Approved _____ Mayor

Veto _____

Override _____

Amended

Agenda Item No. 12(A)(2)

03-06-07

OFFICIAL FILE COPY
CLERK OF THE BOARD
OF COUNTY COMMISSIONERS
MIAMI-DADE COUNTY, FLORIDA

RESOLUTION NO. R-231-07

RESOLUTION ADOPTING THE MIAMI-DADE COUNTY STREET TREE MASTER PLAN

WHEREAS, this Board desires to accomplish the purposes outlined in the accompanying memorandum, a copy of which is incorporated herein by reference,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA, that this Board hereby approves the Miami-Dade County Street Tree Master Plan in substantially the form attached hereto and made a part hereof, and authorizing the County Mayor or his designee to exercise the provisions contained therein.

The foregoing resolution was offered by Commissioner Rebeca Sosa, who moved its adoption. The motion was seconded by Commissioner Dorrin Rolle and upon being put to a vote, the vote was as follows:

Bruno A. Barreiro, Chairman	aye		
Barbara J. Jordan, Vice-Chairwoman	aye		
Jose "Pepe" Diaz	aye	Audrey M. Edmonson	aye
Carlos A. Gimenez	aye	Sally A. Heyman	aye
Joe A. Martinez	aye	Dennis C. Moss	aye
Dorrin D. Rolle	aye	Natacha Seijas	aye
Katy Sorenson	aye	Rebeca Sosa	aye
Sen. Javier D. Souto	aye		

The Chairperson thereupon declared the resolution duly passed and adopted this 6th day of March, 2007. This resolution shall become effective ten (10) days after the date of its adoption unless vetoed by the Mayor, and if vetoed, shall become effective only upon an override by this Board.

MIAMI-DADE COUNTY, FLORIDA
BY ITS BOARD OF
COUNTY COMMISSIONERS

HARVEY RUVIN, CLERK

By: KAY SULLIVAN
Deputy Clerk

Approved by County Attorney as
to form and legal sufficiency.

Robert A. Duvall

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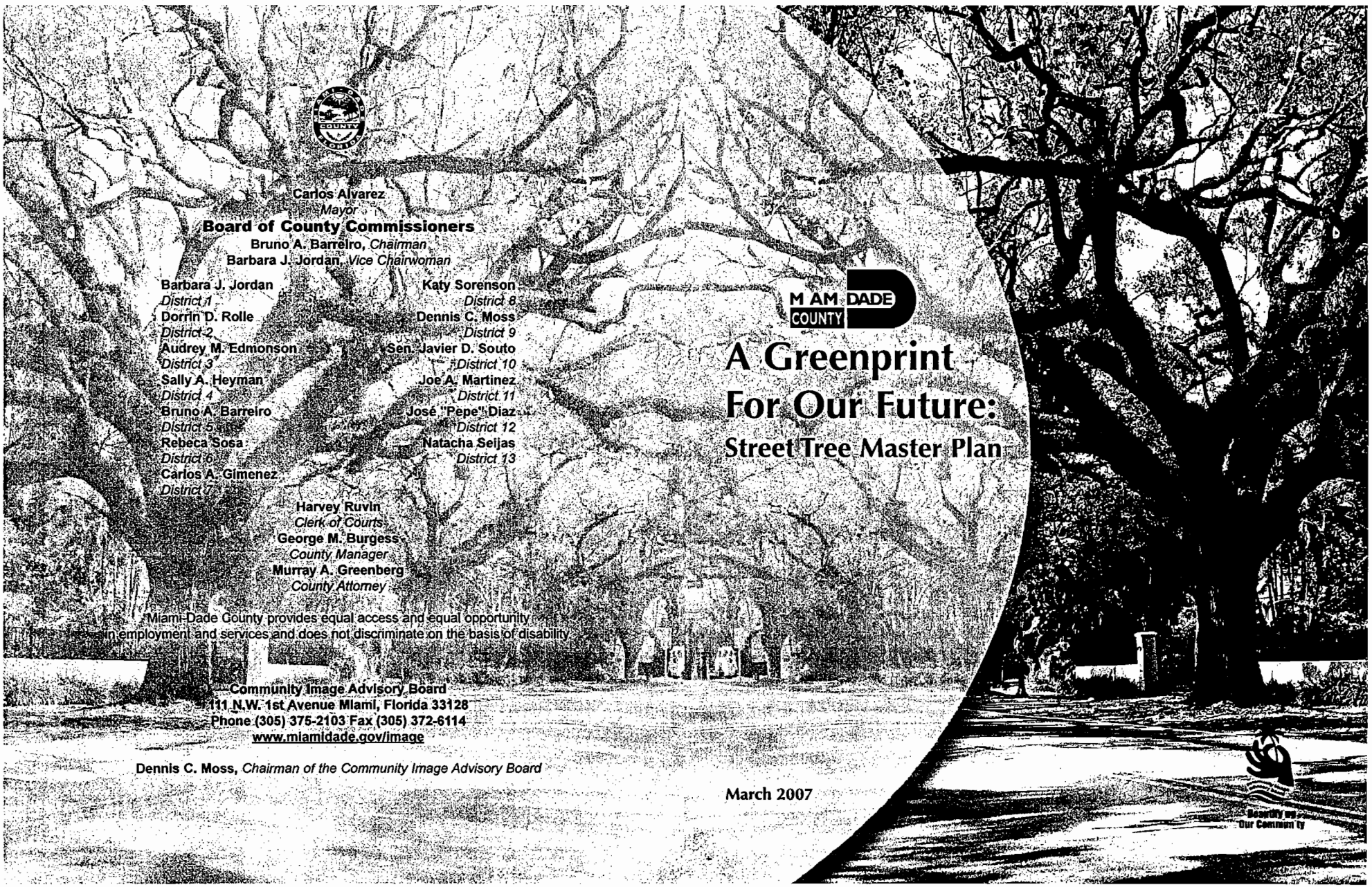

Carlos Alvarez
Mayor

Board of County Commissioners

Bruno A. Barreiro, *Chairman*
Barbara J. Jordan, *Vice Chairwoman*

Barbara J. Jordan
District 1
Dorrin D. Rolle
District 2
Audrey M. Edmonson
District 3
Sally A. Heyman
District 4
Bruno A. Barreiro
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Sen. Javier D. Souto
District 10
Joe A. Martinez
District 11
José "Pepe" Diaz
District 12
Natacha Seijas
District 13

Harvey Ruvin
Clerk of Courts
George M. Burgess
County Manager
Murray A. Greenberg
County Attorney

Miami-Dade County provides equal access and equal opportunity in employment and services and does not discriminate on the basis of disability.

Community Image Advisory Board
111 N.W. 1st Avenue Miami, Florida 33128
Phone (305) 375-2103 Fax (305) 372-6114
www.miamidade.gov/image

Dennis C. Moss, *Chairman of the Community Image Advisory Board*

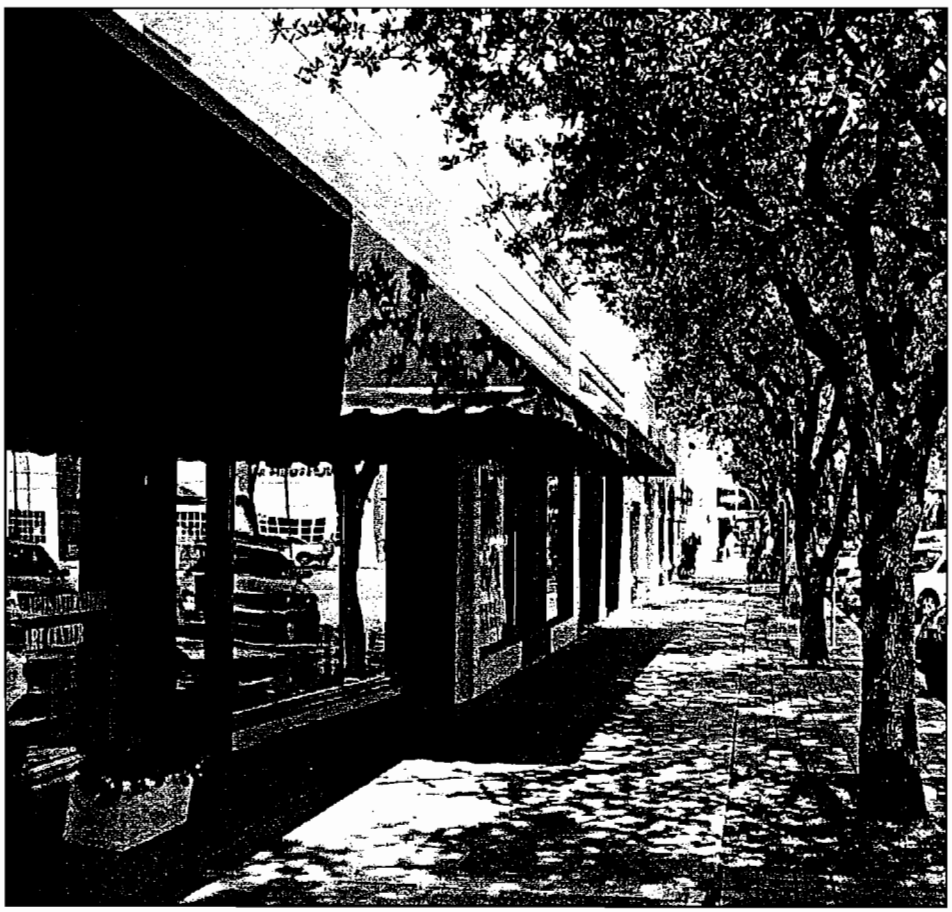
MIAMI DADE COUNTY

A Greenprint For Our Future:

Street Tree Master Plan

March 2007

Beautify our Community



Street Trees along Miracle Mile, Coral Gables, Florida

The Street Tree Master Plan is dedicated in memory of
JOSE R. BACALLAO
whose persistence and guidance motivated County staff
during its early development.

Acknowledgements

This document has been a collaborative work by the Community Image Advisory Board (CIAB) and its member agencies, the Department of Environmental Resources Management (DERM), Public Works Department, Planning and Zoning, Consumer Services (Cooperative Extension), Office of Strategic Business Management, Park and Recreation, Team Metro, and the Metropolitan Planning Organization and the Office of the County Manager, coordinating with Fairchild Tropical Botanic Garden and the Cities of Miami and Miami Beach, Grove Tree Man Trust, Treemendous Miami, and the Tropical Flowering Tree Society. Special thanks go to Dr. Edward Gilman, Professor, Environmental Horticulture Department, University of Florida and Georgia Tasker, Miami Herald .

