

# **URBAN FORESTRY MASTER PLAN**

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*City of Bradenton, FL*

UPDATE

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SEPTEMBER 2011





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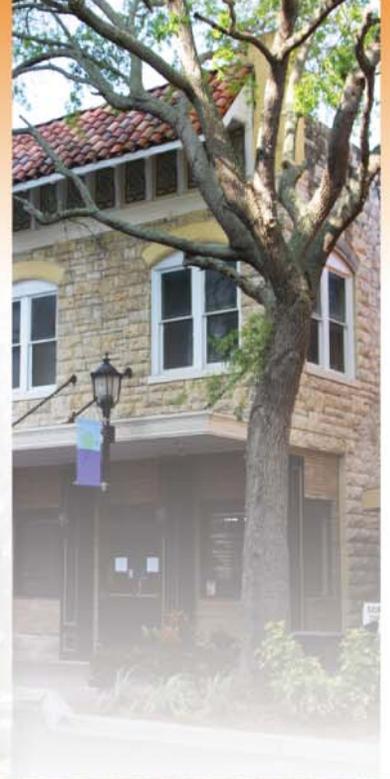
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## INTRODUCTION

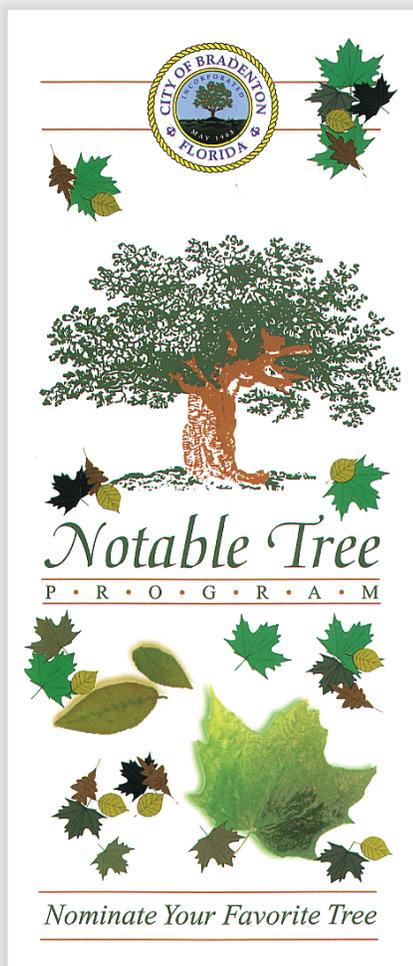
### Purpose and Scope

The purpose of this document is to serve as a blueprint for developing an incremental approach to the issues of urban forestry for the City of Bradenton. The major goals are as follows:

1. Provide an organizational framework for the City of Bradenton's urban forestry program.
2. Establish street tree-planting opportunities for urban and suburban commercial corridors.
3. Inventory and assess the City's existing tree canopy.
4. Identify opportunities to increase and improve tree canopy.
5. Establish standards for the implementation of canopy roadways.
6. Revise the preferred tree-planting palette.
7. Revise establishment and maintenance guidelines to include urban and suburban commercial corridors.
8. Develop corridor guidelines as correlated to the future land use map.
9. Revise the list of potential grant/funding opportunities that are available to implement improvements to the urban forest.
10. Involve and educate the community through public workshops.

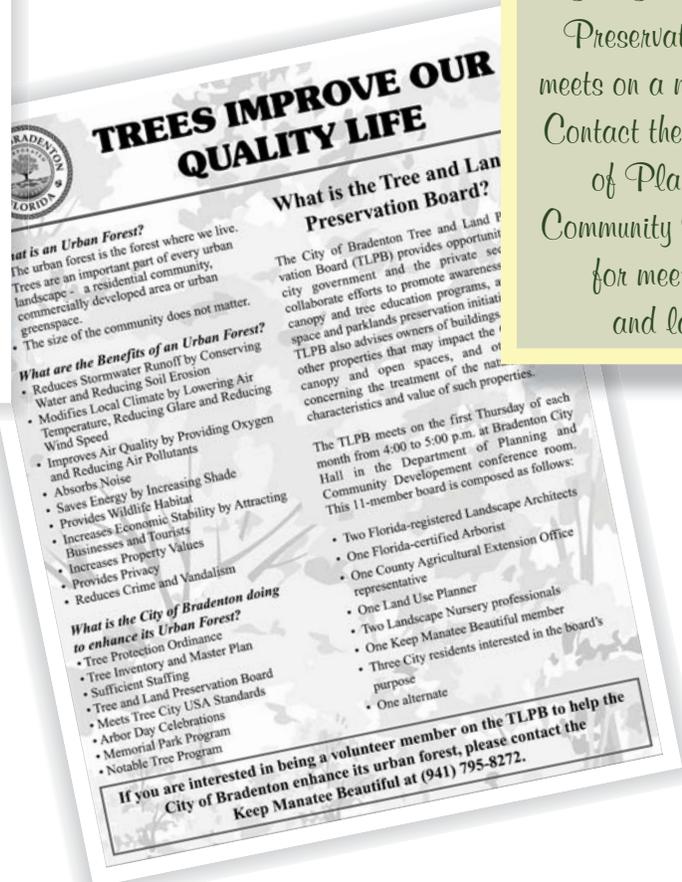
# INTRODUCTION

## Tree and Land Preservation Board



The Tree and Land Preservation Board (TLPB) was established in December 1992 and is composed of a broad cross section of citizenry concerned with fostering the growth of the urban forest. The purpose of the Tree and Land Preservation Board is to promote awareness of the City-wide tree canopy and tree education programs as well as open space and parklands preservation initiatives. The TLPB may also, when determined by the Department of Planning and Community Development (PCD), advise owners of buildings, land, and other properties that may impact the City's tree canopy and open spaces, and other lands concerning the treatment of the natural, visual characteristics and value of such properties. The TLPB works closely with City departments, various civic and private groups, individuals, and outside agencies and organizations.

