



To: Honorable Mayor and Village Council

Date: May 2, 2016

From: Edward Silva, Village Manager

Re: Acceptance of Tree Management Plan

A RESOLUTION OF THE MAYOR AND VILLAGE COUNCIL OF THE VILLAGE OF PALMETTO BAY, FLORIDA, ACCEPTING THE VILLAGE OF PALMETTO BAY TREE MANAGEMENT PLAN, TO SERVE AS AN INFORMATIVE RESOURCE GUIDE FOR TREE MANAGEMENT, PLANTING PROGRAM STRATEGIES, AND DESIGN RECOMMENDATIONS TO MAINTAIN AND PROTECT TREES IN PUBLIC PLACES; AND FURTHER AUTHORIZING THE VILLAGE MANAGER TO IMPLEMENT THE TREE MANAGEMENT PLAN AS RECOMMENDED BY THE VILLAGE'S TREE ADVISORY BOARD; AND PROVIDING FOR AN EFFECTIVE DATE.

BACKGROUND AND ANALYSIS:

One of the Village's sustainability goals is to preserve the existing natural environment by providing adequate tree canopy as trees are an important part of a community. They provide aesthetic, environmental, and economic benefits. Their natural beauty and grace create a sense of place and soften the urban landscape. Their shade creates pleasant walking environments in our neighborhoods and business districts. They are habitat for wildlife. Trees also produce economic benefits by reducing the costs associated with storm water runoff, reduction of air pollution, and energy consumption. An abundance of trees is an important infrastructure that creates a positive urban image and enhances the aesthetic appeal of the Village.

The attached Tree Management Plan as recommended by the Village's Tree Advisory Board dated May 2016 (copy of Tree Management Plan is attached as Exhibit A) is the method of implementing our comprehensive program to maintain and improve our tree canopy. This plan will provide guidance for tree management within the Village and strategies for implementing action items. This plan will also guide the operation of the Village's community tree program, including planting, removal, pruning, trimming and other tree work necessary to achieve and maintain a quality, thriving community forest. In an effort to thoroughly assess the current tree coverage in public places, in 2014 the Village applied for and was awarded a grant from the United States Department of Agriculture (USDA) Forest Service through the Florida Forest Service's Urban and Community Forestry Plan Grant Program to inventory and assess the tree canopy in Village owned rights-of-way, public facilities and parks. The Village hired a qualified consultant to create a tree inventory and a GIS database to include the location, species, size, and health, of trees planted within the street rights-of-way, public facilities and parks. All data was entered into a computerized tree inventory accessible to Village staff via the Village's GIS database.

The Tree Management Plan is the next step in the street tree canopy management planning process. The first step in the process was taking an inventory of all the trees and stumps along the street right of ways (ROW) and in parks. The second step involved the review, analysis, assessment of existing tree population, and inventory of the entire city. The development is the culmination of all the prior steps where the Tree Board evaluated the inventory data provided in 2015 and created a street tree management plan.

In order to protect the Village of Palmetto Bay's community of trees and to ensure that it remains one of Palmetto Bay's finest assets, the Village Council created a Tree Advisory Board in 2008. In 2015, the board commenced developing a written management plan that would provide a systematic approach to all tree-related activities within the Village and that would provide guidelines for Village staff to administer the tree program. The recommended Tree Management shall serve as the basis for prioritization, scheduling and budgeting for the management of the Village's community forest, to assure tree health and survival. This plan will provide long term benefits and reduced liability through the elimination of hazardous conditions and the creation of a more diverse canopy with increased resistance to disease and storm events. The Plan will further serve as a blueprint to guide the Village in maintaining and increasing the overall public tree canopy. The Tree Management Plan solidifies and further advances the Village's sustainability efforts by improving air quality, mitigating storm water runoff, and enhancing walkability.

FISCAL/BUDGETARY IMPACT:

There is no budgetary impact. The budget will be reviewed on an annual basis to make tree/landscape related funding recommendations using the general policies established by the tree board regarding tree removal, planting, and maintenance. Funding will be available and budgeted for this item under "Special Revenue Fund-Transportation Sales Tax" in an amount up to \$2.00 per capital on an annual basis.

RECOMMENDATION:

Approval is recommended.