Special thanks to the following people that have contributed photos for the Miami-Dade Street Tree Master Plan:

Dr. Ed Gilman, University of Florida
http://orb.at.ufl.edu/FloridaTrees/index.html

Dr. David Lee, Florida International University
http://bio.fiu.edu/trees/

Miami-Dade County http://www.miamidade.gov
Alyce Robertson, Office of the County Manager
Luis Espinosa, Department of Environmental Resources Management

Institute for Food and Agricultural Sciences (IFAS) http://www.ifas.ufl.edu

A Greenprint for Our Future:

Miami-Dade County Street Tree Master Plan

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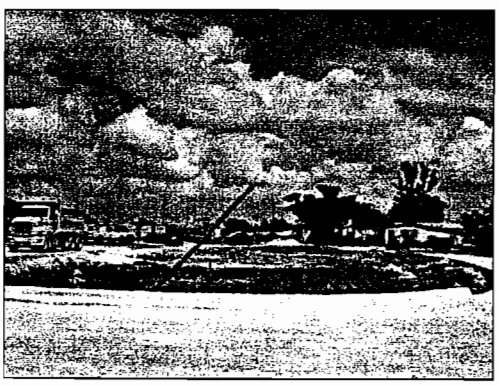


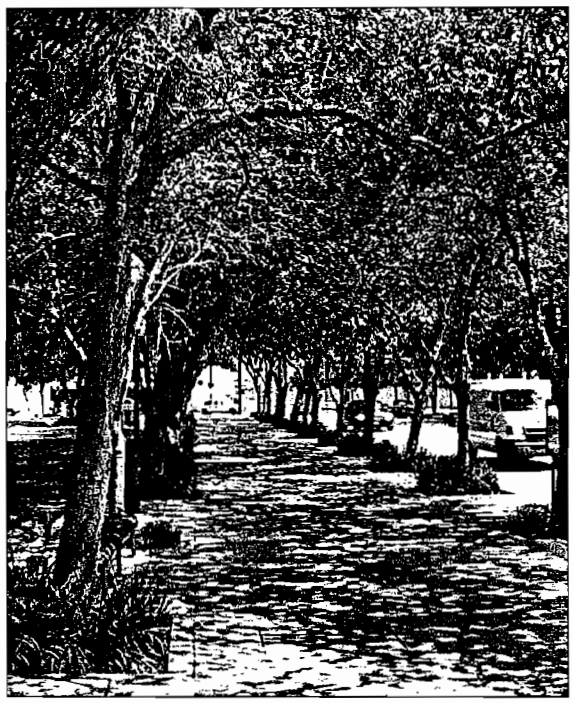
Before

After

A Greenprint for Our Future:
Miami-Dade County Street Tree Master Plan

Executive Summary

The urban forest is stressed in many cities around the country, but in Miami-Dade County our urban trees are in critical condition. A number of factors have contributed to the diminished tree cover in Miami-Dade, but the problem became even more significant after the tree destruction by the 2005 hurricanes, Katrina, Rita, and Wilma. Hurricanes and windstorms do not account for the entire deficit in tree cover. Further causes include development activities, increased impervious areas, and the removal of trees due to citrus canker.



Adequate tree canopy is vital to the environmental and economic well being of our community. Trees save money on our electric bills by shading homes, offices, and streets, resulting in a reduced need for the use of air conditioning. Trees reduce storm water runoff by intercepting rainfall through their leaves and branches and releasing it slowly and also actively removing water from the soil. National studies indicate that trees increase property values by 5-15 percent and make communities more visually and environmentally appealing. Trees improve air quality by absorbing pollutants and particulate matter from the air. Trees shade pavement and reduce air temperatures and the urban heat island.

In addition to what we traditionally think of as the benefits of trees, recent studies have also shown a positive correlation between trees and social benefits and quality of life indicators, including the reduction of reports of physical violence in public housing that had trees outside the buildings and significantly better relations and stronger ties between neighbors (Kuo and Sullivan, University of Illinois). Research also shows that consumers are willing to shop longer and spend more in retail areas that have trees because trees provide a "human habitat" (Wolf, University of Washington).

With all the known benefits of trees, why is our urban tree canopy in critical condition? There is not a simple answer. A healthy urban forest has many challenges. Active attention is needed by several segments of the community to reverse the decline. The Street Tree Master Plan focuses on policies and practices that result in reduction to the tree canopy and then sets the course to reverse the trend. The Plan establishes policy direction to begin management of Miami-Dade County's urban tree resources as a necessary priority. The Plan calls attention to the green infrastructure to address the concerns of trees along our streets and highways. The Plan describes the procedures for planting and maintenance of street trees throughout Miami-Dade County and encourages partnerships with municipalities for the countywide implementation of the Plan for a greener, more livable community.

The mission of the Miami-Dade County Street Tree Master Plan is to provide the framework to design and implement street tree plantings that complement the purpose and intent of the

11

Landscape and Tree Ordinances and to be used as minimum standards in order to enhance the County tree canopy to a minimum of 30 percent coverage, countywide by 2020.

Goals of the Street Tree Master Plan

- Plant quality trees in public rights of way
- Develop and execute a Tree Management Plan to craft sustainable tree structure
- Promote the design of urban spaces that adequately fit trees
- Encourage local growers to produce the quality and species for public rights-of-way
- Educate policy makers and the public on the importance of adequate tree canopy
- Promote the expansion of the overall canopy in Miami-Dade County to at least 30 percent by 2020. This target reflects both the initiatives of the Street Tree Master Plan and other canopy restoration efforts in Miami-Dade County to create a greener, more walkable, livable community.

The Street Tree Master Plan will accomplish the "greenprint" goals by:

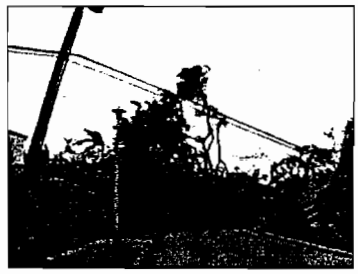
- establishing a street tree working group
- educating Miami-Dade citizens on tree canopy issues
- promoting "right tree, right place"
- inventorying the condition of Miami-Dade street trees
- researching historical habitat and ecology
- developing guidelines for maintenance of the green infrastructure on par with the gray infrastructure

Healthy street trees play an integral role in supporting the County's urban shade "canopy," which contribute greatly to lower ambient air temperatures, increase aesthetic enjoyment, provide economic improvement, improve the quality of life, and enhance the historic characteristics of our community. A shady, tree-lined street is more walkable, especially in the summer months in South Florida.

The Street Tree Master Plan is guided by an overall vision to restore and enhance the County's tree canopy into a thriving urban forest that provides multiple aesthetic and environmental benefits. The Miami-Dade County Street Tree Master Plan, the Miami-Dade County Landscape Manual, and the proposed Best Management Practices are designed to support the vision by providing a "greenprint" for the appropriate planning, implementation, and management of our existing and planned tree resources.

A Greenprint for Our Future

Introduction



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Adequate tree canopy is vital to the environmental and economic well being of our community. Trees **save money on our electric bills** by shading homes, offices, and streets, resulting in a reduced need for the use of air conditioning. Trees **reduce storm water runoff** by intercepting rainfall through their leaves and branches and releasing it slowly and also actively removing water from the soil. National studies indicate that **trees increase property values** by 5-15 percent and make communities more visually and environmentally appealing. Trees **improve air quality** by absorbing pollutants and particulate matter from the air. Trees shade pavement and **reduce air temperatures.**

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Additional tree benefits:

- ✓ **Contribute to the processes of air purification, oxygen regeneration, and ground water recharge.**
- ✓ **Aid in the abatement of noise, glare, heat, air pollution and dust generated by major roadways and intense use areas.**
- ✓ **Protect and buffer the effects of high winds on structures, i.e. "wind break".**
- ✓ **Reduce local air temperatures and the urban heat island effect, where temperatures in cities are higher than surrounding suburban and rural areas due to paved and dark surfaces that absorb and store energy.**
- ✓ **Improve the aesthetic appearance of commercial, industrial, and residential development and complement urban redevelopment by protecting and increasing property values within the community.**
- ✓ **Promote physical and emotional well being by providing a connection with nature.**
- ✓ **Calm traffic when planted in traffic circles, bulb-outs and medians**
- ✓ **Make neighborhoods more livable.**
- ✓ **Promote public health and well-being by improving the pedestrian environment by providing shade and creating a setting conducive to walking and non-motorized transportation.**
- ✓ **Establish community identity, character and linkages.**

Tree Canopy in Miami-Dade County

Background

With all the positive benefits, one would assume that tree canopy would be a priority for Miami-Dade County. A 1996 analysis by the non-profit organization American Forests, in partnership with Miami-Dade County, determined that the tree canopy cover in unincorporated Miami-Dade County averaged only about 10 percent with some municipalities showing as little as one to two percent tree coverage. The average metropolitan area in the United States has a tree canopy of 33.4 percent. Optimal urban canopy coverage is considered to be 40-45 percent. In addition, the existing canopy consists of a high percentage of non-native invasive species and inferior quality trees, some of which threaten natural areas or are hazards in windstorms. There is a disconnect between knowing that adequate tree canopy is essential for the livability of our community and the number of the public policies that are currently in place. It is important to note that seven municipalities have taken the lead with their tree policies and earned Tree City USA recognition: Aventura, Coral Gables, Miami, Miami Gardens, Miami Springs, North Miami, and North Miami Beach.

When gray infrastructure wins over green

Historically, the green infrastructure in our community has taken a back seat to the gray infrastructure (roads, buildings, impervious surfaces). The increase in frequency of hurricanes throughout Florida in recent years has brought the issue of public tree policies to the forefront. There are many excellent resources for tree education in South Florida; however the consistent application of state-of-the art urban tree planting and management techniques lags behind the science. We know that not all trees are good trees for South Florida. We also know that many quality trees have been planted in the wrong places and they have been pruned improperly. After the storms of 2005, a Tree Summit was held to discuss what led to tree failures: not enough root space, inferior quality trees, and improper maintenance and pruning were the main culprits. A Category 5 storm will bring massive tree destruction; however the damage from smaller hurricanes can be reduced by implementing comprehensive tree health policies and thereby returning the usability of roadways much quicker after a storm. Bringing the policies to meet the science is essential to mitigate damage from storms, but also to establish adequate tree coverage to enhance the quality of life in Miami-Dade County.

The Street Tree Master Plan establishes policy direction to begin management of Miami-Dade County's urban tree resources as a necessary priority. It manages the green infrastructure to address the concerns of trees along our streets and highways and to provide a reference for urban street tree resources. The Plan describes the procedures for planting and maintenance of street trees throughout Miami-Dade County and encourages partnerships with municipalities for the countywide implementation of the Plan for a greener, more livable community.

Healthy street trees play an integral role in supporting the County's urban shade "canopy," which: contributes greatly to lower ambient air temperatures, increases aesthetic enjoyment, provides economic

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The Plan is guided by an overall vision to restore and enhance the County's tree canopy into a thriving urban forest that provides multiple aesthetic and environmental benefits. The Miami-Dade County Street Tree Master Plan, the Miami-Dade County Landscape Manual, and the proposed Best Management Practices are designed to support the vision by providing a "greenprint" for the appropriate planning, implementation, and management of our existing and planned tree resources. The Plan complements the efforts of other County agencies to green our community. These efforts include the Open Space Master Plan by the Park and Recreation Department and the Miami-Dade County Typical Section and Zoned Right-of-Way Update Study funded by Metropolitan Planning Organization and coordinated by the Planning and Zoning Department.