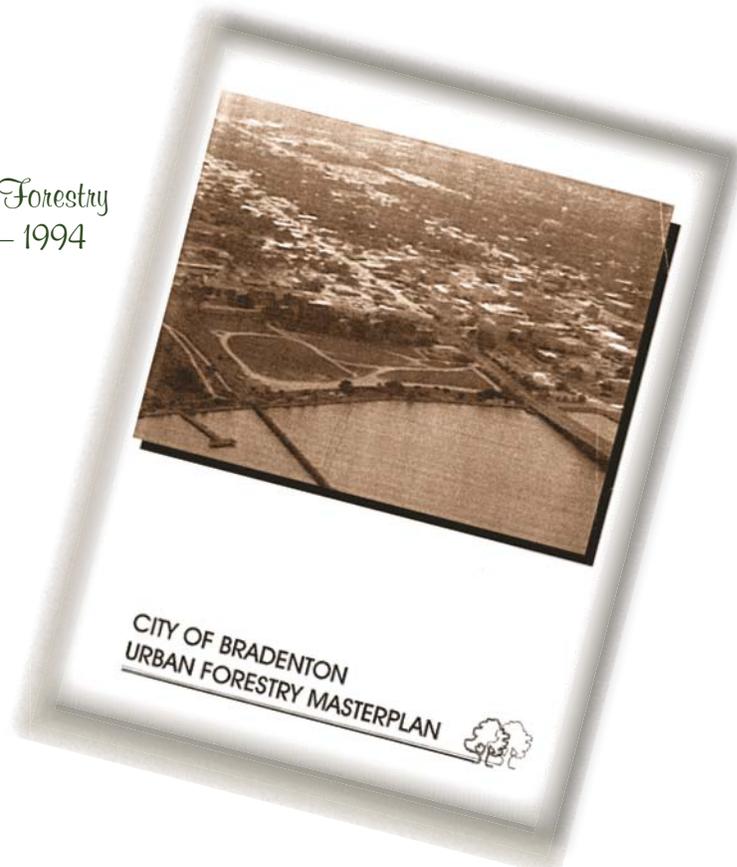
The Tree and Land Preservation Board meets on a monthly basis. Contact the Department of Planning and Community Development for meeting times and location.



## Original Urban Forestry Master Plan

- Developed in 1994.
- Provided organizational framework for the City's tree program.
- Established planting opportunities for major thoroughfares and the downtown area.
- Developed street tree-planting palette.
- Developed guidelines for establishment and maintenance of urban trees.
- Provided a reference for funding opportunities for street tree projects.
- Provided conceptual planting plans for two specific priority projects.
  - Palma Sola Causeway
  - State Road 64 at the Braden River

*Original Urban Forestry  
Master Plan – 1994*



# INTRODUCTION

## Tree Benefits

The City of Bradenton has been recognized as a Tree City USA since December of 1992, which means it is dedicated to the preservation and planting of trees. The City has received five growth awards from the National Arbor Day Foundation: in 1997, 2000, 2002, 2004, and 2008. The Tree City USA Growth Award is provided in cooperation with the National Association of State Foresters and the USDA Forest Service to recognize environmental improvement and encourage higher levels of tree care throughout America. The National Arbor Day Foundation designed the award not only to recognize achievement, but also to communicate new ideas and help communities plan for improvements to tree care.

It is the premise of this document that trees are an integral part of the urban infrastructure, as are the traditional public works components of streets, water, sewer and sanitation. The economic benefits of a tree, however, are often overlooked but well documented. Benefits of trees to the overall quality of life include:



**TREE CITY USA**



*Tree City USA Signage,  
Old Main Street*

### WATER QUALITY

In addition to the visual impact of trees, tree canopies and root systems provide a natural filter to our water supply and reduce storm water runoff, flooding, and erosion.

### AIR QUALITY

Trees are natural air filters. Their foliage reduces particulate matter from the air, including dust, micro-sized metals, and pollutants such as ozone, nitrogen oxides, ammonia and sulfur dioxides. Trees take in carbon dioxide and produce oxygen. These processes can have a significant impact on reducing smog and overall air pollution.

### ENERGY

Trees cool the air naturally. Homes shaded by trees need less energy for cooling, which in turn means lower monthly utility bills in the summer. Four trees planted around each home could save up to 30% on summer cooling costs.

### REAL ESTATE

Shaded neighborhoods have a positive economic influence on real estate values, timeliness of home sales, and neighborhood desirability.

### BUSINESS

Trees are good for business. Research shows that consumers respond positively to shopping environments with healthy urban forests. In fact, shaded business districts yield an 11% increase in business.\*

(Note: Information provided by the Florida Urban Forestry Council.)  
\*Center for Urban Horticulture, Fact Sheet #5, University of Washington

## Urban Forestry Progress

### Manatee County Urban Forest Canopy Analyses

A canopy coverage goal is important to ensure that a healthy, sustainable forest can be maintained as the City continues to develop and expand. In the *Manatee County Urban Forest Canopy Analysis 2004 and 2009*, there was a small increase in total acreage and population within the City, but a much larger increase in canopy coverage: from 24% to 33%, or approximately 830 acres. This is important to understand so that the City can create or adjust tree codes and goals and objectives to properly manage the urban forest to attain canopy coverage goals. American Forests, the oldest national nonprofit conservation organization in the United States, which aims to protect, restore and enhance the natural capital of trees and forests, has established the following canopy coverage goals:

- Average tree cover counting all zones      40%
- Suburban residential zones                      50%
- Urban residential zones                            25%
- Central business districts                        15%

These goals may not exactly reflect what is right for the City of Bradenton, but they are a great starting point for beginning to assess the urban forest and create or adjust the City's canopy goals.

Significant benefits of the current urban forest include:

- 1,030 tons of carbon sequestration per year
- 132,271 tons of carbon storage—a 35,744 ton increase since 2004 (more than any other incorporated area within the County)
- Air pollutant removal of 391,823 pounds per year
- Without the urban forest, it is estimated that the City of Bradenton would need 33.7 million cubic feet of additional stormwater storage. This is approximately equal to:
  - 1" of water over the entire City
  - 100 football fields over 6' deep
  - 100 acres nearly 8' deep
  - 1 square mile 1.25' deep



2nd Avenue East

- Annual value of urban forest benefits based on 2009 canopy
  - Carbon Sequestration                            \$51,500
  - Air Pollutant Removal                            \$1,022,290
  - Stormwater Management                        \$5,880,129
  - Total benefit                                        \$6,953,919

## CANOPY ROADS

**A** Canopy Road is a roadway with canopy trees that border each side of the road while providing a significant amount of canopy over or directly adjacent to the roadway. Preservation and maintenance of healthy trees that comprise Canopy Roads will help maintain their historic, aesthetic, cultural, and environmental value. In order to designate, preserve, promote, and protect Canopy Roads, the City and TLPB should consider:

- Developing appropriate definitions for a Canopy Road Protection Zone.
  - A designated section of right-of-way and up to 15 feet of the adjacent private property.
- Developing appropriate definitions of a Clear Zone.
  - The canopy above a roadway must be maintained to a 16-foot clearance over drivable surface from curb to curb for vehicular use. It shall also mean the canopy above pedestrian zones trimmed to 10 feet above ground surface and 2 feet laterally from edge of sidewalk.



