On Wed, Dec 9, 2015 at 1:32 PM, Mier, Jena <Jena.Mier@nexteraenergy.com> wrote:

> Sorry for any confusion. I tried sending this on my cell phone but for some reason the written response I had provided was not included. Below is our response to go with the attachments previously sent.
>
> **The following summarizes the commitments from the September 16, 2015 meeting:**
> 1. **FPL will extend the proposed fencing along the western edge of the laydown area to the Land Utilization building, to add further protection for crocodiles in addition to the fencing along the construction access roadways.**
> 2. **FPL will mitigate for the impacts to panther habitat associated with the construction access roadway improvements. As detailed in Randy Kautz' 2013 report (attached), a total of 743 PHUs (2.5:1 ratio) will be acquired from an agency-approved panther mitigation bank to offset impacts equivalent to 297 PHUs.**
> 3. **FPL will provide specific mitigation to offset the loss of shorebird habitat at the Units 6 & 7 Site, as detailed in the Conditions of Certification.**
> 4. **FPL will update the pre-clearing survey target species to include the pineland croton (*Croton linearis*), a non-listed plant that supports the endangered Bartram's scrub-hairstreak (*Strymon acis bartrami*) and Florida leafwing (*Anaea troglodyta floridalis*).**
> 5. **As requested, attached is a copy of the evaluation of potential off-site locations for the FPL Reclaimed Water Treatment Facility and pipeline, submitted as response 4-MDC-B-2 with TP Units 6 & 7 Completeness Responses (Round 4) in February 2011 (see Attachment 1).**
> 6. **During the shorebird monitoring effort at Units 6 & 7 in accordance with Conditions of Certification B(III)(F)(1), FPL will also include monitoring within Assessment Area 10.**
> 7. **Attached are the Conditions of Certification related to threatened and endangered species, to summarize commitments related to avoidance/minimization, monitoring, and mitigation (see Attachment 2). The complete Conditions of Certification can be found here: http://publicfiles.dep.state.fl.us/Siting/Outgoing/Web/Certification/pa03_45_2014_units6_7.pdf**
> 8. **Attached are figures illustrating the location of the West Consensus and West Preferred Corridors and their proximity relative to wood stork colonies (see Attachment 3).**
> 9. **FPL's Avian Protection Plan is included as Appendix A of the Biological Assessment.**
> 10. **Attached is the Conceptual Earthwork and Materials Disposal Plan, illustrating the conceptual design for muck storage that prevents discharge of material to the cooling canal system (see Attachment 4).**
> 11. **Excerpts from the Condition of Certification documenting FPL's commitment to remove the temporary construction access roadway improvements (see Attachment 5).**
> 12. **MDC's Natural Areas Management Plan is attached (see Attachment 6).**
>
> **With respect to shorebird mitigation, attached is a brief summary of FPL's commitments, including an excerpt from the Conditions of Certification, location of Assessment Area 10, and summary of other activities within the off-site mitigation areas that are designed to benefit shorebirds (see Attachment 7). We can revise the 2012 Mitigation Plan (USACE Supplement) to**

include these commitments – you are correct that these commitments occurred after the Mitigation Plan was submitted.

With respect to pine rocklands, attached is a brief summary of avoidance and minimization efforts as well as a figure submitted during the SCA Completeness Responses and referenced in the Conditions of Certification identifying a transmission line design that minimizes impact within the Kings Highway pine rocklands (see Attachment 8). The design illustrated on Figure MDC(3)4-2 limits impacts to <1 acre, uses previously disturbed portions of the existing right-of-way to the greatest extent practicable for access and structure pads, and avoids construction of a continuous road through the area. All areas of construction will be isolated from adjacent areas through installation of silt fencing to limit disturbance. As detailed in Section 1.1.3 of FPL's Biological Assessment "*Preclearing plant surveys will be conducted to aid in location of access roads and transmission line structure pads to avoid impacts to (*listed*) plant species. Relocation of unavoidable individuals to undisturbed areas of the transmission line right-of-way may be conducted, if feasible. Due to the small area of suitable habitat, preclearing plant surveys, and relocation of unavoidable individuals, the potential for adverse impacts to these (*listed*) plant species resulting from the Project is minimal*."