MISSION

The mission of the Miami-Dade County Street Tree Master Plan is to provide the framework to design and implement street tree plantings that complement the purpose and intent of the Landscape Ordinance and to be used as minimum standards in order to enhance the County tree canopy to a minimum of 30 percent coverage, countywide by 2020.

Goals of the Street Tree Master Plan

- Plant quality trees in public rights of way
- Educate policy makers and the public on the importance of adequate tree canopy
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Urban Tree Challenges

- **Improper pruning, lack of maintenance:** The lack of maintenance or improper maintenance including pruning, fertilization, mulching, and replacement of trees that have died, become a hazard, or are in a state of decline. Topping and excessive pruning practices such as "hatracking" or "lion-tailing" lead to mortality in urban trees. "Hat-racking" is illegal in Miami-Dade County under the landscape and tree code. Contrary to popular belief, "Hatracking" actually makes a tree more hazardous in high winds by replacing strong limbs with weak ones that will break off in subsequent years. Many trees are pruned by yard services and maintenance contractors without the proper training or arborist certification. Misconceptions about correct pruning methods and frequency of pruning have created a need for educating both the public and landscaping businesses. The information is available on the web (http://hort.ifas.ufl.edu/woody/pruning), in books, pamphlets produced by the Cooperative Extension office and the International Society of Arboriculture, and at education programs but many people do not avail themselves to this information.

Bad Practice: Hatracked Tree

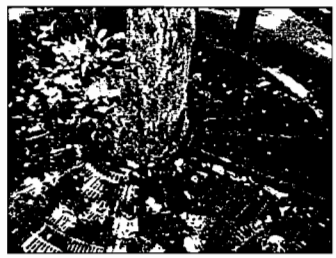
- **Planting the wrong tree in the wrong place:** Urban areas frequently have limited space for roots and canopy due to power lines and other utilities, signs, water requirements, poor or sometimes excessive drainage, and paving. These conditions cause the stress that is most often the cause of tree mortality in commercial/industrial areas. Historically, fast-growing trees, trees with an inexpensive purchase price that were Florida Grade #2 or cull, which are inferior quality, also found their way into the public rights-of-way. Some of these street trees are messy (black olive) or have low wind tolerance (*Ficus benjamina*) which can erode public support for street trees. Even quality trees and native species need room and proper soil conditions to grow.

Invasive exotic tree, too close to building and power lines

- **Hurricanes and other windstorms:** As the frequency and strength of hurricanes and windstorms have increased in Florida, the media and general public often focus on tree failures. Taking a closer look, there are lessons to be learned from previous hurricanes. It is difficult to educate the public on all the nuances of trees. The power outages, tree damage, and the time and costs of clean-up have many South Florida residents leery of trees. In fact, certain species of well-placed trees can actually serve as a wind block and protect property. Inferior quality trees, trees with overly dense canopies, trees that have been "hatracked" (hatracking is a big cause of overly dense canopy), can split or lose large limbs during strong winds. Prevention efforts such as species selection can impact the survivability of a tree. Furthermore, brittle or shallow rooted trees can blow over at low wind speeds. Trees that are professionally pruned fall less than unpruned trees. Increased reports of illegal tree removal or "hatracking" often follow storm events where tree "experts" damage the tree for future storms.

Shallow roots, too small space

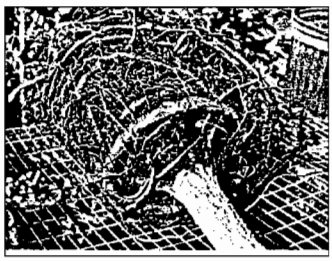
- **Traffic Setbacks and Liability Concerns**: Often the setback requirements in the public rights-of-way are so restrictive that trees cannot be planted and limits the selection of tree species. Miami-Dade County is taking a hard look at sight distance triangles, traffic speed, pedestrian safety and other issues that may enhance opportunities for tree placement.



Bad Practice: Tree Grate Girdling Tree

- **Poor Planting**: Improper planting, rough handling, girdling from staking, tree grates, and weed-eaters as well as planting poor quality trees are other reasons for high mortality of urban trees.

- **Lack of water and post planting care**: Recently planted trees as well as older trees under drought stress need to be watered to prevent decline.



Defective Roots: Circling

- **Root defects on nursery stock:** Roots that circle, girdle, kink, and other root defects in nursery stock doom a tree before it goes into the ground.

- **Chemicals**: Misuse of lawn treatment chemicals, herbicides and other chemicals that leach into the root zone or are absorbed through the bark, can adversely impact tree root systems, causing defoliation or general decline and death.

- **Inferior soil**: Extensive areas of compacted fill or road base soils and utility construction often are unsuitable for healthy root system growth and development. Likewise amending the soil solely around the root ball may lead to circling roots rather than encouraging the roots to reach further out to establish a stable root system.

- **Construction Damage:** Mechanical damage from construction equipment, crushing of near surface roots from heavy machinery and practices such as trenching through roots and paving over the root zone will cause decline and often mortality in urban trees.

- **Bark Damage**: Young as well as old trees often fall victim to being girdled by lawnmowers and string trimmers. Tree straps and stakes not removed in a timely basis and car bumpers can damage the bark.

- **Vandalism**: Vandalism such as graffiti painting, damaging the bark by carving, nailing, stapling, and other physical abuses.

- **Confusing regulatory and maintenance environment and inconsistent tree policies between departments and outside agencies**: There are a number of tree planting and protection measures in place within the county and municipalities. How the regulations interface can be complicated to laypersons not familiar with tree species and tree science. The regulatory environment varies depending on location. In addition, who does tree planting and maintenance activities along a given roadway depends often on the size of the roadway and whether the governmental agencies have maintenance agreements in place with other agencies.

- **Air pollution:** Air pollution can affect trees by damaging foliage and impairing processes such as photosynthesis, thus impacting a tree's health and making it more susceptible to insect damage and disease.

- **Invasive, non-native species:** Invasive, non-native species cause environmental damage by invading native plant communities and disrupting natural processes. Many landscape plants are not a problem for our natural resources. However, a few are so invasive that they have completely overrun natural forests and crowded out rare and unique plants found nowhere else in the world. It is costly to the County to protect our natural areas from these invasive pest plants. Residents and businesses can help by avoiding plants that are known to be invasive. Prohibited plant species are listed in the November 1999 Comprehensive Development Master Plan (CDMP), as amended which are demonstrably detrimental to native plants, native wildlife, ecosystems, or human health, safety, and welfare.

Invasive Exotic Melaleuca Tree

Meeting the Goals of the Miami-Dade County Street Tree Master Plan

The Street Tree Master Plan was developed by an ad-hoc working group. It is recommended that a permanent street tree working group be established as a committee of the Community Image Advisory Board (CIAB) with representation from the Office of Community Image, the Department of Environmental Resources Management (DERM), Public Works Department, Planning and Zoning, Consumer Services (Cooperative Extension), Office of Strategic Business Management, Park and Recreation, Team Metro, Office of Emergency Management (OEM), and the Metropolitan Planning Organization, and the seven municipalities who have achieved "Tree City USA" designation, with Florida Power and Light (FPL) and local nursery growers. This street tree working group will be responsible for the implementation, monitoring, and maintenance activities described in the Master Plan. Over time, as advances in tree science and intergovernmental cooperation progresses during implementation, the tree species list in Appendix A, the contact information in Appendix C, and the task list in Appendix D may require revisions. These changes will be reviewed and amended as necessary by the CIAB and reported to the BCC during the annual report.

Maintenance of existing and newly planted street trees are essential activities that protect State, County, and municipal investments and lessen the cost of liability, while ensuring that the street tree population thrives and achieves desired aesthetic and environmental functions. However, like most maintenance activities, an on-going commitment of resources is needed to maintain the green infrastructure. Preventative pruning for windstorm resistance, structural pruning, and tree fertilization extend the life expectancy of street tree investments.

How can we improve our street tree practices?

Planning

- Provide a baseline study to determine the current state of the urban tree canopy and update the information as trees are planted and removed with a canopy analysis every 10 years to measure progress towards the canopy goal and place utilities away from trees.

- Inventory Conditions of Miami-Dade Street Trees. The Public Works Department will expand the County's present inventory of street tree plantings from 1992-2006 to include information such as "treatment required" (removal, structural pruning, raising, reduction, cleaning, fertilizing, sidewalk repair, estimate of time required for this treatment), size, date planted, species and condition/structure of trees, empty spaces where trees can be planted, size of space. This database will continue to be refined and updated with the use of GIS tools and shall incorporate all existing street trees. In the future, it is envisioned that the GIS database will be able to assist planners in expanding the biodiversity of the urban forest in planning design activities.

- Expand the Role of the County Landscape Committee. The County Landscape Committee is appointed by the County Manager and currently reviews right-of-way plantings on County maintained roadways and coordinates the Joint Participation Agreements with the Florida Department of Transportation. It is recommended that the Manager expand the role of the County Landscape Committee to oversee the status of the urban tree canopy and provide a forum for departmental input in the implementation of the Street Tree Master Plan. As mentioned earlier, multiple departments are involved in street tree issues within

Miami-Dade County. The Landscape Committee will coordinate cross departmental activities and work with BCC members to identify areas of critical concern for lack of tree canopy.

- Coordinate and expand on the success of the Adopt-a-Tree Program goals:
  - ✓ Reforest Miami-Dade County
  - ✓ Educate the public on the significance of urban tree canopy in flood protection, erosion control, energy use, air quality, community aesthetics, and a cost benefit analysis.
  - ✓ Teach the public how to properly plant and care for trees, especially when pruning.
  - ✓ Coordinate with Miami-Dade County municipalities to implement program activities within their municipal boundaries.
  - ✓ Implement a multilingual educational component addressing appropriate placement, planting procedure and long-term maintenance of the restored canopy.
  - ✓ Utilize plant material from local nurseries whenever possible so that it is locally adapted.
  - ✓ Improve the locally available tree stock by teaching the nurseries to grow high-quality new species.
  - ✓ Reinforce and expand upon partnerships with local environmental, educational, and community groups.
  - ✓ Seek additional matching funds and sponsorships to expand program efforts.
  - ✓ Limit the administrative costs associated with the program.

- Miami-Dade County will encourage dialogue and involvement of residents, municipalities, home owners associations, property owners, as well as coordination between all parties involved in street tree design and management.

- Coordinate activities with the Community Image Advisory Board to enhance landscaping on selected corridors and entryways in Miami-Dade County.

- Link urban and suburban environments with parks and natural areas. Identify and support a network of connectivity, through street planting, that complements greenway and blueway (paddling trail for non-motorized watercraft e.g. canoe or kayak) planning and implementation.

- Use street trees as a traffic calming device to support safe sidewalks and street crossings for school children and pedestrians in general.

- Encourage urban planning efforts to include the design of pedestrian friendly environments. Encourage provisions of wide sidewalks with sufficient space for trees where appropriate, in public design projects. Design the soil space under and adjacent to the hardscape to sustain root growth – good trees well connected to the ground only develop if the roots have room to grow.

- Work with study group for the Miami-Dade County Typical Section and Zoned Right-of-Way Update Study.