*18th Street Northeast*

Clear Zones listed above are suggestions and will be further defined as the Canopy Road program is further developed. Clear Zones shall be required to meet current Florida Department of Transportation (FDOT) and all other local requirements at the time projects are implemented.

- Developing preferred Canopy Road characteristics such as:
  - A Canopy Road shall have a minimum length of one-eighth mile (660 feet) with a minimum of 50% overhead coverage (excluding invasive species) per section of roadway as measured by branching, drip line, shading, and other visual cues; or
  - A Canopy Road shall have a minimum length of one-quarter mile (1,320 feet) with overhead coverage contributing to a point-based evaluation based on tree canopy coverage as a percentage of overall roadway length, canopy condition, and composition; and
  - A Canopy Road shall consist of a minimum of 75% native plant species and naturalized plant species; and
  - A Canopy Road may be composed of more than one segment of differently named roads providing they are contiguous and the combined length meets the minimum requirement.
  - Canopy Roads shall have appropriate signage to delineate the limits of the Canopy Road.

# URBAN FORESTRY MASTER PLAN

*City of Bradenton, Florida*

- Developing special pruning requirements so not to compromise the integrity of the canopy to shade the road. For example:
  - Requirements for franchised utilities to notify the City prior to any utility line clearing on Canopy Roads, and that such proposed maintenance be performed under the direct supervision of an ISA Certified Arborist, urban forester, or registered consulting arborist (RCA).
- Developing permit requirements for protection of Canopy Roads for projects with proposed impacts to Canopy Roads.

The City Council should be authorized to designate roads as Canopy Roads and set standards for their implementation through the adoption of an appropriate ordinance. Requests for Canopy Roads could be made by residents, City staff, the TLPB, or other members of the community. Once the above standards are further established, the following process for designating Canopy Roads should be further developed and implemented:

- A written public meeting notice should be provided to property owners residing on a potential Canopy Road and the appropriate neighborhood associations.
- The public meeting notice should detail the Canopy Road standards that would become applicable if the road is designated a Canopy Road.
- A public meeting notice should be posted on the potential Canopy Road a minimum of 15 days prior to the public meeting.
- Requests should be coordinated and brought to the Council by PCD for approval.

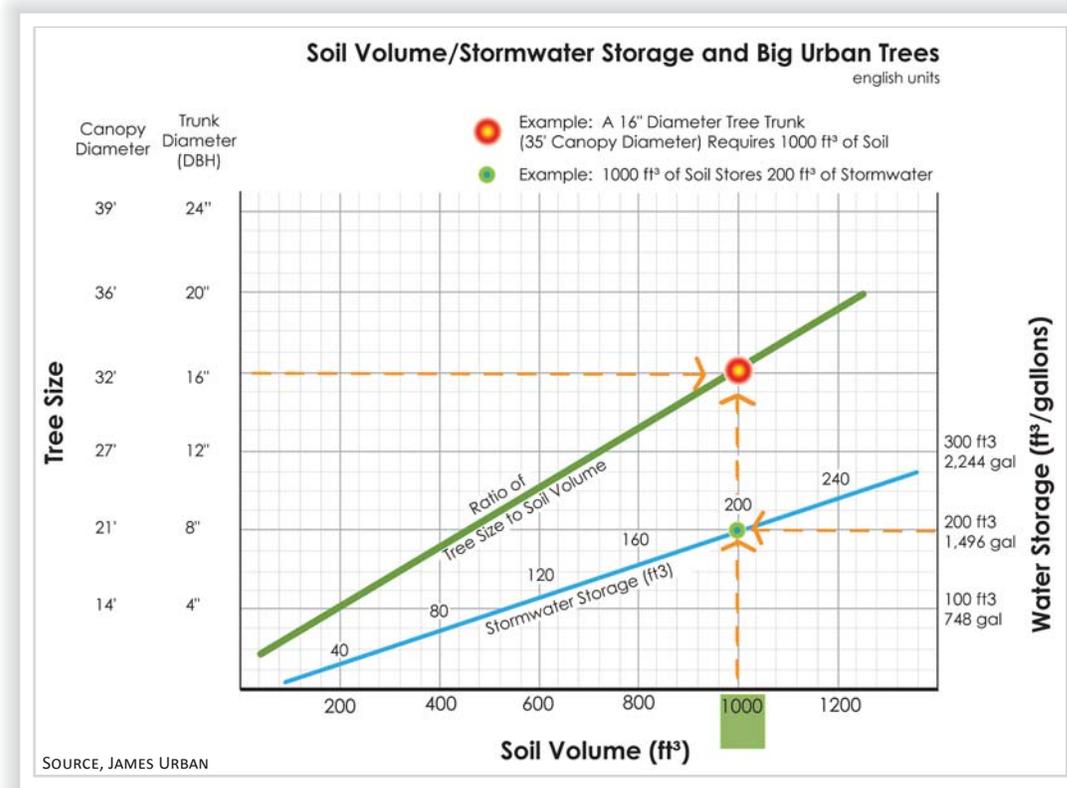


*48th Street Court East*

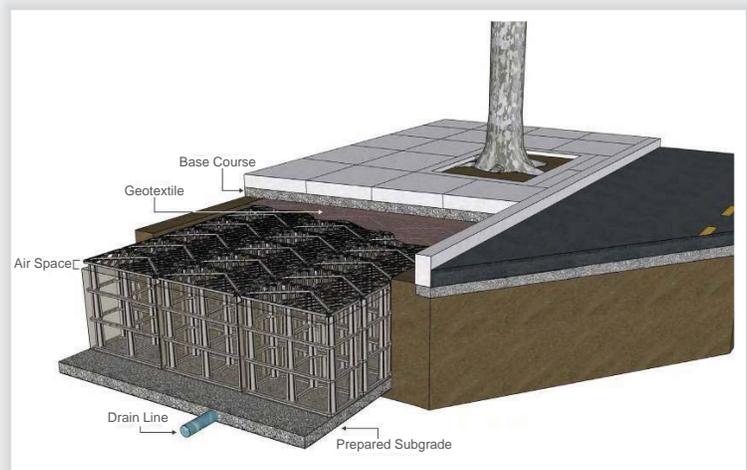
## POTENTIAL CANOPY ROADS

- 12th Street West from Manatee Avenue to Barccarrota Boulevard
- Manatee Avenue East from 1st Street to 15th Street East
- 2nd Avenue East from 15th Street East to 24th Street East
- 48th Street Court East from Manatee Avenue to 8th Avenue East
- 18th Street Northeast from 1st Avenue East to 4th Avenue East

Soil volume is extremely important to the long-term health of trees. The proposed concepts show many of the trees in very small confined spaces. Trees typically do not thrive in this situation but often live several years before they begin to decline due to inadequate soil volume. It is recommended that a minimum of 1,000 cubic feet of non compacted soil be provided for each tree.