Attachments:

Exhibit A (Tree Management Plan)



VILLAGE OF PALMETTO BAY

TREE MANAGEMENT PLAN

*A guide for the maintenance, improvement and preservation of tree canopy
in the Village of PALMETTO BAY*

**AS RECOMMENDED BY TREE ADVISORY BOARD
FOR VILLAGE COUNCIL APPROVAL**

MAY, 2016

Tree Management Plan

Acknowledgments

The Village of PALMETTO BAY wishes to thank everyone who contributed to the preparation and development of the Village of PALMETTO BAY Tree Management Plan. Many people have donated their time, energy, expertise and enthusiasm to its creation. Special acknowledgment should be given to the members of the PALMETTO BAY Tree Advisory Board: Chairman, Henry Clifford, Craig Grossenbacher, Don Pybas, Rainer Schael, Anthony Sabbag, and Director of Public Works, Corrice Patterson, and Administrative Assistant to Public Works, Luz Dominguez.

Introduction

Trees, (small and large plants, and palms) are an important part of our Village. They provide aesthetic, environmental, and economic benefits. Their natural beauty and grace create a sense of place and soften the urban landscape. Their shade creates pleasant walking, driving, and bicycling environments in our neighborhoods and business districts. They provide important habitat for wildlife. Trees also produce economic benefits by reducing the costs associated with stormwater runoff, reduction of air pollution, and energy consumption and by increasing property values. According to the article *"22 Benefits of Urban Street Trees"* by Dan Burden, Senior Urban Designer, Summer 2006, *"For a planting cost of \$250-\$600 (which includes the first 3 years of maintenance), a single street tree returns over \$90,000 of direct benefits (not including aesthetics, social and natural) in a lifetime of the tree."*

This Tree Management Plan is the method of implementing our comprehensive program to maintain and improve our tree canopy. This plan will provide guidance for tree management within the Village of PALMETTO BAY and strategies for implementing the stated goals and objectives of the plan. This plan will guide the implementation of the Village's community tree program, including planting, removal, pruning, trimming and other tree work necessary to achieve and maintain a quality, thriving community forest.

This Tree Management Plan shall serve as the basis for prioritization, scheduling and budgeting for the management of the Village's community forest, to assure tree health and survival. This plan will provide long term benefits and reduced liability through the elimination of hazardous conditions and the creation of a more diverse canopy with increased resistance to disease and storm events.

It is the intention of the Tree Advisory Board that the Tree Management Plan be reviewed and amended, as deemed necessary by the Tree Advisory Board.

The Tree Management Plan is divided into five (5) sections; 1) Tree Inventory Action Plan, 2) Significant Natural Forested Areas, 3) Funding and Budgeting Action Plan, 4) Five Year Action Plan, and 5) References List.

1. Tree Inventory Action Plan

In 2014 the Village of PALMETTO BAY created a tree inventory and a GIS database. The Village hired a qualified consultant to determine the location, species, size, health, and replacement value of trees with a diameter at breast height (DBH) greater than two inches. The study revealed there are 25,566 trees made up of nearly 200 species in the Village's Right-of-Way, public facilities and parks. The data collected included, but was not limited to, unique identification number, species, trunk diameter, condition, primary maintenance needs, and location of each tree inventoried. All data was entered into a computerized GIS tree inventory accessible to Village staff via the Internet.

Please refer to the current Tree Inventory, Attachment A.



Action Item 1A: The Village will perform routine updates to the tree inventory as changes occur.

Updates to the tree inventory shall occur as trees are removed and/or replaced. All "tree work orders" will be forwarded to the tree inventory database manager.



Action Item 1B: The Tree Advisory Board will provide an Annual Summary Report and Work Plan to the Village of PALMETTO BAY, with respect to species composition, diversity, health factors, and prioritization, contained in the most current Tree Inventory.

Species Composition: In 2014 there were close to two-hundred different tree species in PALMETTO BAY's street rights-of-way and parks comprised mainly of 3,938 Live Oak, followed by the Pygmy Date Palm (2,412); Christmas Palm (1,535); Queen Palm (1,456); Black Olive (1,193); Coconut Palm (1,043); and many others.

Species Diversity: Data showing the distribution of different species within the Village will be referenced in selecting species for the planting programs to assure a healthy mix of diverse species along PALMETTO BAY's streets, in parks and other public spaces.

Health Assessment: The tree inventory rates the overall condition of the trees as (1) excellent, (2) average, (3) poor, (4) insect damaged, (5) physically damaged, or (6) under stress.

Priorities List: Because there are many needs throughout the Village, a priority list will be established in the Annual Summary Report and Work Plan. Examples of general priorities include:

1. Trees that are dead, dying or diseased will be removed/replaced.
2. Trees that are prohibited under Village Code Section 30.100.3(d)(1) or County Code will be removed/replaced.
3. Trees that obstruct visibility on streets and at intersections (motorist/pedestrian safety) will be pruned or removed.
4. Trees that interfere with pedestrian safety on sidewalks will be pruned or removed.