- Map and prioritize removal of hazardous street trees and replant where appropriate and develop a program for the selective replacement of undesirable species that may be brittle, invasive or not appropriate for rights-of-way plantings due to fruit drop or invasive roots. Tree replacement would focus on less problematic species listed in the Street Tree Master Plan.

- Prevent the destruction of the community's existing street tree canopy and specimen sized-trees and protect designated historic landscapes and tree resources.

- Emphasize the use of hardwood shade trees for canopy restoration while using palms as accent plants in public plantings. While palms are aesthetically pleasing and look "tropical," they do not provide the same environmental benefits, walkable streets, or lower ambient temperatures as hardwood shade trees.

Planting

- Plantings will be coordinated with other departments and agencies such as Florida Department of Transportation (FDOT), utility companies; the Miami-Dade Public Works and Water and Sewer (WASD) Departments, and municipalities in order to avoid project conflicts with tree installations.

- Identify and plant in areas that have low canopy coverage. Encourage planting on private property in the form of setback plantings, which contribute to the streetscape.
- Develop a cost-share program whereby a resident can select and purchase trees and have the County or a designated private contractor buy, plant, and stake the trees for the resident on the public right-of-way. As a part of this program, the resident would agree to assume the maintenance responsibility for the trees.
- Improve the street tree inventory by planting trees that are wind tolerant species in the public right-of-way and protect existing inventory by proper maintenance trimming. By improving the survivability of street trees during wind storms, the public investment is protected but also will reduce road debris and hasten power restoration after a storm event.
- Provide a list of recommended street trees (See Appendix A) to give guidance to citizens and governmental agencies regarding which tree species survive better in harsh conditions for street trees, especially in swale areas. Median trees may offer more flexibility of species depending on the size of the planting area.
- Plant street trees that minimally meet Florida Grades and Standards Grade #1 standards (Chapter 18A-6 (k) of the Code of Miami-Dade County, Florida) and execute a pruning program to encourage structural pruning to develop sustainable structure less sensitive to wind damage.
- Increase biodiversity through the appropriate use of native tree species in the landscape.
- Coordinate the tree planting, permitting, removal and enforcement of all municipalities and County agencies and promote countywide cooperation in the restoration of canopy within Miami-Dade County.

Bad Practice:
Lions tailing, shaping

Pruning

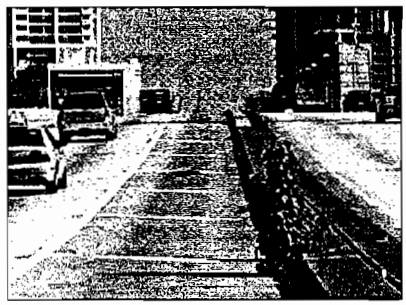
- Institute a structural pruning program on a 3-year pruning cycle to maintain the existing inventory as well as new plantings to ensure long-term sustainability. Trees that had been over lifted, lions tailed, shaped, and/or lacked structural pruning were the cases of many tree failures during the 2005 hurricanes.
- Explore the creation of a training and regulatory program for tree pruning operations.

Education and Growth

- Educate the public, local decision-makers and agency staff on the importance of the urban tree canopy and tree canopy enhancement education in the schools.
- Establish stewardship of the existing legacy of mature trees and effective planning for future planting and maintenance needs.
- Promote the use of trees for energy conservation by encouraging cooling through the provision of shade and the channeling of breezes, thereby helping to offset global

warming and local heat island effects through the added absorption of carbon dioxide and reduction of heat islands.

- Emphasize the use of native trees in place of invasive or non-native species to reduce the negative impacts of these species to native plant communities. Encourage local growers to produce the trees the species and quality for public plantings.



- Promote the concept of building sites to sustain the right tree, planting the right tree or plant in the right place to avoid damage to infrastructure such as clogged sewers, cracked sidewalks, and power service interruptions.

- Establish seed or vegetative sources for contract growing of rare and endangered species and use native species listed as "threatened" or "endangered" where feasible and appropriate.

- Encourage re-establishment, restoration, and replanting of historic ecological community associates and geographic conditions with the original native species (hardwood hammocks, pine rocklands etc.) where feasible or appropriate for current conditions.

- Research Historical Habitat and Ecology. Research of historical conditions should be accomplished by using appropriate maps, surveys, and accounts to document what vegetation originally existed in sites to be planted. The historical physical conditions of the site (including geomorphology, topography, soils, hydrology, and vegetation) should be researched to compare historical and current conditions in order to determine whether restoration/re-creation of historic plant communities is appropriate. In many cases, existing conditions may not support historical plant species due to alterations of soil and hydrolological conditions during construction of the right-of-way, however, in other cases, plant species that existed in certain geographic areas fare better when planted in the same geographical area. An example would be coastal species that thrive with high salinity conditions or mahogany trees, while natives do better and are less brittle in far south Miami-Dade County. Bringing back native species into their historical conditions can also save time and money in maintenance activities.

- Develop Guidelines for Rare, Threatened or Endangered Tree Species. After determining the historical conditions of a given site and opportunities, constraints for restoration, locations and sources of seeds/vegetative material need to be identified within the historical growth range of the species. Propagation material should be collected without damaging the existing seed/vegetative material on site. All permits and permissions should be secured and locations and seed sources kept separate and documented. Propagation and experimental growth methodologies need to be developed for many of these species. Because many of these species are difficult to grow, contract growing should begin upon completion of the preceding tasks.

- Explore "Tree City USA" designation for Miami-Dade County from the National Arbor Day Foundation. To qualify, the County must meet four standards: pass an Arbor Day Observance proclamation, enforce tree protection ordinances, appoint a tree committee, and contribute $2.00 per capita of its annual revenue to tree care and planting. The feasibility of countywide implementation or implementation in the Unincorporated Municipal Service Area (UMSA) would be explored by the County Working Group. Currently the municipalities of Aventura, Coral Gables, Miami, Miami Gardens, Miami Springs, North Miami, and North Miami Beach are designated Tree City USA cities.

- Explore establishment of a Green Utility. One possible funding source for the greening of Miami-Dade County is to establish a green utility fee. The Florida Legislature (FL Statutes, 259.035) authorized local governments with populations exceeding 500,000 to collect fees through a voluntary check-off on a utility bill to be determined for the purpose of planting and maintaining the public trees, management of public natural areas, and to fund other tree related programs.

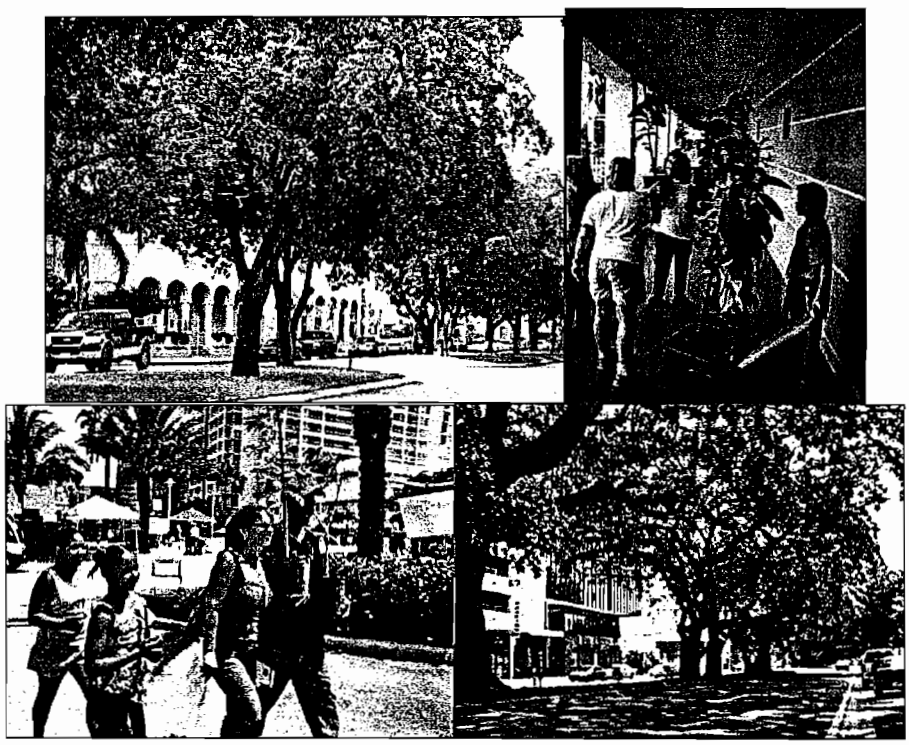
Greenprint for our Future

The successful implementation of the Street Tree Master Plan and compliance with the Landscape Ordinance require the involvement of residents, business owners, government officials, construction contractors, engineers, developers, landscape architects, landscape maintenance companies and employees, neighborhood associations, community planners, and tree care service contractors and employees - in other words, all of us.

Miami-Dade County is developing a *Miami-Dade County Guide to Tree Planting and Maintenance in the Public Right-of-Way* to provide citizens with detailed information about the selection, placement, planting, and care of our tree resources. Understanding the challenges and opportunities of trees in South Florida is key to restoring and maintaining a healthy, livable, walkable community.

During the development of this Plan, many positive changes have already occurred through the identification of bad tree practices and the communication between organizations with similar goals. We have a long way to go. Many current practices in the community at-large are bad for trees and the development of adequate canopy. The wrong trees have been planted in the wrong places. Trees have been hatracked, lion tailed, shaped into topiaries, weakening the tree structure and creating possible hazards. After the 2005 hurricanes, media reports of tree damage to homes and property fueled the myth that trees are a hazard in storms, when in fact; the right tree in the right location can serve as a wind break and lessen structural damage to buildings by taking the brunt of the wind force. Retailers have removed trees so their signs can be seen better, but ignoring data on improved retail sales in canopied areas. In some cases, we plant trees and then don't adequately fund the on-going maintenance.

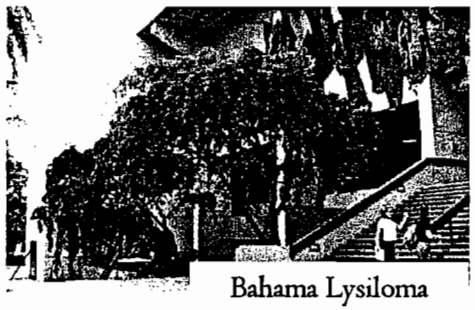
There is a bounty of tree information on the web, in books, seminars, and through government programs such as Adopt-a-Tree. However, in addition to existing programs, a coordinated education and outreach campaign is needed to make sure that the information interpreted for the climate and conditions of South Florida and it is in the hands of those who need it. We need to dispel tree myths in Miami-Dade County and have public policies that match the science. It's the Greenprint for Our Future.