This graphic shows how Silva Cells (a product by DeepRoot) may be used to provide non-compacted, subsurface soil volumes to provide a healthier growing environment for trees in the urban forest.



## COMMERCIAL CORRIDORS

In Bradenton, like many finer-scaled cities, the smaller urban blocks and streets in the urban core create a basic grid of potential corridor parks that can enhance the living environment of both residents and visitors. These corridors and associated plazas can be valuable frameworks to enhance the urban forest with creative plantings, hardscaping, street furniture, and lighting.

When these key components are successfully combined with creative and efficient infrastructure, community identity is strengthened at a pedestrian scale that enhances safety and promotes connectivity. Over time, a system of successful streetscapes can attract quality development and retail tenants, thus increasing property values and economic vitality.

Concept plans are a key component for public involvement and gaining overall consensus. Three specific areas have been selected by the City for the following preliminary concepts. These concepts are correlated to the Bradenton Form-Based Code and the Future Land Use Map as applicable. Once additional opportunities are identified, the concept plans for urban and suburban commercial corridors can be modified and applied throughout the City to fit within the local context.\* The following concepts will assist in communicating the City's vision for the urban forest and neighborhood beautification.

### PRIORITY PROJECTS

- Cortez Road West from 51st Street West to 43rd Street West
- 6th Avenue East from 1st Street to 15th Street East
- 6th Avenue West from 15th Street West to 1st Street
- 8th Avenue West from 14th Street to 9th Street West
- 9th Avenue East from 1st Street to 27th Street East
- 9th Avenue West from 9th Street West to 1st Street
- 13th Avenue East from 15th Street East to 27th Street East
- 13th Avenue West from 1st Street to 14th Street West
- 1st Street from Manatee Avenue East to 13th Avenue East
- 9th Street West from 8th Avenue West to 17th Avenue West
- 14th Street West from Manatee Avenue to 26th Avenue West
- 27th Street East from Manatee Avenue to Golf View Avenue



*\*Note: The following prototypical landscape graphics are shown on three specific roadways and are meant to serve as a general guideline, which reflects the City of Bradenton's vision for the urban forest. As plans for each project are further developed, all current FDOT and other local standards must be adhered to. Specific tree locations will be subject to existing utilities.*

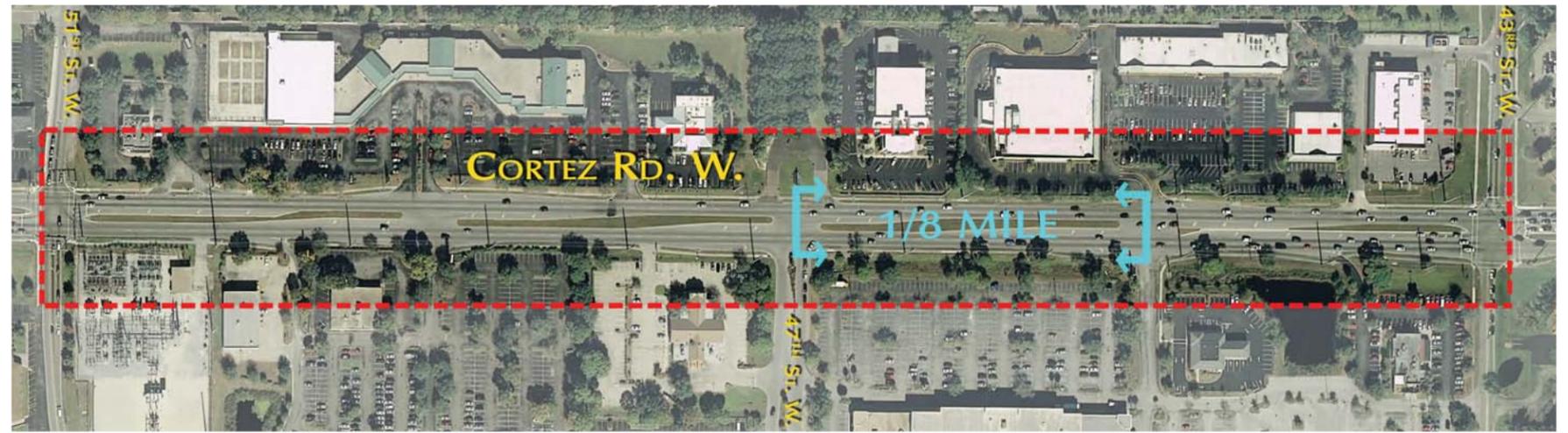
Suburban Commercial Corridors

CORTEZ ROAD WEST

This concept represents a section of Cortez Road from 51st Street West to 43rd Street West. The right-of-way (ROW) along this corridor currently runs immediately adjacent to the back of sidewalk, leaving little opportunity to plant trees within the ROW. It does provide an opportunity to develop public/private partnerships to implement street tree plantings on private property.

The majority of this section of roadway has turn lanes directly adjacent to the medians. Per FDOT Index No. 546, for design speeds of less than 50 MPH, no trees shall be permitted within 100' of the median nose (measured to edge of pavement). For 50 MPH and greater, no trees shall be permitted within 200' of the median nose.

- > Thoroughfare Type: Road
- > Right-of-way Width: Varies
- > Pavement Width: Varies
- > Transect Zone: NA
- > Tree Spacing: 30' On Center (OC) Recommended
- > Planter Type: Planting strips in medians and outside of right-of-way