Action Item 1C: A comprehensive update to the GIS Tree Inventory will be conducted every five (5) years to contain the information from Action Items 1A and 1B, above, DBH data, and other pertinent information.

Diameter at Breast Height (DBH): DBH is measured at four (4) feet above the adjacent ground surface. The age and size of the trees within PALMETTO BAY's community forest range from the small, young trees in the neighborhoods built within the last decade to the much larger, mature trees. The tree inventory is a useful body of information on PALMETTO BAY's community forest. The Tree Inventory, updated at five-year intervals, will provide a useful measure of the composition and condition of the public trees within the community. This information can be worked in various ways to assist in the tree management program. For example,

1. Inventory information on the DBH can be sorted to show where there are concentrations of the largest (oldest, aging) trees, the areas and neighborhoods of newest (youngest, smallest) street trees, and the distribution of a large middle category of mature community forest - well established, substantial trees.
2. DBH information is an indicator of size and age of a tree. This can be informative from the "big picture" level and can be used to project zones of corridors in the community where different tree maintenance techniques and practices may apply. It is not a diagnostic tool; a young tree is not healthy by virtue of its youth, nor is a noble mature specimen automatically in decline because of its size and age.



Action Item 1D: A "windshield assessment" of the health of the trees in the community forest shall be conducted annually by the Tree Advisory Board and Village staff.

This assessment is not intended to be comprehensive or all inclusive. It is intended for the sole purpose of providing useful information to Village staff with respect to tree concerns and safety issues, so that proactive and expedient action can be taken, when warranted.

2. Significant Natural Forested Areas

In addition to the substantial street tree canopy of the Village of PALMETTO BAY, significant natural forested areas remain within the Village. These forested areas were beyond the scope of the initial Tree Inventory and therefore were not surveyed.

Some of the largest and most environmentally sensitive forests within the Village are located on public lands such as the pine rockland / hardwood hammock at the Deering Estate and the pine rockland at Coral Reef Park. Other significant forested areas are located on privately owned lands, which in some cases have little or no regulatory protections under applicable laws and may not be properly managed or maintained. Prior to development, large areas of the Village consisted of pine rocklands and over 98% countywide (outside of

Everglades National Park) of our pine rockland forest have been destroyed by development over the years. It is notable that the Village Council passed a resolution relating to the preservation of pine rocklands around August 2015 in recognition of the globally imperiled status of this forest type. Because of the intrinsic aesthetic and environmental values provided to the Village and its residents, this Tree Management plan includes management considerations for these significant forested areas.



Action Item 2A: The Tree Advisory Board and Village staff will perform an annual assessment of publicly owned forested areas with respect to impacts to the Village and acquisition possibilities.

Publicly owned forested areas that are in poor condition (not currently being maintained) include the exotics dominated site on the south side of Richmond Dr. between SW 88 Ct. and SW 88 Ave. This Miami-Dade County owned site has been added to the surplus list to be sold to a private developer unless the Village was to seek conveyance of it or some type of partnership with Miami-Dade County as a pocket park with a restored canopy of appropriate native trees.



Action Item 2B: The Tree Advisory Board and Village staff will perform an annual assessment of privately owned forested areas, after obtaining permission from the property owner, with respect to impacts to the Village and partnership possibilities.

Privately owned forested areas include moderate to high quality pine rocklands such as those located in the FPL transmission corridor between Old Cutler Rd. and the former Cutler Power Plant as well as the pine rocklands and hammock located along the east side of Old Cutler Rd. between SW 184 St. and SW 177 St.

3. Funding and Budgeting Action Plan

Funding for the tree program comes from a variety of sources, such as:

1. General Fund, Tree Program Departments, Line Item
2. Donations of money and time from local businesses and community organizations
3. Grants (Community Forestry, Arbor Day, Tree City, etc.)



Action Item 3: The Tree Advisory Board will review budgets annually (est. May or June) to make tree/landscape related funding and budget recommendations to the Village Council for incorporation into the PALMETTO BAY Village Annual Budget (fiscal period, Oct. 1 - Sept. 30).