With regards to avoidance and minimization, Section 1.0, pages 3-5 of the 2012 Mitigation Plan (USACE Supplement) (also in the July 2011 Mitigation Plan Rev 2 submitted during SCA Completeness Round 5) provides a summary of the Project's efforts to avoid and minimize impacts to wetlands in accordance with Section 404(b)(1) guidelines. Sections 5.0 and 6.0 of the FPL Biological Assessment provide descriptions of avoidance/minimization efforts and the suite of conservation measures FPL has proposed in order to avoid and minimize impacts to listed species, such as pre-clearing surveys, relocation of listed plants, wildlife fencing, underpasses, culvert replacement, as well as maximizing use of existing rights-of-way and existing disturbed areas of the Turkey Point Plant to the greatest extent practicable.

Please let us know if you have any additional questions or need any additional information.

Jena S. Mier, PWS
Project Manager
Environmental Services

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From: Mier, Jena
Sent: Monday, December 07, 2015 9:32 AM
To: Pitts Patrick; Wrublik John M.
Cc: Bullock Karl; Orthen, Richard; Proctor jr., Kennard; Raffenberg, Matthew
Subject: Units 6&7 section 7 consultation/mitigation

Patrick and John-

See our response below. Let me know if you have any questions. Thanks.

Jena S. Mier, PWS
Project Manager
Environmental Services

ATTACHMENT 1

Completeness Response 4-MDC-B-2

SECTION B – WASTEWATER REUSE

4-MDC-B-2 (Fourth Round)

This item remains incomplete and information previously requested must be provided to allow the County to determine whether the proposed project meets the requirements of Miami-Dade County Code, zoning regulations, including Resolution Z-56-07, and the CDMP, in order to prepare the reports required by section 403.507 F.S. FPL states in its latest response to this item that the "pipeline will be co-located with existing roadways." The Applicant must identify all such roadways where co-location is proposed. Regarding the SW 107 Avenue corridor, the Applicant must clarify whether it would be possible to construct the pipeline under the roadway within this corridor and rebuild the roadway upon completion and whether it intends to construct any portion of the pipeline in or along the SW 107 Avenue alignment. Condition 17 of Z-56-07 requires FPL to improve sheet flow for upgrades to be constructed within the portions of the transmission line corridors located within the CERP Biscayne Bay Coastal Wetlands (BBCW) Project; however, the Applicant has submitted no information to describe how sheet flow will be *improved* in the BBCW areas where construction is proposed within the transmission line corridor. Miami-Dade County acknowledges FPL's statement that sheet flow will not be impeded. However, FPL has provided no information describing the methods or features FPL proposes to improve sheet flow necessary pursuant to Z-56-07 if these or any other proposed upgrades to the transmission corridor were to be installed. In addition, please provide the results of FPL's evaluation of the sheet pile containment method to reduce wetland impacts during construction as discussed in FPL's latest response to this item.

RESPONSE:

As illustrated in SCA Figure P9.0.0-3, the various preliminary routes identified north of the C-102 Canal between the FPL transmission line right-of-way and the MDWASD treatment plant are within or adjacent to existing roadways. Similarly, co-location with existing roadways is proposed to the south with the transmission patrol road, with the existing Turkey Point Plant access road, and with the L-31E canal access roadway.

An analysis of the impacts and costs associated with construction of the pipeline within alternate corridors which include the SW 107th Avenue right-of-way was conducted. The results verified that a route within the transmission line right-of-way is the preferred location. Please see Figure 4MDC-B-2a for the location of the routes evaluated. Two routes utilizing SW 107th Avenue were evaluated (Routes 2 and 3); the results were compared to Route 1 within the proposed corridor.

CRITERIA	PROJECT NEED/ CONSIDERATION	ALTERNATE RECLAIMED PIPELINE ROUTES		
		Route 1	Route 2	Route 3
Landuse Impacts	Minimize impact	85.7 acres	105.1 acres	85.4* acres
Wetlands	Avoid and minimize impacts to wetlands, mitigate for time lag associated with in-situ restoration	38.35 acres temporary wetland impact (5.3 UMAM credits)	32.33 acres temporary wetland impact (3.0 UMAM credits)	18.96* acres temporary wetland impact (1.1 UMAM credits)

Approximate Pipeline Length/ Construction Cost	Minimize unnecessary expenditures	9.42 miles - $115.9 million (not including easement acquisition)	11.44 miles - $140.7 million (not including easement acquisition)	13.92 miles - $171.2 million (not including easement acquisition)
Private Property Owners Affected	Avoid/minimize unnecessary impacts to neighbors	Affects 24 private property landowners	Affects 56 private property landowners	Affects 60 private property landowners

*Portions of Route 3 co-located with temporary construction access roadway improvements south of SW 328th Street excluded from acreage calculations.