Recommended Trees

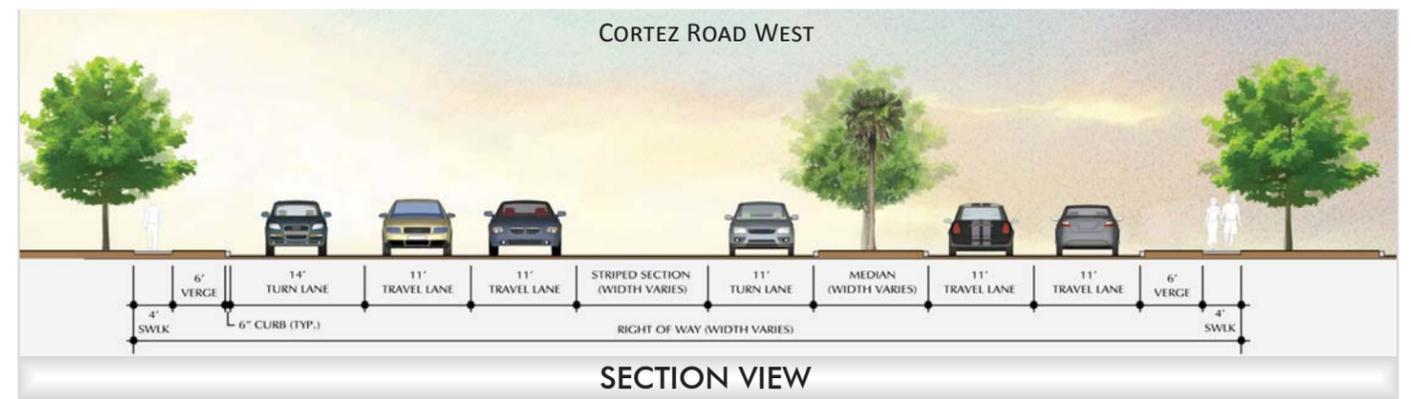
- > **Canopy Trees**
  - American Sweetgum
  - Florida Elm
  - Gumbo Limbo
  - Red Maple
  - Southern Live Oak
- > **Palm Trees**
  - Buccaneer Palm
  - Cabbage Palm
  - Paurotis Palm
- > **Understory Trees**  
*(implemented wherever conflicts prohibit the use of a canopy tree):*
  - Buttonwood
  - Dahoon Holly
  - Orange Geiger Tree



PERSPECTIVE VIEW



PLAN VIEW



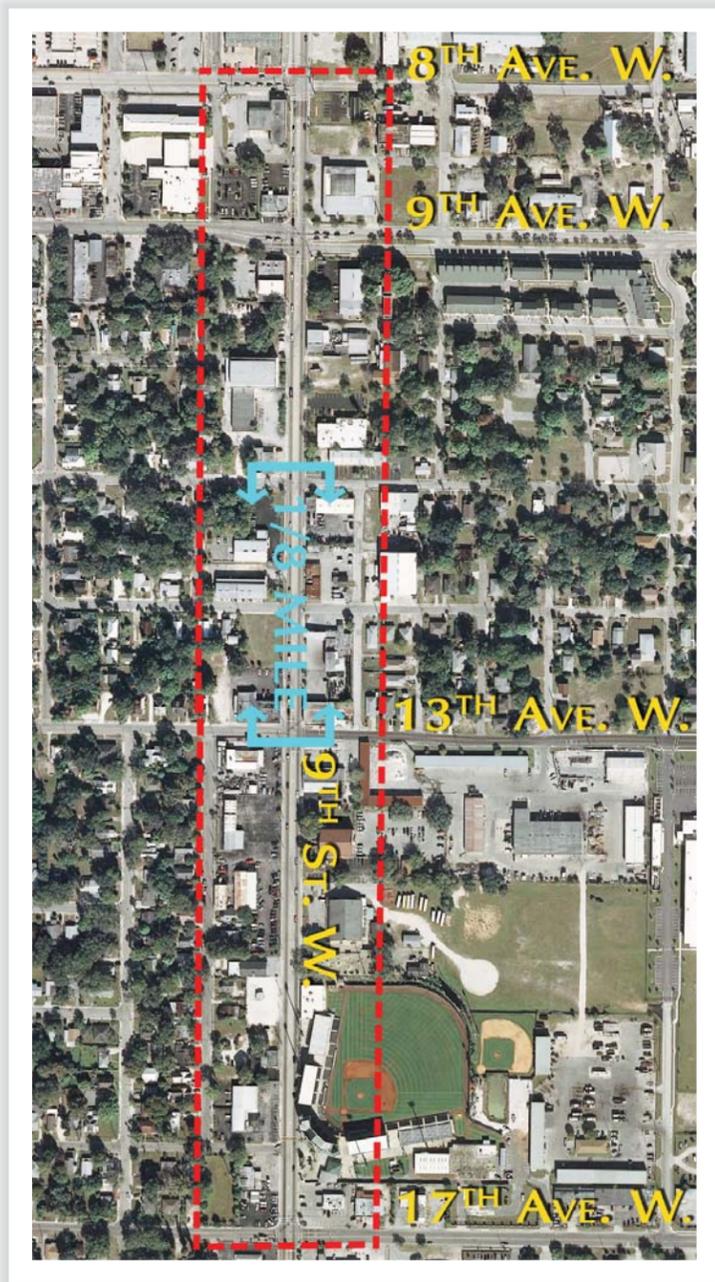
SECTION VIEW

Urban Commercial Corridors

9TH STREET WEST

This concept represents a section of 9th Street West from 8th Avenue West to 17th Avenue West. The proposed concept represents what it might look like with the Form-Based Code implemented through redevelopment.

- > Thoroughfare Type: Street
- > Right-of-way Width: 58'
- > Pavement Width: 42'
- > Transect Zone: T4-O
- > Tree Spacing: 15' OC Recommended
- > Planter type: Planting strips at verge and 40' median planting area at mid block



PLAN VIEW, T4-O CORRIDOR AFTER REDEVELOPMENT

Recommended Trees

- > **Canopy Trees**
  - American Sweetgum
  - Florida Elm
  - Red Maple
  - Southern Live Oak
  - Southern Magnolia
- > **Palm Trees**
  - Buccaneer Palm
  - Cabbage Palm
  - Florida Thatch Palm
  - Royal Palm
  - Silver Palm
- > **Understory Trees**  
*(implemented wherever conflicts prohibit the use of a canopy tree):*
  - Buttonwood
  - Dahoon Holly
  - Orange Geiger Tree