Budget amounts for tree management activities are based on past expenditures for removal, tree planting, general maintenance and storm-damage clean up, and on recommendations from the Public Works Director, Community Development Manager, and Department of

Public Services Superintendent. Funding and budgeting amounts and percentages can fluctuate due to resident cost share participation and grant awards. The following table is a guideline for funding allocation for annual tree related activities:

ACTIVITY	PERCENT OF ANNUAL BUDGET
Removal of hazardous, prohibited, dead, and declining trees	20%
Tree maintenance activities (trimming, pruning, etc.)	40%
Tree Planting	35%
Administrative Activities	5%

4. Five Year Action Plan



Action Item 4: The Tree Advisory Board will establish a “Five Year Action Plan” to serve as a guide for the Board’s goals and objectives for a five (5) year period.

A five year action plan will be implemented every five (5) years to help ensure implementation of the Tree Management Plan as well as the Tree Advisory Board’s goals and objectives for a healthy and thriving urban forest in the Village of PALMETTO BAY.

5. Reference List

The following reference list may be used by the Village of PALMETTO BAY and the Tree Advisory Board as a tool in implementing the goals and objectives of the Tree Management Plan and Five Year Work Plan:

1. Florida Department of Agriculture, Grades and Standards for Nursery Plants, 2015
2. FPL Right Tree Right Place.
<https://www.fpl.com/reliability/trees/tree-location.html?cid=aliasrighttree>
3. Albers, et al. 2003. Urban Tree Risk Management: A Community Guide to Program Design and Implementation. USDA Forest Service Northeastern Area State and Private Forestry.
4. Duryea, Mary L., Eliana Kampf, Ramon C. Littel, and Carlos D. Rodriguez-Pedraza. 2007. Hurricanes and the urban forest: II effects on tropical and subtropical tree species. *Arboriculture & Urban Forestry* 33, no. 2: 98-112.
<http://hort.ifas.ufl.edu/treesandhurricanes/documents/pdf/EffectsOnTropicalAndSubtropicalTreeSpecies.pdf>
5. Gilman, E.F. University of Florida IFAS. 2011. Tree Assessment, evaluation, and risk. <http://hort.ifas.ufl.edu/woody//hazard-trees.shtml>
6. Gilman, E. F. 2003. Branch-to-stem diameter ratio affects strength of attachment. *Journal of Arboriculture* 29, no. 5: 291-294.
7. International Society of Arboriculture (ISA). 2005. Trees are Good, Recognizing Tree Hazards. <http://www.treesaregood.com/treecare/hazards.aspx>
8. USDA Forest Service Northeastern Area. Undated. A Guide: Developing a Street and Park Tree Management Plan. Northeast Center for Urban and Community Forestry, Holdsworth Natural Resources Center, University of Massachusetts, Amherst, MA. V/
9. Miami-Dade County Guide for Street Tree Planting.
http://www.miamidade.gov/parks/library/guide_tree_book.pdf
10. The UF Miami-Dade Extension Office, Is My Tree Safe? Recognizing Conditions that Increase the Likelihood of Tree Failure - <http://edis.ifas.ufl.edu/ep507>
11. The Miami-Dade Extension "Low-Maintenance Landscape Plants for South Florida" -
<http://miami-dade.ifas.ufl.edu/old/programs/fyn/publications/dtpl.htm>

Village of Palmetto Bay
Tree Inventory within ROW's
EXHIBIT "A"

Tree Species within Palmetto Bay City ROW's		Quantity
1	African Oil Palm	9
2	Akee	1
3	Allspice	3
4	Areca Palm	447
5	Australian Pine	200
6	Avocado	52
7	Bald Cypress	13
8	Bamboo Cluster	2
9	Bamboo Palm	19
10	Banana Tree	20
11	Banyan	3
12	Baobab	5
13	Barbados Cherry	1
14	Bird of Paradise	6
15	Bismark Palm	330
16	Black Mangrove	1
17	Black Olive	1193
18	Blue Latan Palm	2
19	Bottle Palm	256
20	Bottlebrush	199
21	Bougainvillea	11
22	Brazilian Beauty Leaf	30
23	Brazilian Pepper	34
24	Buccaneer Palm	8
25	Cabbage Palm	411
26	Canary Island Date Palm	396
27	Carpentaria Palm	5
28	Carrotwood	3
29	Cassia sp.	1
30	Ceiba sp.	1
31	Cherry Tree	1
32	Chinese Fan Palm	462
33	Chinese Tallow	2
34	Christmas Palm	1535
35	Citrus sp.	2
36	Coconut Palm	1043
37	Crepe Myrtle	37
38	Crown of Thorns	4
39	Cuban Tamarind	2
40	Custard Apple	1
41	Cycad Palm	15
42	Dahoon Holly	9
43	Date Palm	25
44	Desert Cassia	14
45	Dracanea	65
46	Dwarf Schefflera	1
47	Elderberry	2
48	Eucalyptus	22

