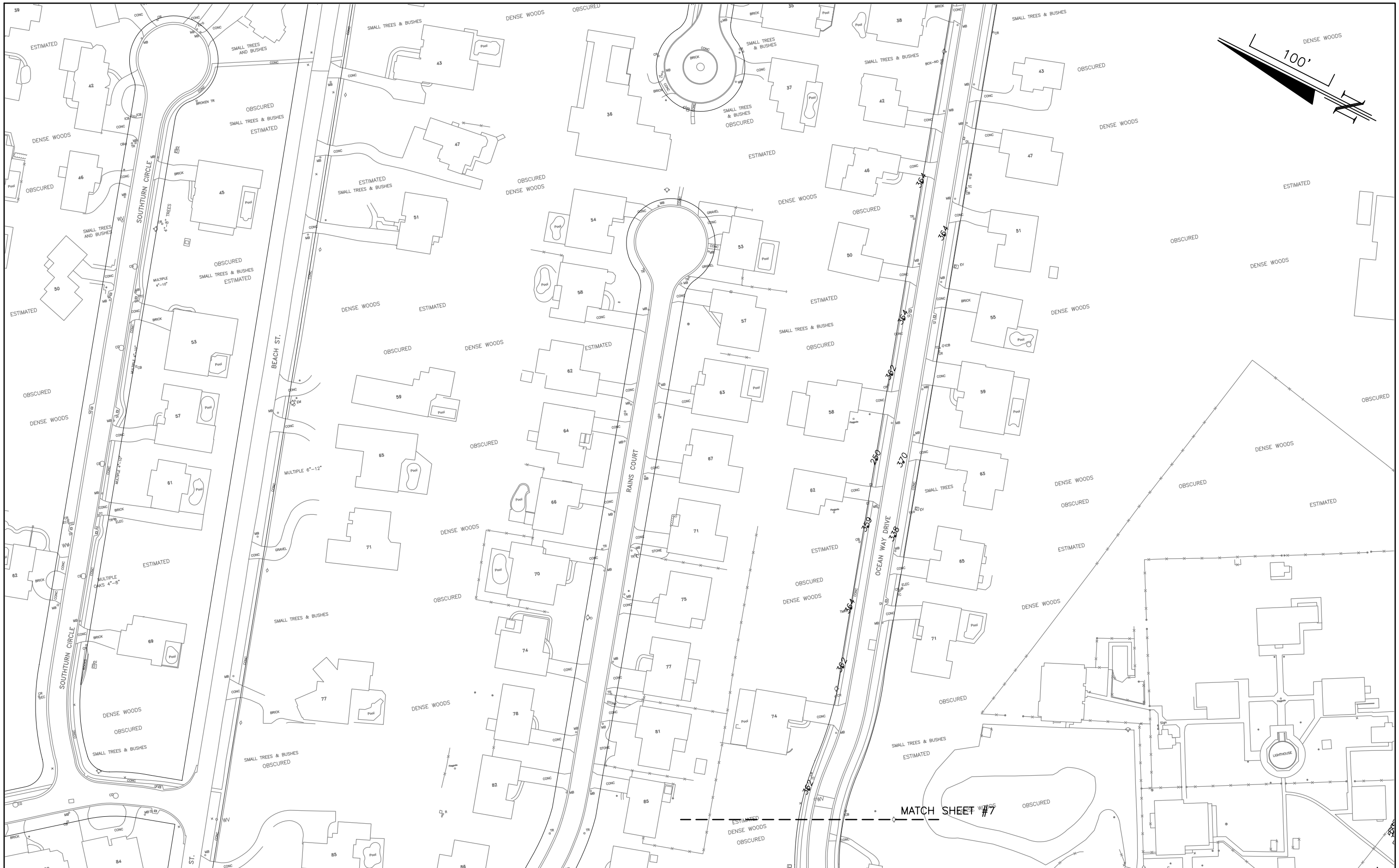
MAP 8

OCEAN WAY EAST



DATE	BY	DESCRIPTION	DATE	BY	REVISION DESCRIPTION

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