PERSPECTIVE VIEW

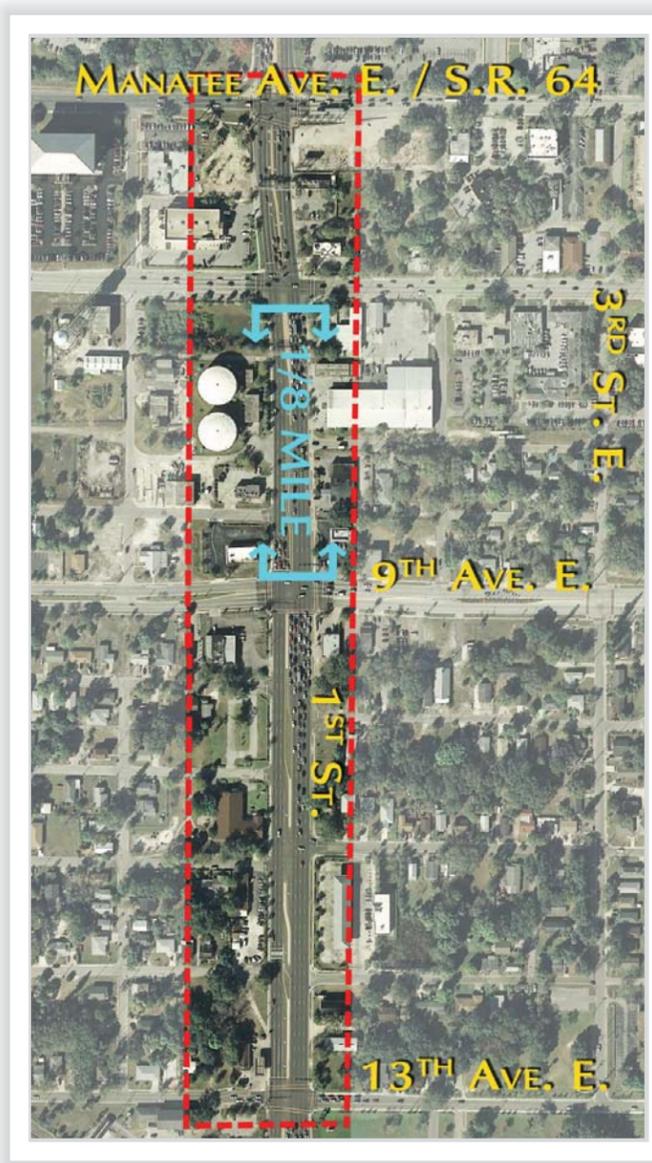


SECTION VIEW, TYPICAL ST-58-42

1ST STREET

This concept represents a section of 1st Street from Manatee Avenue East to 13th Avenue East. The proposed concept represents what it might look like with the Form-Based Code implemented through redevelopment.

- > Thoroughfare Type: Street
- > Right-of-way Width: 120'
- > Pavement Width: 77'
- > Sidewalk Width: 8'/12'
- > Transect Zone: T5
- > Tree Spacing: 30' OC, Average
- > Planter type: Tree wells or planting strip with opportunity for subsurface soil volume



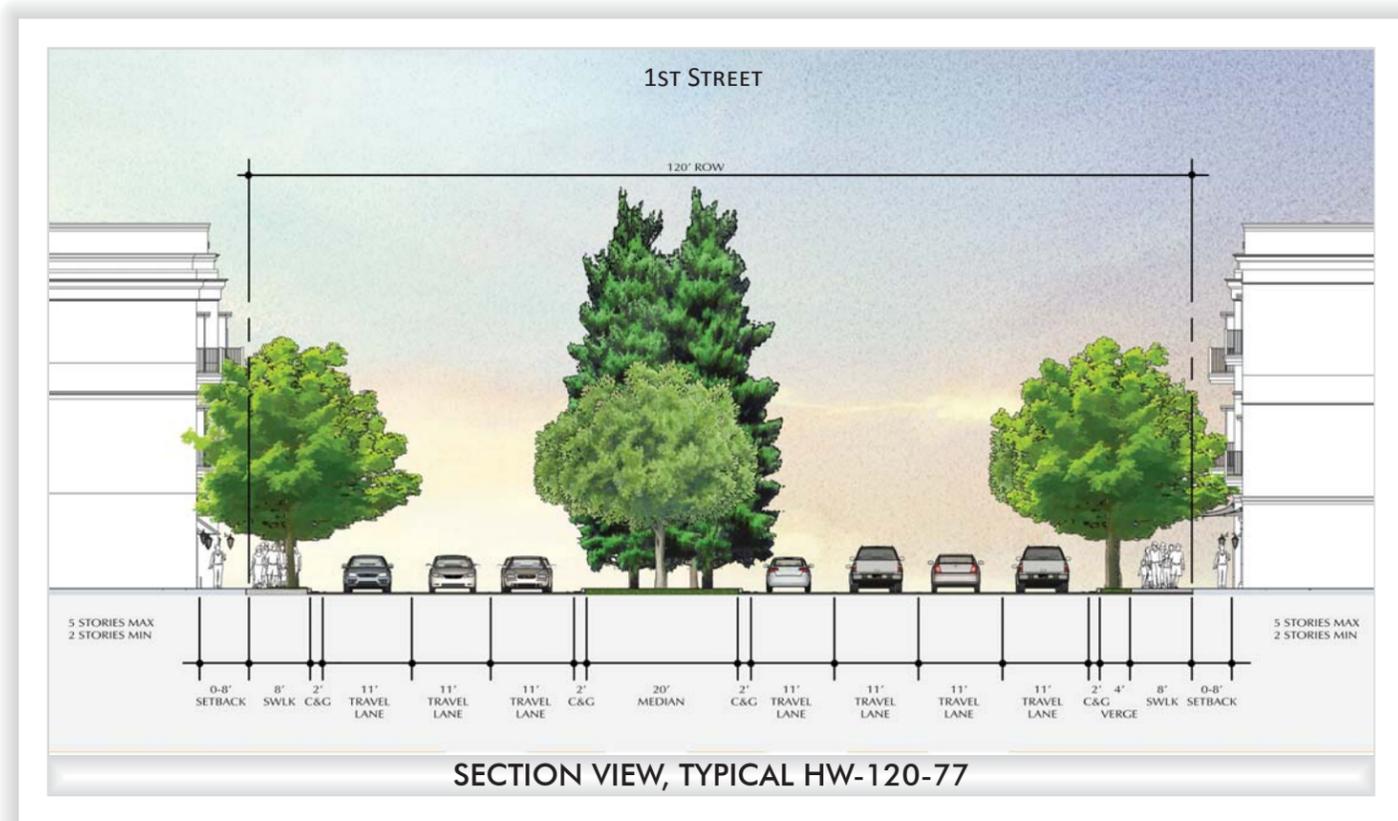
PERSPECTIVE VIEW



PLAN VIEW, T5 CORRIDOR AFTER REDEVELOPMENT

Recommended Trees

- > **Canopy Trees**
  - American Sweetgum
  - Bald Cypress
  - Florida Elm
  - Longleaf Pine
  - Red Maple
  - Slash Pine
  - Southern Live Oak
  - Southern Magnolia
  - Winged Elm
- > **Palm Trees**
  - Buccaneer Palm
  - Cabbage Palm
  - Paurotis Palm
  - Royal Palm
- > **Understory Trees** (implemented wherever conflicts prohibit the use of a canopy tree):
  - Buttonwood
  - Dahoon Holly
  - Fringe Tree
  - Orange Geiger Tree



SECTION VIEW, TYPICAL HW-120-77

# STREET TREE PALETTE

## STREET TREE PALETTE

The Street Tree Palette is directly referenced from the Tree Lists in the City of Bradenton Form-Based Code. The Street Tree Palette may be updated periodically. Please contact the City of Bradenton, Department of Planning and Community Development to obtain the current Street Tree Palette. For additional Tree information resources, see *References and Additional Resources* on page 21.