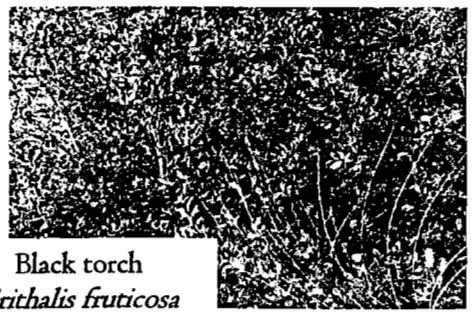
Recommended Street Tree Species *

Common Name	Scientific Name	Height Range	Tree Size	Tree Type	Growth Rate	Blooming Season	Special Needs/ Comments
Allspice	*Pimenta dioica*	15' - 30'	Medium	Shade	Slow	N/A	Leaves are leathery, aromatic and quite attractive. Has whitish gray bark peels in thin sheets. The leaves and fruit smell like a combination of cloves, black pepper, nutmeg, and cinnamon, hence the common name. Small white flowers. Wind tolerant.
Bahama Lysiloma	*Lysiloma sabicu*	20' - 30'	Medium	Shade	Slow	N/A	Slow growing shade tree with small leaves and reddish new growth. Can be invasive, so do not plant next to a natural area
Bald Cypress	*Taxodium distichum*	30' - 60'	Large	Native	Moderate	N/A	Thrives in wet sites. Native deciduous tree. Loses all its leaves in winter. Wind tolerant.
Bitterbush	*Picramnia pentandra*	12' - 18'	Small	Native	Moderate	N/A	Can be planted adjacent to power lines.
Black Ironwood	*Krugiodendron ferreum*	20' - 30'	Small	Native	Slow	N/A	Wind tolerant.
Black torch	*Erithalis fruticosa*	10' - 20'	Small	Native	Fast	N/A	Can be planted adjacent to power lines.
Blolly	*Guapira discolor*	25' - 35'	Medium	Native	Moderate	N/A	Hardy shade tree. Needs minimal care. Very salt tolerant.

Allspice
Pimenta dioica



Bahama Lysiloma
Lysiloma sabicu



Black torch
Erithalis fruticosa

Black ironwood
Krugiodendron ferrum

Bald cypress
Taxodium distichum

Blolly
Guapira discolor

Bitterbush
Picramnia pentandra

Recommended Street Tree Species *

Common Name	Scientific Name	Height Range	Tree Size	Tree Type	Growth Rate	Blooming Season	Special Needs/ Comments
Brown Ebony	*Caesalpinia punctata*	20' - 30'	Medium	Flowering	Moderate	Summer	Beautiful, wide spreading tree up to about 15 m tall (50 ft) and 23 m spread (75 ft); yellowish to tan-colored trunk, dividing into several large branches low on stem; flowers small and light yellow. Ornamental specimen tree.
Colville's Glory	*Colvillea racemosa*	40' - 50'	Large	Flowering	Moderate	Fall (November)	Clusters of vivid scarlet and orange flowers. Like a late season flamboyant.
Copperpod	*Peltophorum pterocarpum*	40' - 50'	Large	Flowering	Fast	Spring/ Summer	Fast-growing evergreen tree. Produces fragrant, showy yellow flowers in the spring and summer. Seedpods turn to an attractive wine-brown color. Subject to wind damage. Needs space to develop adequate root system to reduce the likelihood of toppling
Crape Myrtle	*Lagerstromeia indica*	15' - 20'	Small	Flowering	Moderate	Summer (May-September)	Lavender or white flowers. Can be planted adjacent to power lines
Dahoon Holly	*Ilex cassine*	20' - 40'	Large	Native	Moderate	N/A	Wet areas; wind tolerant

Brown ebony
Caesalpinia punctata

Colville's glory
Colvillea racemosa

Copperpod
Peltophorum pterocarpum

Crape myrtle
Lagerstromia indica

Dahoon holly
Ilex cassine

Recommended Street Tree Species *

Common Name	Scientific Name	Height Range	Tree Size	Tree Type	Growth Rate	Blooming Season	Special Needs/ Comments
Desert Senna	*Senna polyphylla*	10'- 15'	Small	Flowering	Slow	Fall	Slow growing evergreen tree with a spreading, cascading crown with tiny leaves. Produces yellow flowers throughout Fall to Spring. Larval plant for Sulfur butterfly. Can be planted under power lines, but planting as a standard can result in a snapped main stem.
Florida Privet	*Forestiera segregata*	10'- 15'	Small	Native	Moderate	N/A	Drought tolerant; OK under power lines
Geiger Tree	*Cordia sebestena*	20' - 25'	Small	Flowering Native	Moderate	Year-round	Moderate-growing with a dense rounded evergreen canopy. Flowers appear throughout the year with small edible white pear-shaped fruit. Salt and wind tolerant.
Green Buttonwood	*Conocarpus erectus*	30' - 50'	Large	Native	Moderate	N/A	Salt and Wind Tolerant
Guinea plum	*Drypetes laterifolia*	20' - 30'	Small	Native	Slow	N/A	
Gumbo limbo	*Bursera simaruba*	40' - 50'	Large	Native	Fast	N/A	Does not have showy flowers, but it is affectionately called the tourist tree because of its shiny red and peeling bark. Wind tolerant.
Inkwood	*Exothea paniculata*	25' - 35'	Medium	Native	Moderate	Summer	Slender dense crown with glossy leaves and tiny fragrant blooms in spring and early summer. Produces red berries that ripen to deep purple. Native

Desert senna
Senna polyphylla

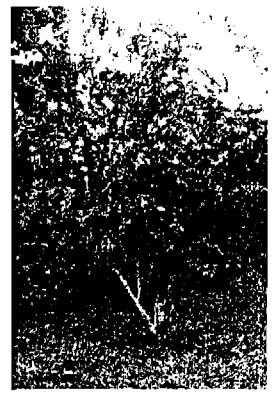
Florida privet
Forestiera segregata

Green buttonwood
Conocarpus erectus

Geiger tree
Cordia sebestana

Guinea plum
Drypetes laterifolia

Gumbo limbo
Bursera simaruba

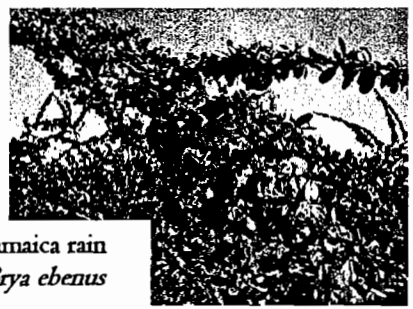


Inkwood
Exothea paniculata

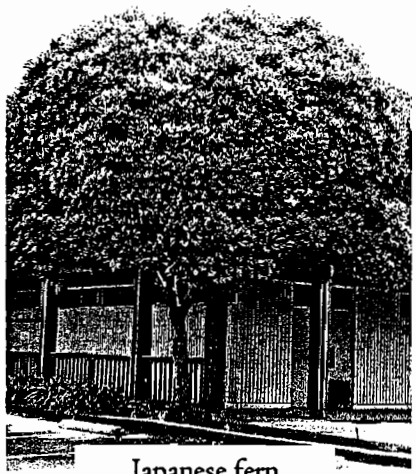
Recommended Street Tree Species *

Common Name	Scientific Name	Height Range	Tree Size	Tree Type	Growth Rate	Blooming Season	Special Needs/ Comments
Jacaranda	*Jacaranda mimosifolia*	40' - 50'	Large	Flowering	Fast	Fall and Winter (if cool enough)	Needs space to develop adequate root system to reduce the likelihood of toppling. Does not flower well in South Florida.
Jamaica Rain	*Brya ebenus*	15' -30'-	Small	Flowering	Slow	Spring and Summer	Blooms spring, summer and in times of high humidity. Tolerates heat and salt but may drop leaves when dry Excellent street tree selection.
Japanese Fern	*Filicium decipiens*	20'- 30'	Medium	Shade	Moderate	N/A	Broad canopy. Decorative leaves.
Krug's Holly	*Ilex krugiana*	25' - 30'	Small	Native	Moderate	N/A	Attractive red berries in winter.
Lancepod	*Lonchocarpus violaceous*	30' - 35'	Medium	Flowering	Fast	Late Summer/Fall	Evergreen with a fast-growing, dense canopy. Produces fragrant, lavender, showy flowers during the late summer/ fall. Produces long, slender, seed pods. Plant at least 30 feet from power lines and 16-22 feet from your house. Full sun.
Lancewood	*Nectandra coriacea*	25' - 35'	Medium	Native	Moderate	N/A	Aromatic leaves and small clustering white flowers. Attract bees. Wind tolerant.

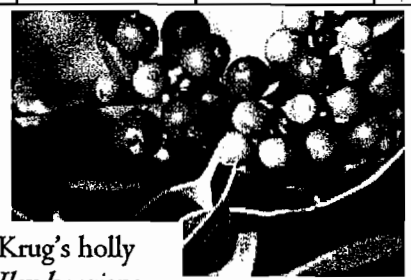
Jacaranda
Jacarana mimosifolia



Jamaica rain
Brya ebenus



Japanese fern
Filicium decipiens

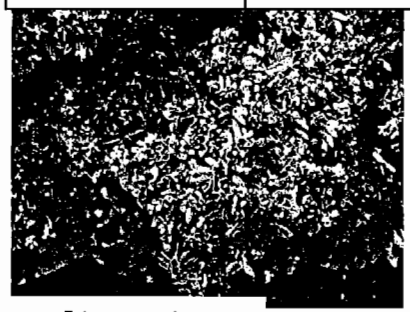


Krug's holly
Ilex krugiana

Lancewood
Nectandra coriacea

Lancepod
Lochocarpus violaceous

Common Name	Scientific Name	Height Range	Tree Size	Tree Type	Growth Rate	Blooming Season	Special Needs/ Comments
Lignum Vitae	*Guaiacum sanctum*	10' - 30'	Small	Flowering Native	Very Slow	Year-round	Purple blooms several times per year. Slow-growing but long-lived, it is adaptable to dry rocky areas in full sun to light shade Can be planted adjacent to Power Lines. Rare, expensive, but worth it in small spaces.
Limber Capper	*Capparis flexuosa*	15' - 20'	Small	Flowering Native	Moderate	Late Spring/ Summer	Pink and white flowers. Can be planted in partial sun adjacent to power lines.
Live Oak	*Quercus virginiana*	40' - 50'	Large	Native	Moderate	N/A	Wind tolerant.
Madagascar Olive	*Noronhia emarginata*	20' - 30'	Small	Shade	Moderate	N/A	Salt tolerant. Can be planted adjacent to power lines.
Mahogany	*Swietenia mahagoni*	35' - 60'	Large	Native	Fast	N/A	Low wind tolerance; needs space to develop adequate root system to reduce the likelihood of toppling; brittle in Central and North Dade
Mast Tree	*Polyalthia longifolia*	10' - 25'	Small	Shade	Slow	N/A	Narrow canopy tree with attractive foliage. Good for screening.
Mexican Cassia	*Caesalpinia mexicana*	20' - 25'	Small	Flowering	Moderate	Summer (May-September)	Fragrant, golden flowers. Needs full sun. Can be planted adjacent to power lines.