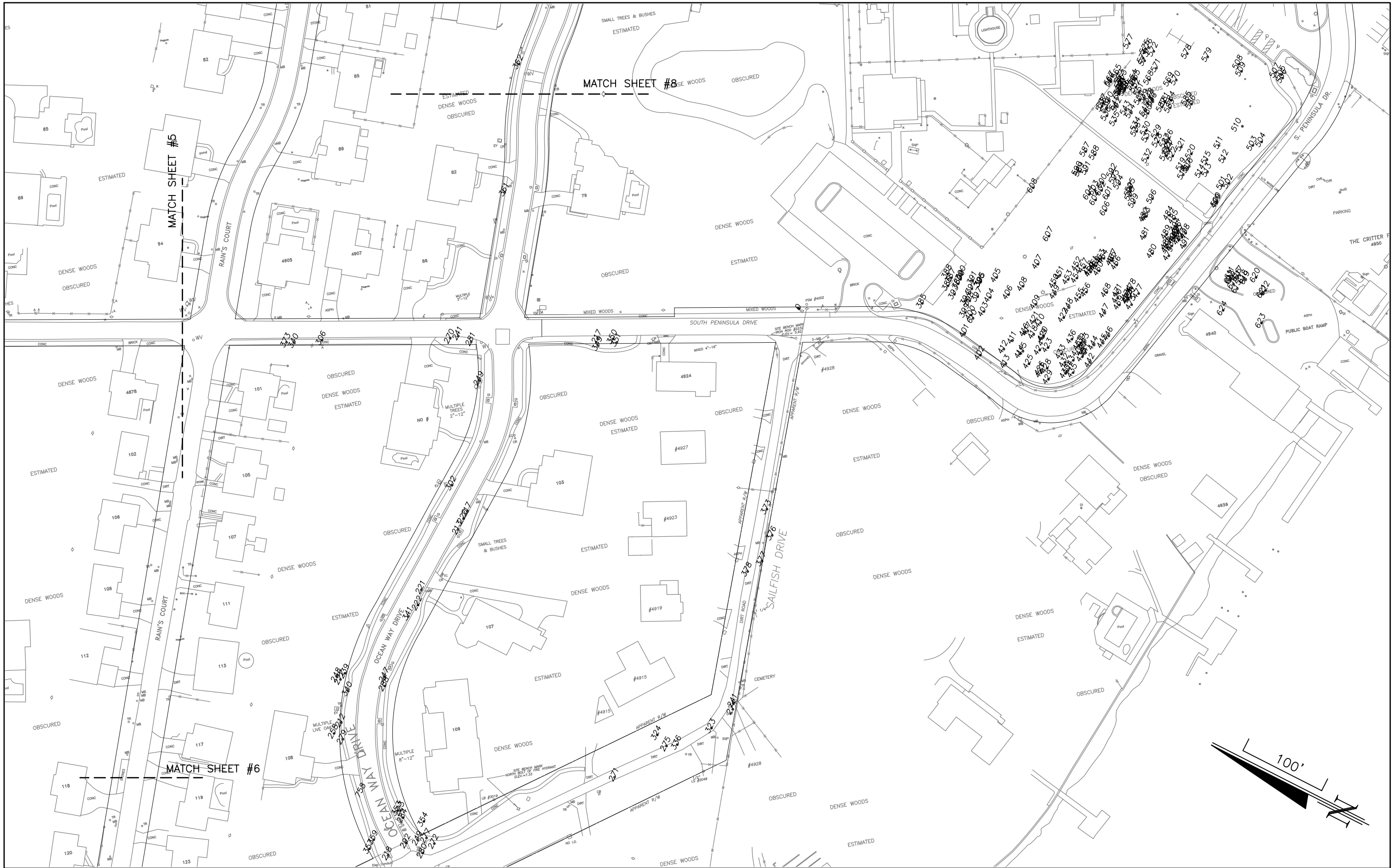
MAP 9

LIGHTHOUSE PARK



DATE	BY	DESCRIPTION	DATE	BY	REVISION DESCRIPTION

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