### RECOMMENDED TREE SPECIES

#### TREES

<i>Acacia farnesiana</i>	Sweet Acacia	<i>Persea borbonia</i>	Redbay
<i>Acacia pinetorum</i>	Pineland Acacia	<i>Pinus Elliottii</i>	Slash Pine
<i>Acer rubrum</i>	Red Maple	<i>Pinus Elliottii var. densa</i>	South Florida Slash Pine
<i>Bursera simaruba</i>	Gumbo Limbo	<i>Pinus palustris</i>	Longleaf Pine
<i>Capparis cynophallophora</i>	Jamaica Caper	<i>Pinus taeda</i>	Loblolly Pine
<i>Carya alba</i>	Mockernut Hickory	<i>Piscidia piscipula</i>	Jamaican Dogwood
<i>Carya aquatica</i>	Water Hickory	<i>Prunus serotina</i>	Wild Black Cherry
<i>Celtis laevigata</i>	Sugarberry	<i>Prunus umbellata</i>	Flatwoods Plum
<i>Cercis canadensis</i>	Eastern Redbud	<i>Quercus geminata</i>	Sand Live Oak
<i>Chamaecyparis thyoides</i>	Southern White Cedar	<i>Quercus laurifolia</i>	Laurel Oak
<i>Chionanthus virginicus</i>	Fringe Tree	<i>Quercus myrtifolia</i>	Myrtle Oak
<i>Chrysophyllum oliviforme</i>	Satin Leaf	<i>Quercus virginiana</i>	Southern Live Oak
<i>Citharexylum fruticosum</i>	Fiddlewood	<i>Quercus virginiana 'Highrise'</i>	Highrise Southern Live Oak
<i>Clusia rosea</i>	Pitch Apple	<i>Sideroxylon foetidissimum</i>	Wild Mastic
<i>Coccoloba uvifera</i>	Sea Grape	<i>Simarouba glauca</i>	Paradise Tree
<i>Conocarpus erectus</i>	Buttonwood	<i>Swietenia mahagoni</i>	Mahogany
<i>Cordia sebestena</i>	Orange Geiger Tree	<i>Taxodium ascendens</i>	Pond Cypress
<i>Diospyros virginiana</i>	American Persimmon	<i>Taxodium distichum</i>	Bald Cypress
<i>Ilex x attenuata 'East Palatka'</i>	East Palatka Holly	<i>Ulmus alata</i>	Winged Elm
<i>Ilex cassine</i>	Dahoon Holly	<i>Ulmus americana var. floridana</i>	Florida Elm
<i>Ilex vomitoria 'Pendula'</i>	Weeping Yaupon Holly	<i>Ximenia americana</i>	Hog Plum
<i>Ilex vomitoria 'Will Fleming'</i>	Will Fleming Yaupon Holly	<i>Zanthoxylum fagara</i>	Wild Lime
<i>Juniperus silicicola</i>	Southern Red Cedar	<b>PALMS</b>	
<i>Krugiodendron ferreum</i>	Black Ironwood	<i>Acoelorrhaphe wrightii</i>	Paurotis Palm
<i>Liquidambar styraciflua</i>	American Sweetgum	<i>Coccothrinax argentata</i>	Silver Palm
<i>Lysiloma latisiliqua</i>	Wild Tamarind	<i>Pseudophoenix sargentii</i>	Buccaneer Palm
<i>Magnolia grandiflora</i>	Southern Magnolia	<i>Rhapidophyllum hystrix</i>	Needle Palm
<i>Magnolia virginiana</i>	Sweetbay Magnolia	<i>Roystonea elata</i>	Royal Palm
<i>Malus angustifolia</i>	Southern Crabapple	<i>Sabal palmetto</i>	Cabbage Palm
<i>Morus rubra</i>	Red Mulberry	<i>Thrinax morisii</i>	Keys Thatch Palm
<i>Ocotea coriacea</i>	Lancewood	<i>Thrinax radiata</i>	Florida Thatch Palm

## MAINTENANCE GUIDELINES

### Recommended Tree Policies and Maintenance Guidelines

**A**n urban forestry maintenance program is invaluable to the health and safety of the urban forest. An overview of key policies and guidelines is provided below, however detailed information and procedures for each section should be further developed in an urban forestry maintenance program.

#### SELECTION

It is important to select the best quality tree, a Florida Fancy or Florida #1, per Florida Nurserymen's Grades and Standards. These standards apply equally to both field grown and container grown trees.

It is also very important to ensure trees selected do not have girdling roots. Girdling roots are often hidden and can eventually wrap around the trunk of the tree, essentially strangling it years down the road. This situation can occur in both field grown and container grown trees therefore trees should be selected from a grower that has demonstrated the capacity to establish good, healthy root systems, whether through balled and burlapped (B&B) field grown trees or properly managed container grown trees.

Field grown trees should be hardened off in the nursery for a minimum of 3-4 weeks. Hardened off means the trees have been held in the nursery after digging under optimum irrigation until new roots have begun to regenerate.

Roots Plus Growers (RPG) guarantees the best quality hardened off field grown tree available. All RPG trees are held until new roots develop and are ready to start growing into the landscape. Whether RPG/field grown trees or containerized trees are selected, careful attention to root management practices is recommended.

To ensure you are receiving the best quality trees as recommended above, your landscape architect should tag them at the nursery and further inspect them upon delivery to the project site.

#### TREE TRANSPLANTING

Project-specific tree mitigation notes should be provided for every project containing existing trees. These plans and specifications should be prepared by a registered landscape architect, ISA Certified Arborist, or Registered Consulting Arborist. In addition, transplanting should be performed by an ISA Certified Arborist or Registered Consulting Arborist with a minimum of five years experience transplanting and establishing trees of similar size and species.

# MAINTENANCE GUIDELINES

## PLANTING

One of the biggest mistakes that kill trees is planting them too deep. Many times, when you receive trees from the nursery they are already too deep, so an inch or two deeper on site often leads to a tree that is actually planted several inches too deep. In this condition, trees could survive several years and continually decline. Trees should be planted 1-2 inches higher on the project site than it was at the nursery. Other key things to look for are the trunk taper and the first lateral root. If the trunk taper is visible and the first lateral root is at or just below the surface, then the tree is at the proper depth. The project landscape architect should observe planting operations and inspect planting depths during and at the completion of every project.