Lignum vitae
Guaicium sanctum

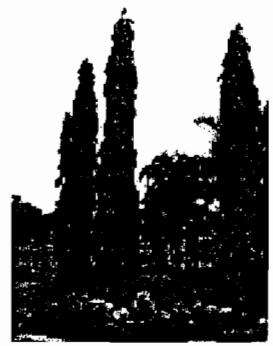
Limber caper
Capparis flexuosa

Mahogany
Sweitenia mahogoni

Live Oak
Quercus virginiana

Madagascar olive
Noronhia emarginata

Mexican cassia
Caesalpinia mexicana



Mast tree
Polyalthia longifolia

Common Name	Scientific Name	Height Range	Tree Size	Tree Type	Growth Rate	Blooming Season	Special Needs/ Comments
Myrsine	*Myrsine guianensis*	15' - 25'	Small	Native	Slow	N/A	Can be planted adjacent to power lines.
Paradise Tree	*Simarouba glauca*	35' - 50'	Large	Native	Moderate	N/A	Attractive reddish color on new foliage. Fast growing native. Female plant bears black berries that attract birds.
Pigeon Plum	*Coccoloba diversifolia*	25' - 30'	Small	Native	Moderate	Spring	Moderate-growing with a dense, columnar canopy producing small white flowers in the spring. Attractive bark. Native. Fruits ripen in late summer/fall and attract birds. Female plant bears fruit; weevils if near sea grape.
Podocarpus	*Podocarpus sp.*	30' - 50'	Large	Shade	Moderate	N/A	Evergreen conifer. Red "berries" attract birds. Wind tolerant.
Queen's Crepe Myrtle	*Lagerstroemia speciosa*	30' - 45'	Large	Flowering	Moderate	Summer	Moderate-growing with leaves that turn red before falling in the winter. It has large showy pink or purplish flowers during the summer. Drops leaves when during cold spells.
Red Bay	*Persea borbonia*	50' - 60'	Large	Native	Moderate	N/A	Large native evergreen tree. Moderate growing. Thrives in wet areas. Wind tolerant.

Myrsine
Myrsine guianensis

Queen's crepe myrtle
Lagerstromia speciosa

Paradise tree
Simarouba glauca

Pigeon plum
Coccoloba diversifolia

Podocarpus
Podocarpus sp.

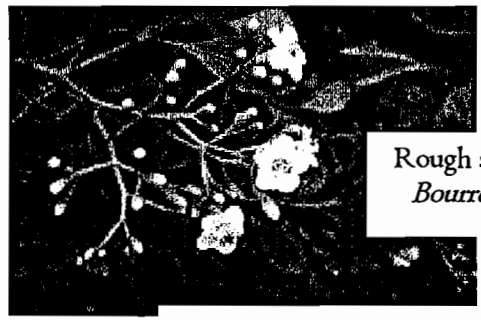
Red bay
Persea borbonia

Recommended Street Tree Species *

Common Name	Scientific Name	Height Range	Tree Size	Tree Type	Growth Rate	Blooming Season	Special Needs/ Comments
Red stopper	*Eugenia rhombea*	15' - 20'	Small	Native	Moderate	N/A	Can be planted adjacent to power lines.
Redberry stopper	*Eugenia confusa*	15' - 20'	Small	Native	Moderate	N/A	Can be planted adjacent to power lines.
Rough Strong Bark	*Bourreria ovata*	15' - 20'	Small	Native	Moderate	N/A	Can be planted adjacent to power lines.
Saffron Plum	*Bumelia celastrinum*	20' - 25'	Small	Native	Slow	N/A	Can be planted adjacent to power lines.
Satinleaf	*Chrysophyllum oliviforme*	20' - 30'	Small	Native	Slow	N/A	Wet and/or Shady areas wind tolerant.
Sea Grape	*Coccoloba uvifera*	15' - 35'	Large	Native	Moderate	N/A	Salt tolerant/ needs to have multiple trunks for stability
Shortleaf Fig	*Ficus citrifolia*	40' - 50'	Large	Native	Fast	N/A	Large, fast growing native. Fruit attractive to birds.

Red stopper
Eugenia rhombea

Redberry stopper
Eugenia confusa



Rough strongbark
Bourreria ovata

Saffon plum
Bumelia celastrinum

Shortleaf fig
Ficus citrifolia

Sea grape
Coccoloba uvifera

Satinleaf
Chrysophyllum oliviforme

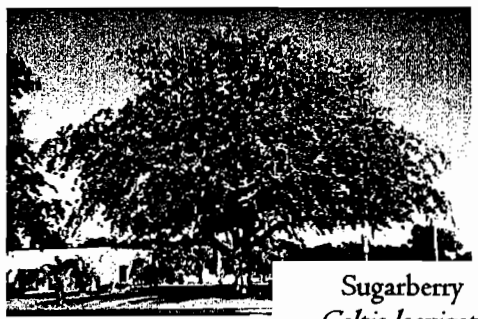
Common Name	Scientific Name	Height Range	Tree Size	Tree Type	Growth Rate	Blooming Season	Special Needs/ Comments
Silver Buttonwood	*Conocarpus erectus*	10' - 25'	Small	Native	Moderate	N/A	Small native evergreen tree. Moderate growing. Salt Tolerant. Can be planted adjacent to power lines.
Simpson Stopper	*Myricanthes fragrans*	20'- 30'	Small	Native	Slow	N/A	Hardy native; can be planted adjacent to power lines
Soapberry	*Sapindus saponaria*	20' - 30'	Small	Native	Moderate	N/A	Seeds are poisonous.
Spanish Stopper	*Eugenia foetida*	15' - 20'	Small	Native	Moderate	N/A	Small native evergreen tree. Moderate columnar growth; small leaves in tight formation; wildly fragrant flowers; good salt-tolerance. Can be planted adjacent to power lines.
Spicewood	*Callyptranthes pallens*	10' - 15'	Small	Native	Moderate	N/A	Can be planted adjacent to power lines.
Sugarberry	*Celtis laevigata*	40' - 60'	Large	Native	Moderate	N/A	Rated only to zone 10
Torchwood	*Amyris elemifera*	10' - 15'	Small	Native	Slow	N/A	Salt tolerant. Can be planted adjacent to power lines.

Silver buttonwood
Conocarpus erectus

Simpson stopper
Myricanthes fragrans

Spicewood
Callyptranthes pallens

Soapberry
Sapindus saponaria



Sugarberry
Celtis laevigata

Spanish stopper
Eugenia foetida

Torchwood
Amyris elemifera

Recommended Street Tree Species *

Common Name	Scientific Name	Height Range	Tree Size	Tree Type	Growth Rate	Blooming Season	Special Needs/Comments
Vera wood	*Bulneisa arborea*	20'- 30'	Large	Flowering	Moderate	Summer	Large flowering tree (yellow). Tall, slow growing with bright yellow flowers and shiny deep-green compound leaves. This tree is adapted to dry conditions and has very hard wood and flowers throughout the year. Needs space to develop adequate root system to reduce the likelihood of toppling.
Wax myrtle	*Myrica cerifera*	15' - 25'	Small	Native	Moderate	N/A	Salt tolerant. Can be planted adjacent to power lines. Susceptible to lac scale
West Indian Cherry	*Prunus myrtifolia*	30' - 40'	Large	Native	Fast	November-January	Profuse clusters of tiny fragrant white flowers with yellow centers. Fruit attractive to birds. Leaves aromatic.
White Cordia	*Cordia boissieri*	15' - 20'	Small	Flowering	Moderate	Year-round	Salt tolerant. Can be planted adjacent to power lines.
White Mangrove	*Laguncularia racemosa*	15' - 20'	Large	Native	Moderate	N/A	Salt tolerant. Can be planted adjacent to power lines.

Vera wood
Bulnesia arborea

West Indian cherry
Prunus myrtifolia

White cordia
Cordia boissieri

Wax myrtle
Myrica cerifera

White mangrove
Laguncularia racemosa

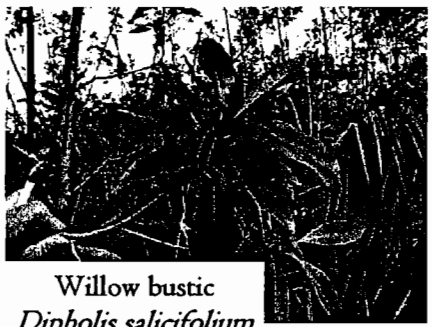
Common Name	Scientific Name	Height Range	Tree Size	Tree Type	Growth Rate	Blooming Season	Special Needs/ Comments
White stopper	*Eugenia axillaries*	15' - 25	Small	Native	Moderate	N/A	Salt tolerant. Can be planted adjacent to power lines.
Wild Dilly	*Manilkara bahamensis*	15' - 20'	Small	Native	Slow	N/A	Salt tolerant. Can be planted adjacent to power lines.
Wild Tamarind	*Lysiloma latisiliqua*	40' - 50'	Large	Native	Fast	N/A	Salt tolerant. Can be planted adjacent to power lines.
Willow Bustic	*Dipholis salicifolium*	20' - 30'	Medium	Native	Moderate	N/A	Salt tolerant. Can be planted adjacent to power lines.
Winged Sumac	*Rhus copallina*	15' - 20'	Small	Native	Fast	N/A	Salt tolerant. Can be planted adjacent to power lines.
Ylang-Ylang (dwarf)	*Canaga fruiticosa*	10'- 15'	Small	Flowering/ Shade	Slow	Spring and Summer	Slow growing. This plant is attractive to bees, butterflies and/or birds. Flowers are fragrant. Suitable for growing in containers.

White stopper
Eugenia axillaries

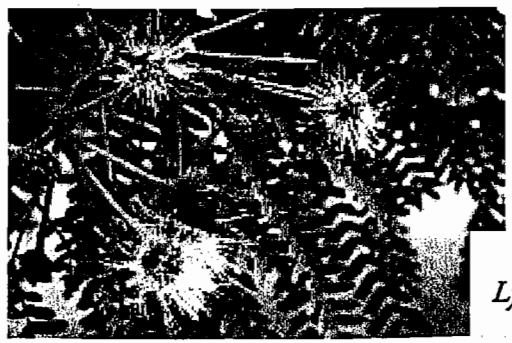
Wild dilly
Manilkara bahimensis

Winged sumac
Rhus copallina

Ylang-Ylang
Cananga fruticosa



Willow bustic
Dipholis salicifolium



Wild tamarind
Lysiloma latisiliqua

***Notes:**

- **These tree species do not rule out other species in public rights-of-way, but are meant to provide guidance based on historical performance of certain trees in the harsh and restricted street planting environment.**
- **The Street Tree Master Plan encourages the enhancement of countywide canopy by the planting of hardwood shade trees. As such, palm tree plantings can be researched through the contacts provided in Appendix C.**
- **Check with the municipal permitting agency for additional guidance in your municipality (Appendix C).**

Appendix B-1

Prohibited Tree Species

Trees that are prohibited to be planted, sold, or propagated in Miami-Dade County:

Common Name:	Botanical Name:
Australian Pine	*Casuarina* spp.
Banyon Fig	*Ficus bengalensis*
Brazilian Pepper	*Schinus terebinthifolius*
Bishopwood	*Bischofia javanica*
Carrotwood	*Cupaniopsis anacardioides*
Castorbean	*Ricinus communis*
Catclaw Mimosa	*Mimosa pigra*
Earleaf Acacia	*Acacia auriculaeformis*
Governor's Plum	*Flacourtia indica*
Indian Dalbergia (sissoo)	*Dalbergia sissoo*
Laurel Fig	*Ficus microcarpa*
	Ficus nitida
	F. retusa var. *varnitida*
Lead Tree	*Leucaena leucocephala*
Lofty Fig Tree	*Ficus altissima*
Mahoe	*Hibiscus tiliaceus*
Melaleuca (cajeput or paperbark tree)	*Melaleuca quinquenervia*
Red Sandalwood	*Adenanthera pavonina*
Seaside Mahoe	*Thespesia populnea*
Queensland Umbrella Tree	*Schefflera actinophylla*
Woman's Tongue	*Albizia lebbek*

Tree Information Resources

E-Government Link www.miamidade.gov

DERM Tree removal and planting permits information and application information
www.miamidade.gov/derm/Ecosystems/permits_tree_removal.asp

Adopt-A-Tree Program
www.miamidade.gov/derm/adoptatree

Cooperative Extension Service
www.miami-dade.ifas.ufl.edu

Team Metro office information
www.miamidade.gov/teametro

Landscape Ordinance
www.miamidade.gov/planzone

Dig in Dade
A stand-alone citizen forestry manual for property owners and residents on topics ranging from the benefits of urban trees, selecting the right tree for the right place, proper planting and care for urban trees, and contact information for community tree resources. This booklet is updated regularly and can be added to the digital library and provided to new home buyers.