The SW 107th Avenue right-of-way is approximately 50' wide; installation of the pipeline requires a 75' wide temporary construction area. Therefore, not only would use of the SW 107th Avenue routes require complete removal and reconstruction of existing public roadways, but would also require acquisition of additional temporary construction easements over adjacent private lands. Similar constraints on width of existing right-of-way and need to acquire additional construction easements on private lands occur within Route 2 and 3 segments along SW 117th Avenue, SW 112th Avenue, and SW 320th Street. In addition, Routes 2 and 3 are 2 and 4.5 miles greater in length, respectively, as compared to Route 1, which increases pipeline construction costs by approximately $25 million (Route 2) and approximately $55 million (Route 3). These estimates do not include the additional costs of construction easement acquisition upon private lands. Any changes to the currently proposed design may entail increased costs or other impacts that may require revisions to the Joint Participation Agreement between FPL and MDC. In accordance with the Joint Participation Agreement, MDC will be responsible for any increased material and labor costs.

Areas adjacent to the SW 107th Ave right-of-way are primarily disturbed wetlands, many historically converted to agricultural uses; use of the SW 107th right-of-way would reduce temporary wetland impacts by approximately 6 acres (Route 2) and 19 acres (Route 3). For Route 3, the portion of Segment 6 south of SW 328th Street is co-located with the FPL-proposed temporary construction access roadway improvements on SW 117th Avenue and SW 359th Street. Installation of the pipeline within this portion of the route would be within the boundary of the proposed roadway improvements, therefore no additional land use or wetland impacts were included for this portion of Route 3 in the current analysis.

It is acknowledged that use of SW 107th Avenue would reduce impacts to mangrove wetlands, however it should be noted that many of the wetlands within Route 1 located to the west of the existing transmission line patrol road will be impacted during installation of the permitted Florida Gas Transmission Company pipeline. The proposed location of the FPL reclaimed water pipeline will maximize utilization of these previously-disturbed areas, as well as the existing patrol road, to reduce wetland impacts to the greatest extent practicable. All areas of temporary wetland impact associated with pipeline installation will be restored, and mitigation provided to offset the time lag associated with natural regeneration of wetland vegetation. Supplemental planting of wetland vegetation will be conducted if natural regeneration does not meet restoration success criteria with regards to vegetative cover.

Installing the pipeline within the transmission line right-of-way will reduce the length and corresponding cost associated with installation, minimize use of public rights-of-way, minimize the number of private property owners affected, minimize acquisition of additional construction easements adjacent to public rights-of-way, and allow utilization of previously disturbed wetlands.

FPL will design and construct the reclaimed water pipeline to maintain existing sheet flow throughout its final right-of-way. Condition 17 provides, in part, "[i]mprovements to sheet flow such that the corridors do not impede the flow of ground or surface waters will also be required where transmission corridor upgrades in this area are necessary for power distribution as a result of this project." The reclaimed water pipeline will not adversely affect improvements to sheet flow made or planned in connection with FPL's transmission facilities.

With respect to the utilization of sheet piling for pipeline installation, the use of sheet piles can reduce the trench width of pipeline construction therefore providing some reduction of the overall pipeline construction footprint. However with large diameter pipelines such as the 72 inch diameter pipe for this Project, the excavator will need to be located within the trench sheet pile wall area thus controlling the minimum trench width. It is anticipated that the reduction in the pipeline construction footprint using sheet piles would be approximately 17 percent. The cost of using a sheet pile wall for this pipeline will increase the pipeline cost by approximately 80 percent per foot of pipeline length where sheet piles are used. The use of sheet piles would add approximately $57,000,000 to the pipeline cost. FPL will utilize all practicable methods to reduce and eliminate wetland impacts during pipeline installation. Upon selection of the final right-of-way for pipeline installation, specific locations where wetland impacts may be reduced through minimization of slope widths associated with trench excavation will be identified. This information will be available post-certification as an outcome of detailed construction planning.

In response to MDC's previous request (3-MDC-B-3), FPL investigated the possibility of relocating the FPL reclaimed water treatment facility and evaluated several potential locations, both on and off the Turkey Point plant property. The reclaimed water treatment facility is a facility required for Turkey Point 6 & 7 to use reclaimed water as a primary cooling water source. The efficient operation, security and compatibility with commercial arrangements related to development of the facility are essential issues to be considered when evaluating the feasibility of any location for the reclaimed water treatment facility. It was determined that locations on the Turkey Point plant property meet the feasibility requirements for operations, security, and compatibility with commercial arrangements. Locations off of the Turkey Point plant property add complexity to all three important elements and do not provide feasible options for plant operation.