## WATERING

Trees should be irrigated with automatic irrigation wherever possible. If irrigation is not available, watering bags such as Treegator, or a watering truck should be used throughout the establishment period. Below is a recommended watering schedule for establishment:

Week 1 – 8.....	5 times/week .....	25 gal/day
Week 9 – 12.....	3 times/week .....	25 gal/day
Month 4 – Year 3 .....	1 time/week.....	25 gal*

\*Watering amounts should also be implemented during drought periods and may vary due to the severity of the drought.

## WEED CONTROL

A regular maintenance program should be implemented for weed control and should, at a minimum, include:

- Pre-emergent herbicides applied in spring and fall
- Monthly (or as needed) weeding with approved herbicide such as Roundup
- Removal of all weeds by hand on a monthly basis

## MULCH

At a minimum, the following mulching guidelines should be applied:

- A three-inch layer of mulch should be maintained and replenished as needed for the first three years.
- Mulch shall be kept one foot away from the bases of all trees and palms.
- Mulch should be melaleuca, eucalyptus, or other sustainably harvested hardwood mulch.
- Supplemental mulch shall be of the same type and quality originally applied to the project.

## PEST CONTROL

Trees should be inspected regularly for pests and disease and treated appropriately. The Manatee County Extension Office could be a valuable resource for such a program.

## FERTILIZATION

Trees should be fertilized regularly (minimum of three times in first year), or as needed to maintain a healthy, growing condition free of symptoms of nutritional deficiency or undesirable appearance. Fertilizer content and frequency will depend on soil conditions and tree species. Refer to the Extension Office bulletin *Fertilization Recommendations for Trees and Shrubs in Home and Commercial Landscapes*.

## PRUNING

Improper pruning techniques have a dramatic and adverse effect on trees. Each tree species will have a different level of pruning intensity, especially during establishment. This section is intended to provide general guidance in the area of proper pruning techniques. It is recommended that strong consideration be given to the following:

- Pruning cuts shall be in accordance with **ANSI A300 pruning standards**.
- Remove dead and damaged branches/fronds.
- Young trees should be pruned to develop strong branching patterns.
- Thin interior of canopy to promote air circulation.
- Provide clearance above sidewalks and roadways to avoid pedestrian and vehicular conflicts.
- Prune throughout the year (as needed) to keep trees within desired limits.
- Reduce potential hazardous conditions.
- Do not 'lollipop' or 'lions tail'. These practices deform trees and reduce canopy that is vital to the health of the trees.
- Crape myrtles should be minimally pruned (if necessary). Seed heads can be removed to pencil sized wood to encourage stronger blooming, but should not be topped.
- Do not remove more than 20% of live foliage at any one time.
- Never cut the central leader.
- Prune palms yearly, or as needed.
  - Do not remove fronds growing horizontally or pointed upward, prune only from the 3-9 o'clock position.
  - Cut fronds as close to the trunk as possible.
  - Remove all inflorescences.

## FUNDING SOURCES

### Implementation

#### STATE AND FEDERAL FUNDING

- Florida Department of Transportation – Highway Beautification Grant
- Department of Agriculture – “America the Beautiful”
- Florida Forest Service – Small Business Administration
- Florida Department of Transportation – Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)
- Department of Community Affairs – Community Development Block Grant

#### LOCAL GOVERNMENT FUNDING

- Capital Improvement Program
- Local improvement districts
- Municipal funding
- City of Bradenton Woodbury Tree Fund
- Manatee County Tree Fund

#### PRIVATE FUNDING

- Community service groups and organizations
- Trusts and foundations
- Corporate and private donations
- Florida Urban Forestry Council

### Maintenance

#### STATE FUNDING

- Florida Department of Transportation – Highway Maintenance Agreements

#### LOCAL GOVERNMENT

##### Manatee County Operating Budget

- County employees and equipment
- Private sector – landscape maintenance companies

##### Municipality Operating Budget

- City employees and equipment
- Private sector – landscape maintenance companies

##### Sheriff’s Department Workforce

#### PRIVATE

##### Community Service Groups and Organizations

- Keep Manatee Beautiful
- Garden clubs, etc.

##### Local Businesses

- Adopt-A-Spot Program

## REFERENCES AND ADDITIONAL RESOURCES

- American Forests, [www.americanforests.org](http://www.americanforests.org)
- An Illustrated Guide to Pruning, Second Edition, Edward F. Gilman
- Best Management Practices: Tree and Shrub Fertilization, Companion publication to the ANSI A300 Standard for Tree, Shrub, and Other Woody Plant Fertilization
- Best Management Practices: Tree Pruning, Companion publication to the ANSI A300 Part 1: Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices, Pruning
  - City of Bradenton Form-Based Code
  - City of Bradenton Urban Forestry Master Plan, 1994
- Florida Department of Transportation (FDOT), Maintenance Rating Program, [www.dot.state.fl.us](http://www.dot.state.fl.us)
- FDOT Design Standards, Index No. 546 and Index No. 700, [www.dot.state.fl.us](http://www.dot.state.fl.us)
- Florida Urban Forestry Council, [www.fufc.org](http://www.fufc.org)
- Grades and Standards for Nursery Plants, Florida Department of Agriculture and Consumer Services
- Manatee County Extension Office, University of Florida IFAS Extension, <http://manatee.ifas.ufl.edu>
- Manatee County Urban Forest Canopy Analysis 2004 and 2009
  - Manatee County Urban Forestry Master Plan, 2005
  - Plant the Right Tree in the Right Place Guidelines, Florida Power and Light (FPL), [www.fpl.com](http://www.fpl.com)
  - Roots Plus Growers, [www.rootsplusgrowers.org](http://www.rootsplusgrowers.org)
- Up By Roots: Healthy Soils and Trees in the Built Environment, James Urban

# ACKNOWLEDGEMENTS

## BRADENTON CITY COUNCIL

Mayor – Wayne Poston  
Ward I – Councilman Gene Gallo  
Ward II – Councilwoman Marianne Barnebey  
Ward III – Vice Mayor and Councilman Patrick Roff  
Ward IV – Councilman Bemis Smith  
Ward V – Councilman Harold Byrd, Jr.

## DEPARTMENT OF PLANNING & COMMUNITY DEVELOPMENT

Timothy Polk, Director  
Ruth Seewer, Development Review Manager  
Karen Aihara, Executive Planning Administrator

## TREE AND LAND PRESERVATION BOARD

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Mary Runnells  
Frank Solinko  
William Swan III

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## ADOPTION BY CITY COUNCIL

September 28, 2011  
Resolution 11-56