Miami-Dade Directory of Tree Organizations and Information Sources

Government Resources

Miami-Dade Dept. of Environmental Resources Management www.miamidade.gov/derm	305-372-6789
Miami-Dade Urban Tree Program	305-372-6574
Miami-Dade Adopt-A-Tree Community Forestry Project www.miamidade.gov/adoptatree	305-372-6555
Miami-Dade Parks & Recreation Department www.miamidade.gov/parks	305-755-7800
Miami-Dade Planning and Zoning Department www.miamidade.gov/planzone	786-315-2650
Miami-Dade Public Works Right-of-Way Aesthetics & Asset Management http://www.miamidade.gov/pubworks/maintenance_landscaping.asp	305-270-1791
University of Florida/Miami-Dade County Extension Plant advice for individuals & homeowners Advice for professional landscapers & condominium associations www.ifas.ufl.edu	305-248-3311 ext. 228 ext. 231
Florida Yards and Neighbors Program www.ifas.ufl.edu/programs/fyn.htm	305-248-3311 ext. 246

Municipal tree contacts

Aventura
www.cityofaventura.com

Community Services
Public Works Division
19200 West Country Club Drive
Aventura, FL 33180
(305) 466-8931

Uses Miami-Dade Public Works Department guideline. City decides species.

Bal Harbour Village
www.balharbourgov.com

Beautification Committee
655 - 96th Street
Bal Harbour, FL 33154
(305) 866-4633 x109; FAX: 868-6575

No regulations but approval by Landscape Architect and Beautification Committee is needed

Bay Harbor Islands
www.bayharborislands.org

Public Works Department
966 Bay Harbor Terrace
Bay Harbor, FL 33154
(305) 866-6241; FAX: 866-4863

Swales are asphalted but any other trees get internal plan approval

Biscayne Park, Village of
http://bphomeowners.com/news.htm

Public Works Department
893 NE 109 Street
Miami, FL 33161
(305) 893-4346; FAX: 893-4345

Coral Gables
www.citybeautiful.net/index.html

Building & Zoning Director
City Hall
405 Biltmore Way
Coral Gables, FL 33134
(305) 460-5235; FAX: 460-5261

Plans must be taken through landscape committee and maintenance covenant required

Cutler Bay
http://cutlerbay-fl.gov/

Public Works Department
10720 Caribbean Blvd., Suite 105
Cutler Bay, FL 33189
(305) 234-4262; FAX (305) 234-4251

Doral
www.doral.cc/news.htm

Public Works Department
8300 NW 53 St., Ste. 100
Doral, FL 33166
(305) 593-6740

Miami-Dade County Public Works Department handles all permits

El Portal
www.villageofelportal.com

Village Clerk
500 NE 87 Street
El Portal, FL 33138
(305) 795-7880

No regulations for swale planting

Florida City
www.floridacityfl.us

404 W Palm Drive, 2nd Floor
Florida City, FL 33034
(305) 247-8221

Golden Beach
www.goldenbeach.us/index.html

Town Manager or
Building & Zoning Director
One Golden Beach Drive
Golden Beach, FL 33160
(305) 932-0744; FAX: 933-3825

Hialeah Gardens
www.cityofhialeahgardens.org

Public Works Director
10001 NW 87 Avenue
Hialeah Gardens, FL33016
(305) 558-4114; FAX: 819-5315

Hialeah
www.ci.hialeah.fl.us

Director of Streets Division
5601 E. 8th Avenue
Hialeah, FL 33013
(305) 687-2611; FAX: 687-2632

Homestead
www.cityofhomestead.com

Public Works Dept.
790 N. Homestead Blvd.
Homestead, FL 33030
(305) 224-4842

Doesn't allow planting on ROW - only City plantings

Indian Creek Village

City Manager
9080 Bay Drive
Miami Beach, FL 33154
(305) 865-4121; FAX: 865-2502

Doesn't allow ROW plantings

Islandia

No Rights of way

Key Biscayne, Village of
www.vkb.keybiscayne.fl.us

Public Works Director
88 W. Macintyre
Key Biscayne, FL 33149
(305) 365-8945; FAX: 365-5556

Street trees are planned by species and approved by PWD director

Medley
www.townofmedley.com/

Public Works Department
7331 NW 74 Street
Medley, FL 33166
(305) 889-1915

Miami
www.ci.miami.fl.us

Public Works Department
444 SW 2 Avenue, 3rd Floor
Miami, FL 33130
(305) 416-1050

Written application process with an approved species list, no covenant

Miami Beach
www.miamibeachfl.gov

Parks Director
2100 Meridian Avenue
Miami Beach, FL 33139
(305) 673-7720

Application required and approval from parks and PWD. Have master plan with species specific by street

Miami Gardens
www.miamigardens-fl.gov

Code Enforcement
1515 NW 167 Street
Building 5, Suite 200
Miami Gardens, FL 33169
(305) 622-8020

Miami Lakes
www.townofmiamilakes.com

Code Enforcement
6853 Main Street
Miami Lakes, FL 33014
(305) 364-6100

Replaces tree upon resident request with Live Oak

Miami Shores Village
www.miamishoresvillage.com

Public Works Department
10050 NE 2 Avenue
Miami, FL
(305) 795-2210

Does not allow planting by residents but Village will plant Palm, Live Oak or Mahogany if requested by resident

Miami Springs
www.miamisprings.com

Public Works Department
Tree Section
201 Westward Drive
Miami Springs, FL 33166
(305) 805-5170, option #3

Has an ordinance that allows planting on the swale and requires plan approval from list of pre-approved species.

North Bay Village
www.nbvillage.com

Building Department
7903 East Drive
Harbor Island
North Bay Village, FL 33141
(305) 754-6740

All ROWs are for parking and DOT maintains the median strip

North Miami
www.ci.north-miami.fl.us

Parks Department
776 NE 125 Street, Room 11
North Miami, FL 33161
(305) 893-6511, ext.2260

Require resident to apply and do utility checks and City will sell Oak tree at half price. City will then take over maintenance of tree. City tree inventory is on database.

North Miami Beach
www.citynmb.com

City Forester
Public Services
17050 NE 19 Avenue
North Miami Beach, FL 33162
(305) 948-2967

Palmetto Bay
www.palmettobay-fl.gov

Public Works Department
8950 SW 152 Street
Palmetto Bay, FL 33157
(305) 259-1234

Pinecrest, Village of www.pinecrest-fl.gov	Public Works Department 10800 Red Road Pinecrest, FL 33156 (305) 669-6916

Species planned by landscape committee and installed by City contractor

Opa-Locka www.cityofopalocka.org	Public Works Department 777 Sharazad Blvd. Miami, FL 33054 (305) 953-2828
South Miami www.cityofsouthmiami.net	Public Works Department 6130 Sunset Drive South Miami, FL 33143 (305) 663-6350
Sunny Isles Beach www.sibfl.net	Zoning Department 17070 Collins Avenue Sunny Isle Beach, FL 33160 (305) 947-0606; Fax: 949-3113
Surfside www.town.surfside.fl.us	Public Works Department 9293 Harding Ave. Surfside, FL 33154 (305)993-1058/1059
Sweetwater www.cityofsweetwaterflorida.com	City Clerk's Office 500 SW 109 Avenue Miami, FL 33174 (305) 221-0411; FAX: 221-2541

Land development code requires planting in ROW for new buildings and approval for all ROW (streets have specific species, Black Olives are prohibited on the ROW).

Virginia Gardens	Public Works Department or Beautification Committee 6498 NW 38 Terrace Miami, FL 33166 (305) 871-6104; FAX: 871-1120
West Miami	Public Works or Building & Zoning 901 SW 62 Avenue Miami, FL 33144 (305) 266-4214
Unincorporated Municipal Service Area	Miami-Dade Urban Tree Program DERM 33 SW 2 Avenue, 4th Floor Miami, FL 33130 305-372-6574

Local Tree Organizations

TREEmendous Miami www.treemendousmiami.org	305-378-1863
Florida Native Plant Society (Miami-Dade Chapter) www.fnps.org	305-225-6404
Grove Tree-Man Trust	305-443-1312
Operation Green Leaves www.oglhaiti.com	305-644-9000
Redland Tropical Gardens	305-258-5545
Tropical Flowering Tree Society	305-445-8076

Botanical Gardens

Doc Thomas House 5330 Sunset Dr, South Miami	305-666-5111
Fairchild Tropical Botanical Garden 10901 Old Cutler Rd, Coral Gables www.fairchildgarden.org	305-667-1651
Miami-Dade Fruit & Spice Park 25801 SW 187 Ave, Miami www.miamidade.gov/parks/Parks/fruit_spice.htm	305-247-5727
Gifford Arboretum University of Miami fig.cox.miami.edu/Arboretum/gifford.html	305-284-5364
Miami Beach Botanical Garden 2000 Convention Center Drive	305-673-7245

Public Utilities

Sunshine State One (Utility clearances - call 48 hours prior to digging)	1-800-432-4770
Florida Power and Light (FPL) "Right Tree, Right Place" Planting Guide and free mulch www.fpl.com	
South Florida Water Management District Xeriscaping Guide www.sfwmd.gov	1-800-432-2045

Other Information Sources

University of South Florida, Atlas of Florida Vascular Plants	www.plantatlas.usf.edu
University of Florida, Electronic Document Information Service	edis.ifas.ufl.edu
University of Florida, Dr. Ed Gilman	http://hort.ifas.ufl.edu/woody/index.htm
Florida Nurserymen & Growers Association	www.fnga.org
Association of Florida Native Nurseries	www.afnn.org
Florida Urban Forestry Council	407-872-1738 www.fufc.org
ICLEI (International Council for Local Environmental Initiatives)	www.iclei.org/us
TreeLink	www.treelink.org
American Forests	www.americanforests.org
National Arbor Day Foundation	www.arborday.org
Urban Design Tree Planting	http://hort.ifas.edu/woody/index
USDA Urban and Community Forestry Program	www.fs.fed.us/ucf
USDA Forest Service Southern Region	www.urbanforestrysouth.usda.gov