Village of Palmetto Bay
Tree Inventory within ROW's
EXHIBIT "A"

	Tree Species within Palmetto Bay City ROW's	Quantity
49	European Fan Palm	7
50	Fiddlewood	3
51	Firebush	38
52	Fishtail Palm	21
53	Florida Thatch Palm	291
54	Foxtail Palm	314
55	Frangipani	150
56	Gardenia	2
57	Glaucous Cassia	71
58	Golden Shower Tree	59
59	Grandfather Palm	1
60	Green Buttonwood	80
61	Guava	6
62	Gumbo Limbo	582
63	Hawaiian Thai	2
64	Hibiscus	12
65	Hong Kong Orchid	107
66	Indian Rosewood	11
67	Ironwood	3
68	Island Marlberry	1
69	Italian Cypress	15
70	Jacaranda	23
71	Japanese Blueberry	231
72	Japanese Fern Tree	35
73	Japanese Privet	282
74	Java Bishopwood	180
75	Java Plum	9
76	Jelly Palm	21
77	Juniper	10
78	Kapok	6
79	Lang Jujube	1
80	Lantana	1
81	Laurel Oak	7
82	Lead Tree	15
83	Lignum Vitae	3
84	Lime Tree	2
85	Live Oak	3938
86	Longan Tree	8
87	Loquat	3
88	Lychee	7
89	MacArthur Palm	81
90	Magenta Cherry	1
91	Mahogany	783
92	Majesty Palm	1
93	Mango	236
94	Marlberry	1
95	Mimosa	1
96	Montgomery Palm	781
97	Mulberry	1

Village of Palmetto Bay
 Tree Inventory within ROW's
 EXHIBIT "A"

Tree Species within Palmetto Bay City ROW's		Quantity
98	Myrsine	1
99	Neem Tree	5
100	Nickerbean	1
101	Norfolk Island Pine	56
102	Oleander	10
103	Orange Geiger	20
104	Papaya	6
105	Paradise Tree	16
106	Paurotis Palm	51
107	Peregrina	49
108	Pigeon Plum	30
109	Pink Cassia	6
110	Pink Tabebuia	175
111	Pitch Apple	56
112	Plantain	1
113	Podocarpus	21
114	Poisonwood	3
115	Pond Apple	1
116	Pongam	39
117	Ponytail Palm	10
118	Powderpuff Tree	6
119	Pressed Cedar	12
120	Prickly Ash	1
121	Prickly Pear Cactus	1
122	Princess Palm	1
123	Pygmy Date Palm	2412
124	Queen Crepe Myrtle	26
125	Queen Palm	1456
126	Red Bay	4
127	Red Cassia	1
128	Red Maple	8
129	Royal Palm	972
130	Royal Poinciana	496
131	Rubber Tree	2
132	Sago Palm	11
133	Sapodilla	28
134	Satin Leaf	15
135	Saw Palmetto	6
136	Screw Pine	58
137	Sea Grape	63
138	Senegal Date Palm	105
139	Senna sp.	19
140	Shady Lady	2
141	Shaving Brush Tree	1
142	Silk Floss Tree	8
143	Silk Oak	2
144	Silver Buttonwood	201
145	Simpson's Stopper	3
146	Slash Pine	45

Village of Palmetto Bay
Tree Inventory within ROW's
EXHIBIT "A"

Tree Species within Palmetto Bay City ROW's		Quantity
147	Snow on Mountain	1
148	Solitaire Palm	474
149	Southern Magnolia	11
150	Spanish Bayonet	3
151	Spanish Stopper	9
152	Spindle Palm	172
153	Spiny Licuala	2
154	Starburst Clerodendron	29
155	Starfruit Tree	9
156	Sterile Cross	2
157	Strangler Fig	143
158	Strawberry Guava	10
159	Sugar Apple	1
160	Sunshine Palm	4
161	Sweet Bay	3
162	Tamarind	29
163	Texas Wild Olive	19
164	Travelers Palm	30
165	Triangle Palm	98
166	Tropical Almond	29
167	Umbrella Tree	69
168	Viburnum Shrub	6
169	Washington Palm	470
170	Weeping Fig	153
171	White Geiger	3
172	Wild Lemon	1
173	Wild Lime	1
174	Wild Tamarind	14
175	Willow Busic	2
176	Winin Palm	1
177	Woman's Tongue	14
178	Yellow Poinciana	42
179	Yellow Tabebuia	73
Total Number of Trees in Inventory within City ROW's		23,797

PROPOSED
RESOLUTION