Based on reviews conducted at other operating plants and previous FPL experience with other reclaimed water projects, FPL has determined that an on-site location for the RWTF is essential to effective integration of reclaimed water into the project. Changes to the location of the RWTF complicate and negatively impact the relationship between the seller (MDC) and buyer (FPL) of reclaimed water services. Inherent in the current commercial arrangement is the concept that the pipeline is fully owned and operated by MDC. Repositioning of the FPL owned and operated RWTF within that portion of the MDC owned and operated pipeline would necessarily restrict the quality requirements and usage of portions of the MDC pipeline downstream of the FPL facility. Additionally, there are operational advantages to managing the reclaimed water quality immediately upstream of the cooling towers. This allows the operational staff to manage the water quality into the makeup reservoir, which is located on the plant Site and to immediately respond to any reclaimed water issue that affect plant operation. If the reclaimed water treatment facility is located offsite, the ability to respond would be effected and would change the plan for operation and potentially impact staffing. In addition, due to the distance from Turkey Point, an independent security team would need to be maintained for the reclaimed water treatment.

The siting opportunities for the reclaimed water treatment facility off of the Turkey Point site are all located between the SDWWTP and Turkey Point. The parcels identified that have suitable acreage to support the reclaimed water treatment facility are either not owned by FPL. In addition, any facility in this area will be within or adjacent to the footprint of the Biscayne Bay Coastal Wetlands Project study area, and separated from another existing facilities. FPL believes that locating the reclaimed in this area has a greater opportunity to fragment the landscape in an area identified for restoration. Locating the reclaimed water treatment facility at Turkey Point keeps the facility within the plant property and adjacent to other existing industrial facilities.

FPL has identified an additional potential site in an area of lower quality wetlands at the Turkey Point Plant. The additional location is an area historically dredged in association with the test cooling canal evaluations, and currently consists of upland spoil piles dominated by Australian pine, excavated open water canals, an upland access pathway, sawgrass marsh, dwarf mangroves, and exotic wetland hardwoods (Figure 4-MDC-B-2b on the attached CD at Attachments\4-MDC-B-2). Use of this significantly disturbed area would reduce wetland impacts by approximately 8 acres (18%) and reduce the associated functional loss by approximately 7 credits (21%) as compared to the current location. Should the alternate site be selected, the pipeline route would be modified south of Palm Drive to connect to the facility. The modification to the pipeline route will incur 5.3 acres of temporary wetland impact.

The FPL reclaimed water treatment facility stormwater management system presented in revised SCA Appendix 10.8 on the attached CD at Attachments\4-MDC-A-18 is typical of the system that would be used at locations with similar topographical and vegetative characteristics.

4-MDC-B-3 (Fourth Round)

No additional information has been provided. This item remains incomplete and information previously requested must be provided to allow the County to determine whether the proposed project meets the requirements of Miami-Dade County Code, zoning regulations, including Resolution Z-56-07, and the CDMP, in order to prepare the reports required by section 403.507 F.S. The information FPL must provide shall include previously requested information relating to deposition of pollutants from the proposed cooling towers, the projected level of chloride corresponding to the TDS concentration of 53.4 mg/l referenced in FPL's response, and must specify with a map the location where this concentration is projected to occur. The information submitted must indicate whether this concentration includes rainfall dilution and what the concentration increase (both in TDS and chlorides) will be without rainfall dilution at this site. Please provide the specific citations from Florida Statutes and Florida Administrative Code in support of FPL's assertion that antidegradation standards and OFW standards would not apply to contaminants entering surface waters from operation of the cooling towers. Please indicate whether the 0.84 mg/l TDS concentration includes rainfall dilution and what the concentration increase would be without rainfall at this site and specify with a map the location where this concentration is projected to occur. In addition, please provide the expected level of chloride increases in the freshwater (constructed) crocodile ponds located within and near the cooling canal system.