TREE WORKING GROUP TASKS ASSIGNMENTS

TASK	ASSIGNED TO
Aggressively pursue funding opportunities with State, Federal, and private entities to replace lost canopy, develop adequate maintenance plans, and mitigation strategies	Strategic Business Management, Community Image Advisory Board, Office of Emergency Management, Public Works, Parks, municipalities, FPL
Develop an inventory of street tree resources in the County and develop a management plan for those resources	Public Works, DERM, Planning and Zoning, Cooperative Extension, Florida Division of Forestry, municipalities
Review County policies, procedures, and practices that may inhibit the implementation of the Street Tree Master Plan and the County Landscape Ordinance, including right-of-way regulations and determine the most effective management of the County Green Infrastructure. Explore Context Sensitive Solutions	Community Image Advisory Board, Planning and Zoning, Park and Recreation, Cooperative Extension, Team Metro, and Public Works
Review the existing inventory, tree pruning and species selection policies vis-à-vis wind storm and hurricane resistance to minimize property damage and tree loss during storm events. Seek mitigation strategies to address tree damage issues	Office of Emergency Management, Public Works, Cooperative Extension, and FPL
Institute partnerships with municipal agencies with responsibility for street tree planting and maintenance to establish intergovernmental efforts with regard to tree canopy restoration and enhancement	Community Image Advisory Board
Evaluate and strengthen as necessary the guidelines for plan review that ensure adequate protection of existing trees during construction, including, but not limited to, installation of barriers to prohibit any disturbance within the drip lines of existing trees	DERM, Public Works, FDOT, MDX, and municipalities
Oversee the training of County tree and landscape maintenance crews and County contractors. Improper trimming or damage by landscape tools may cause permanent harm to tree structure and create a hazardous tree	Consumer Services/Cooperative Extension, Public Works, and the Office of Emergency Management
Develop design criteria to be used in the site plan review process that will result in additional planting and lanscaping opportunities, i.e. encourage bigger parking lot islands.	Planning and Zoning, muncipalities
Coordinate with natural area managers to ensure that all right-of-way planting activities adjacent to natural areas or preserves are species appropriate to that habitat and existing prohibited species are removed from the area at time of the planting	DERM, Park and Recreation, Public Works and municipalities
Encourage site analysis so that if soil is compacted or rocky or water is within 2 feet of the surface then large maturing trees are not planted, or the site is modified	Public Works, municipalities
Develop a plan and oversee the removal of prohibited species from the public right-of-way and replacement with appropriate species	DERM, Public Works, Parks
Conduct public meetings with homeowner groups and other stakeholders to reach a consensus about how the road corridors should look	Public Works and Planning and Zoning
Serve as liaison to community based organizations working with tree planting initiatives	DERM and Community Image Advisory Board
Develop a cost-share plan with other governmental entities, the private sector, and residents for a tree-planting program the rights-of-way	Street Tree Working Group

Create and update Miami-Dade County Guide to Tree Planting and Maintenance in the Public Right-of-Way as needed	Community Image Advisory Board, Public Works, Planning and Zoning
Provide annual reports to the Board of County Commissioners on the State of the Urban Tree Canopy beginning in 2008 which detail the baseline study information and planting activities related to the Street Tree Master Plan	Community Image Advisory Board and Street Tree Working Group
Improve the street tree inventory by planting trees that are wind tolerant species in the public right-of-way and protect existing inventory by proper maintenance trimming. By improving the survivability of street trees during wind storms, the public investment is protected but also will reduce road debris and hasten power restoration after a storm event	Public Works and municipalities
Establish stewardship of the existing legacy of mature trees and effective planning for future planting and maintenance needs	Street Tree Working Group
Provide a list of recommended street trees as per the Landscape Ordinance (See Appendix A) to give guidance to citizens and governmental agencies regarding which tree species survive better in harsh conditions for street trees, especially in swale areas. Median trees may offer more flexibility on species depending on the size of the planting area. Review annually to update information	Planning and Zoning
Promote the use of trees for energy conservation by encouraging cooling through the provision of shade and the channeling of breezes, thereby helping to offset global warming and local heat island effects through the added absorption of carbon dioxide and reduction of heat islands	DERM
Map and prioritize removal of hazardous street trees and replant where appropriate and develop a program for the selective replacement of undesirable species that may be brittle, invasive or not appropriate for rights-of-way plantings due to fruit drop or invasive roots. Tree replacement would focus on less problematic species listed in the Street Tree Master Plan	Public Works, municipalities
Encourage urban planning efforts to include the design of pedestrian friendly environments. Encourage provisions of wide sidewalks with sufficient space for trees where appropriate, in public design projects. Design the soil space under and adjacent to the hardscape to sustain root growth – good trees well connected to the ground only develop if the roots have room to grow	Planning and Zoning, Public Works, municipalities
Coordinate the tree planting, permitting, removal and enforcement of all municipalities and County agencies and promote countywide cooperation in the restoration of canopy within Miami-Dade County	Street Tree Working Group
Link urban and suburban environments with parks and natural areas. Identify and support a network of connectivity, through street planting, that complements greenway and blueway (paddling trail for non-motorized watercraft e.g. canoe or kayak) planning and implementation	Street Tree Working Group
Use street trees as a traffic calming device to support safe sidewalks and street crossings for school children and pedestrians in general	Public Works, municipalities

Memorandum

MIAMI-DADE COUNTY

Date: March 6, 2007

Amended
Agenda Item No. 12(A)(2)

To: Honorable Chairman Bruno A. Barreiro and Members, Board of County Commissioners

From: George M. Burgess, County Manager

Subject: Resolution Authorizing the Adoption of the Miami-Dade County Street Tree Master Plan: A Greenprint for Our Future.

R-231-07

RECOMMENDATION

It is recommended that the Board of County Commissioners approve the attached resolution adopting the Miami-Dade County Street Tree Master Plan: A Greenprint for Our Future (Plan). This Plan (Attachment 1) establishes policies and guidelines for County agencies and facilitates partnerships with municipalities in managing urban tree resources.

BACKGROUND

While most are aware of the environmental benefits provided by trees; improved air quality, wildlife value, shade, energy savings, and water resource protection, recent scientific studies report a positive correlation between trees and social benefits, quality of life indicators, and economic well being such as property values. Thus, having adequate tree canopy is vital to the social, environmental, and economic well being of our community.

A 1996 analysis by the non-profit organization American Forests, in partnership with Miami-Dade County, determined that the tree canopy cover in unincorporated Miami-Dade County averaged only about 10 percent with some municipalities showing as little as one to two percent tree coverage. In comparison, the average metropolitan area in the United States has a tree canopy of 33.4 percent with optimal urban canopy coverage considered to be 40-45 percent. Several factors contribute to the lack of canopy in Miami-Dade County.

Since 1996, approximately 600,000 citrus trees were removed for the citrus canker eradication program. Stronger hurricanes and longer storm seasons have increased the stress and mortality of the trees that remain. In addition, this existing canopy consists of a high percentage of non-native invasive species and inferior quality trees, some of which threaten natural areas or are hazards in windstorms. Proactive measures are needed to reverse the loss of tree canopy. One such measure has been the Adopt-a-Tree Program that deals with canopy replacement on private property.

The increase in frequency of hurricanes throughout Florida in recent years has brought the issue of public tree policies to the forefront. There are many excellent resources for tree education in South Florida; however the consistent application of

state-of-the art urban tree planting and management techniques lags behind the science. We know that not all trees are good trees for South Florida. We also know that many quality trees have been planted in the wrong places and they have been pruned improperly. Bringing the policies to meet the science is essential to mitigate damage from storms, but also to establish adequate tree coverage to enhance the quality of life in Miami-Dade County.

To address street landscaping, on June 5, 2001, the Board adopted Resolution No. R-650-01 directing the formulation of a plan to guide future street tree plantings (public trees) and the development of a maintenance program for the existing inventory of street trees, and the new plantings. An interim report was provided to the Board on September 24, 2001. A follow-up report was presented to the Governmental Operations and Environment Committee on September 14, 2004. These reports presented plan amendments that were made at the request of the Board or the technical team preparing the plan. The plan does not have any direct fiscal impact, instead presents a framework for future planning efforts and recommends best management practices and species selection for future street tree projects.

The Street Tree Master Plan establishes policy direction to begin management of Miami-Dade County's urban tree resources as a necessary priority. It manages the green infrastructure to address the concerns of trees along our streets and highways and to provide a reference for urban street tree resources. The Plan describes the procedures for the planting and maintenance of street trees throughout Miami-Dade County and encourages partnerships with municipalities for the countywide implementation of the Plan for a greener, more livable community.

A working group comprised of representatives from DERM, Public Works, Park and Recreation, Planning and Zoning, the County Manager's Office, the Cooperative Extension Service, municipalities, and community-based organizations was created. After reviewing current practices, the group developed the attached Street Tree Master Plan for the Board's consideration. One of the key recommendations of the plan is the development of the list of recommended street trees. Some species poorly adapt to the harsh conditions encountered in urban environments by street trees or may present hazardous conditions from aggressive root growth or brittle limb structure. The active 2004 and 2005 hurricane seasons taught us a great deal about which trees are better suited to sustain high wind and other storm impacts in the street tree environment. This Plan will complement the efforts of the County's Community Image Advisory Board and coordinate the activities of the above-referenced agencies with regard to the management of public tree resources. Workshops were held during the development of the Street Tree Master Plan to garner municipal and community input.

Some of the following initiatives will be undertaken to meet the goals of the Plan:

- Establish a street tree working group
- Educate Miami-Dade citizens on tree canopy issues
- Promote "right tree, right place"
- Expand inventory coordination of street tree plantings
- Develop guidelines for the maintenance of the green infrastructure on par with the gray infrastructure
- Research of historical habitat and ecology conditions
- Annual update to the BCC on the status of the street tree canopy

The Plan is guided by an overall vision to restore and enhance the County's tree canopy into a thriving urban forest that provides multiple aesthetic and environmental benefits. The Miami-Dade County Street Tree Master Plan is designed to support the vision by providing a "greenprint" for the appropriate planning, implementation, and management of our existing and planned tree resources.

Assistant County Manager

MEMORANDUM

(Revised)

TO: Honorable Chairman Bruno A. Barreiro and Members, Board of County Commissioners

DATE: March 6, 2007

FROM: Murray A. Greenberg, County Attorney

SUBJECT: Amended Agenda Item No. 12(A)(2)

Please note any items checked.

_____ **"4-Day Rule" ("3-Day Rule" for committees) applicable if raised**

_____ **6 weeks required between first reading and public hearing**

_____ **4 weeks notification to municipal officials required prior to public hearing**

_____ **Decreases revenues or increases expenditures without balancing budget**

_____ **Budget required**

_____ **Statement of fiscal impact required**

_____ **Bid waiver requiring County Manager's written recommendation**

_____ **Ordinance creating a new board requires detailed County Manager's report for public hearing**

_____ **Housekeeping item (no policy decision required)**

_____ **No committee review**

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