RESPONSE:

FPL has continued to provide additional information requested by the County on constituents in deposition. In 1st Round Plant and non-Transmission Completeness Response MDC-B-3 (October,

ATTACHMENT 2

Conditions of Certification Related to Threatened and Endangered Species

STATE OF FLORIDA

DEPARTMENT

OF

ENVIRONMENTAL PROTECTION

Proposed

Conditions of Certification

Florida Power & Light Company

Turkey Point Plant Units 6 & 7

PA 03-45A3

November 4, 2013

G. Traffic Control Plan:

A temporary traffic control plan for handling construction related traffic is needed subject to the requirements and standards prior to construction affecting state-owned transportation facilities. The plan will be submitted as a post-certification submittal under Condition of Certification XIX and will need to be approved by Florida Department of Transportation prior to construction affecting State-owned transportation facilities.

H. Best Management Practices

Traffic control during facility construction and maintenance State-owned transportation facilities will be subject to the standards contained in the US Federal Highway Administration's Manual on Uniform Traffic Control Devices; Rule Chapter 14-94, Statewide Minimum Level of Service Standards, F.A.C.; Florida Department of Transportation's Design Standards for Design, Construction, Maintenance and Utility Operation on the State Highway; Florida Department of Transportation's Standard Specifications for Road and Bridge Construction; and Florida Department of Transportation's Utility Accommodation Manual, whichever is more stringent. It is recommended that the Licensee encourage transportation demand management techniques by doing the following:

- Placing a bulletin board on site for car pooling advertisements.
- Requiring that heavy construction vehicles remain onsite for the duration of construction to the extent practicable.

[Chapter 334, F.S.; Rule 14-96, F.A.C.; FPL Stipulation -6/25/13]

IV. FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

A. Listed Species Conditions

The following table (Table 1) contains state and federally listed species that occur in the State of Florida and may occur within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way. The table contains species that are potentially impacted by the activities proposed on the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way. Therefore, these conditions of certification apply to the species listed in this table that are found within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way. Listed Species Occurring or Potentially Occurring in the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way as of October 2011[1]:

Table 1. State and Federally Listed Species for Florida

Common Name	Scientific Name	Status
American alligator	*Alligator mississippiensis*	FT*
American crocodile	*Crocodylus acutus*	FT
American oystercatcher	*Haematopus palliatus*	SSC
Bald eagle	*Haliaeetus leucocephalus*	**

Black skimmer	*Rhynchops niger*	SSC
Brown pelican	*Pelecanus occidentalis carolinensis*	SSC
Eastern indigo snake	*Drymarchon couperi*	FT
Everglades mink	*Mustela vison evergladensis*	ST
Florida manatee	*Trichechus manatus latirostris*	FE
Florida Panther	*Puma concolor coryi*	FE
Least tern	*Sterna antillarum*	ST
Little blue heron	*Egretta caerulea*	SSC
Limpkin	*Aramus guarauna*	SSC
Piping plover	*Charadrius melodus*	FT
Reddish egret	*Egretta rufescens*	SSC
Rivulus	*Rivulus marmoratus*	SSC
Roseate spoonbill	*Platalea ajaja*	SSC
Snowy egret	*Egretta thula*	SSC
Tricolored heron	*Egretta tricolor*	SSC
White-crowned pigeon	*Patagioenas leucocephala*	ST
White ibis	*Eudocimus albus*	SSC

[1]Species legal statuses are subject to change. Recent changes to 68A-27, Florida Administrative Code (F.A.C.) make it likely that statuses of species listed may change before the Licensee commences work. The licensee shall refer to the law in effect at the time it begins an activity subject to being affected by listed species regulations.

FE = Federally-designated Endangered; FT = Federally-designated Threatened; ST = State-designated Threatened; SSC = State Species of Special Concern

* Due to similarity to another federally threatened species

** While the bald eagle has been both state and federally delisted, it is still governed by the state bald eagle management plan and the federal Bald and Golden Eagle Protection Act.

Note: Florida's Endangered and Threatened species rule changed in November 2010. The list is now comprised of federally designated endangered and threatened species or state designated threatened species. Additionally, the Species of Special Concern (SSC) designation has been retained in the rule until those species designated as SSC are evaluated for listing as state designated threatened species.

[Chapters 68A-27 and 68A-16, Florida Administrative Code (F.A.C.); FPL Stipulation – 6/7/13]

B. General Listed Species Survey

1. Prior to conducting detailed surveys, the Licensee shall coordinate with the Florida Fish and Wildlife Conservation Commission (FWC) to obtain and follow the current listed species (in accordance with Article IV, Section 9 of the Florida Constitution and Rule

68A-27, FAC) and follow the current survey protocols for these listed species that may occur within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way, as well as implement appropriate buffers within FPL property or rights of way as defined by the listed species' survey protocols.

2. Surveys shall be conducted prior to clearing and construction in accordance with the survey protocols. The results of those detailed surveys shall be provided to FWC in a report, and coordination shall occur with the FWC on appropriate impact avoidance, minimization, or mitigation methodologies.

[Article IV, Sec. 9, Fla. Const; Section 379.2291, and 403.5113(2), F.S.; and Chapter 68A-27, F.A.C.; FPL Stipulation – 6/7/13]

C. Specific Listed Species Surveys

Before land clearing and construction activities within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way occur, the Licensee shall conduct an assessment for listed species which shall note all habitat, occurrence or evidence of listed species. Listed species to be included in this survey shall include the bald eagle and those species listed as threatened, or species of special concern by the FWC or those listed as endangered or threatened by U.S. Fish and Wildlife Service (USFWS). Wildlife surveys shall be conducted during the reproductive or "active" season for each species that falls before the projected clearing activity schedule unless otherwise approved by the FWC or USFWS. For species that are difficult to detect, the Licensee may make the assumption that the species is present and plan appropriate avoidance/mitigation measures after consultation with FWC. The Licensee will submit avoidance/mitigation measures for FWC post-certification review and approval at least 60 days prior to commencing clearing or construction activities within the surveyed area.

1. This survey shall be conducted in accordance with USFWS/FWC guidelines and methodologies by a person or firm that is knowledgeable and experienced in conducting flora and fauna surveys for each potentially occurring listed species.

2. This survey shall identify any wading bird colonies within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way that may be affected.

3. This survey shall identify locations of breeding sites, nests, and burrows for listed wildlife species. Nests and burrows shall be recorded with GPS coordinates, identified on an aerial photograph, and submitted with the final listed species report. Although nests and burrows may be recorded individually with GPS, the FWC prefers that any applicable protection radii surrounding groups of nest sites and burrows be included on a site specific basis, rather than around individual nests and burrows, and be physically marked so that clearing and construction shall avoid impacting them.

4. This survey shall include an estimate of the acreage and percent cover of each existing vegetation community (Florida Land Use, Cover and Forms Classification System, or FLUCFCS, at the third degree of detail) of each community that is contained within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way prior to land clearing and construction activities using GIS. Examples of such wildlife-based habitat classification schemes include Florida's State Wildlife

Action Plan (FWC 2005), Descriptions of Vegetation and Land Cover Types (FWC 2004), or Natural Communities Guide (FNAI 1990).

[Article IV, Sec. 9, Fla. Const; Section 379.2291, F.S; and Chapters 68A-27, 68A-4, 68A-16, F.A.C.; FPL Stipulation – 6/7/13]

D. Listed Species Locations

Where any suitable habitat or evidence is found of the presence of listed species, including but not limited to those specified in E-J below, within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way, the Licensee shall report those locations to, and confer with, the FWC or FWS as appropriate to determine whether additional pre-clearing surveys are warranted, and to identify potential mitigation, or avoidance recommendations. If pre-clearing surveys are required by FWC and FWS as appropriate and as specified in these conditions of certification, they shall occur in the reproductive season prior to the anticipated date for the start of construction within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way. The Licensee shall not construct in areas where evidence of listed species was identified during the initial survey until the particular listed species issues have been resolved as follows:

1. Listed Wildlife Species:

If listed wildlife species are found, their presence shall be reported to the DEP SCO, the FWC, and the USFWS.

2. Species Management Plan:

If total avoidance of state-listed wildlife species is not feasible, the Licensee shall consult with the FWC to determine the steps appropriate for the species involved to avoid, minimize, mitigate, or otherwise appropriately address potential impacts. For wildlife species, these steps shall be memorialized in a Species Management Plan and submitted to the FWC for review and approval.

[Article IV, Sec. 9, Fla. Const; Sections 379.2291, 403.507 and 403.5113(2), F.S.; and Chapter 68A-27, F.A.C.; FPL Stipulation – 6/7/13]

E. Bald Eagle

1. The Licensee shall avoid impacts to bald eagle (*Haliaeetus leucocephalus*) nests where possible. If construction activities cannot be avoided within a 660-foot nest buffer zone, construction activities shall be conducted consistent with the FWC Eagle Management Guidelines as outlined in the FWC-approved Bald Eagle Management Plan dated April 9, 2008 (or any subsequent FWC-approved versions). In areas where bald eagle nests are present, all reasonable and practicable efforts shall be made to avoid construction activities during the nesting season (October 1 - May 15, or when eagles are present before October 1 or after May 15).

2. In accordance with the FWC Eagle Management Guidelines, for construction areas that fall within 330 feet of an active or alternate bald eagle nest, as defined in the Bald Eagle Monitoring Guidelines, construction activities shall be conducted only during the non-nesting season (May 16 - September 30). Any construction activities that fall within 660

feet of the nest during the nesting season shall be conducted following USFWS-approved Bald Eagle Monitoring Guidelines, dated 2007, or subsequent USFWS-approved versions.

3. In areas where adverse impacts to nests cannot be avoided, resulting in nest disturbance, the information required for an FWC Eagle Permit shall be obtained from the FWC, as authorized by Rule 68A-16.002, F.A.C., and minimization and conservation measures outlined in the FWC Bald Eagle Management Plan shall be followed, as applicable.

[Article IV, Sec. 9, Fla. Const.; Section 403.507, F.S.; Rule 62-17.191, F.A.C.; Chapter 68A-27, F.A.C., and Rule 68A-16.002, F.A.C.; FPL Stipulation – 6/7/13]

F. Shorebirds

1. Surveys shall be conducted in potential shorebird nesting habitat within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way to identify and document the presence of nesting seabirds and shorebirds (shorebird) included in the attached list. Nesting shorebird surveys shall be conducted by trained individuals (Shorebird Observer) with proven shorebird identification skills and avian survey experience. Credentials of the Shorebird Observer will be submitted to the FWC South Region Species Conservation Biologist (See Section A, Condition XVIII. Agency Addresses) for review and approval at least 2 weeks before commencing clearing or construction activities. Shorebird Observers will use the following survey protocols:

a. Shorebird Observers must review and become familiar with the general information and data collection protocol outlined on the FWC's Florida Shorebird Database website (www.FLShorebirdDatabase.org). An outline of data to be collected, including downloadable field data sheets, is available on the website.

b. The nesting season is April 1 – September 1 for seabirds, but flightless young may be present through September. The American oystercatcher may initiate nesting as early as March 15. Nesting season surveys must begin on the first day of nesting season (March 15 in areas where American oystercatchers have historically nested, or April 1 elsewhere) or 10 days prior to commencing clearing or construction activities (including surveying activities and other pre-construction presence), whichever is later. Surveys must be conducted through August or until all nesting activity has concluded, whichever is later. If the survey results determine that no listed species are found and no nesting is occurring, and clearing or construction commences prior to the next nesting season, then no additional surveys are required in the survey area, with the exception of ground nesting species, which must be surveyed for daily pursuant to the remainder of these conditions.

Nesting season surveys shall be conducted in all potential shorebird nesting habitat within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way boundaries that may be impacted by construction or pre-construction activities during the nesting season.

c. During the pre-construction and construction, surveys for detecting new nesting activity in shorebird nesting habitat will be completed on a daily basis prior to movement of equipment, operation of construction vehicles, or other activities that could potentially disrupt nesting behavior or cause harm to the birds or their eggs or young.

d. Surveys shall be conducted by walking the length of all nesting habitat within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated

linear non-transmission facilities rights of way and visually inspecting, using binoculars or spotting scope, for the presence of shorebirds exhibiting nesting behavior.

i. If an ATV or other vehicle is needed to cover large project areas, operators will adhere to the FWC's Best Management Practices for Operating Vehicles on the Beach (Attachment E). The vehicle must be operated at a speed <6 mph and be run at or below the high-tide line. The Shorebird Observer will stop at no greater than 200 meter intervals to visually inspect for nesting activity.

e. Once any nest is confirmed by the presence of a scrape, eggs, or young, the Shorebird Observer will notify the Regional Biologist (See Section A, Condition XVIII. Agency Addresses) within 24 hours. All breeding and nesting activity will be reported to the Florida Shorebird Database website within one week of data collection.

2. If nesting behavior is observed within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way, the Licensee shall establish a 300 ft-wide buffer zone around any location within FPL property or rights of way where shorebirds have been engaged in nesting behavior, including territory defense. All construction-related disturbances shall be prohibited in this buffer zone.

a. The width of the buffer zone shall be increased if birds appear agitated or disturbed by construction.

b. Any modifications to the 300 ft-wide buffer must be approved by the Regional Biologist (See Section A, Condition XVIII. Agency Addresses) before being implemented.

c. No construction activities, movement of construction vehicles, or stockpiling of equipment shall be allowed within a buffer zone.

d. Heavy equipment and other construction vehicles shall not be operated near nest locations when flightless chicks are present outside a buffer zone. If movement of construction vehicles or equipment is necessary, it must be accompanied by the shorebird observer who will insure no flightless birds are in the path of a moving construction vehicle and no tracks capable of trapping flightless young remain.

3. Where practicable, the Licensee will mitigate for loss of shorebird habitat in consultation with FWC.

a. For least terns, areas of gravel substrate throughout the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way, including significantly disturbed areas, may provide suitable nesting habitat. Least terns are known to use artificial nesting sites such as dredged material deposits. The existing cooling canals as part of the industrial wastewater system may contain such habitat. As mitigation for loss of least tern habitat, the Licensee will consider identifying and enhancing/creating least tern habitat in appropriate areas within the Turkey Point Site, such as, but not limited to, areas in the industrial wastewater facility. The Licensee may contact the appropriate FWC Regional Biologist when considering location and appropriate methods of enhancement or restoration as needed.

b. For shorebirds utilizing mudflat habitat, the Licensee will consider mitigation through preservation, restoration, enhancement, or a combination thereof, of similar

habitat within the Everglades Mitigation Bank or other location deemed as appropriate in consultation with the USFWS.

[Article IV, Sec. 9, Fla. Const.; Section 403.507, F.S.; Rule 62-17.191; Chapter 68A-27, and Rule 68A-16.001, F.A.C.; FPL Stipulation – 6/7/13]

G. Everglades Mink

1. A survey by an experienced biologist (individual or firm with documented experience with Everglades mink or other mustelids) shall be conducted in the reproductive season prior to the initiation of clearing activity in areas where suitable potential habitat exists within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, or associated linear non-transmission facilities rights of way, to determine whether any mink are present, and if any den areas are present. To the extent practicable, the survey shall be conducted during the mink mating season, which extends from September through November. Although chalkdusted trackboards and anal scent attractant has proven effective in detecting the Everglades mink (Humphrey and Zinn 1982), camera traps are another option.

References: Humphrey, S.R. and T.R. Zinno 1982. Seasonal habitat use by river otters and Everglades mink in Florida. Journal of Wildlife Management 46:375- 381.

2. In the event that surveys determine presence of Everglades Mink within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, or associated linear non-transmission facilities, the following measures shall be used to minimize and mitigate for potential impacts.

a. Licensee and FWC will meet to discuss the specific issues and mitigation alternatives.

b. Licensee will then provide a detailed mitigation plan to address the specific impacts, which must be reviewed and approved by FWC, and be consistent with all other COCs or federal permit conditions.

c. Licensee will provide a monitoring report after a designated period to document effectiveness of the mitigation plan.

d. Corrective action alternatives will be determined in consultation with FWC and implemented if necessary.

[Article IV, Sec. 9, Fla. Const.; Sections 379.2291, and 403.571, F.S.; Rule 62-17.660 and Chapter 68A-27, F.A.C.; FPL Stipulation – 6/7/13]

H. Florida Manatee

With respect to construction, maintenance and operation within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, or associated linear non-transmission facilities rights of way:

1. The Standard Manatee Conditions for In-Water Work (revision 2012) shall be followed for all in-water activity located where waters are accessible to manatees. These are listed in Attachment F. Blasting as a dredge method shall be prohibited in or adjacent to waters accessible to manatees, unless no other alternative exists, in which case the Licensee may request approval by FWC. An adequate Blast and Protected Species Watch Plan must be

submitted to the Imperiled Species Management Section of the FWC for post-certification review prior to these methodologies being used.

2. At least 60 days prior to the beginning of in-water construction located where waters are accessible to manatees, the Licensee shall contact the FWC to determine whether observers shall be required, how many observers will be needed and who those observers will be. If observers are recommended, manatee observers must be on site during all in-water construction activities and will advise personnel to cease operation upon sighting a manatee within 50 feet of any in-water construction activity. Any in-water work associated with construction or demolition activities shall not be performed after sunset. Movement of a work barge other associated vessels is permitted after sunset. Following project completion, a report summarizing manatee sightings, collisions or injuries shall be prepared by FPL. This report shall be submitted within 30 days following construction completion to the FWC's Imperiled Species Management Section atmailto:imperiledspecies@myfwc.com imperiledspecies@myfwc.com

3. If a cofferdam or sheet piling is used during in-water construction to minimize release of sediment, the area inside (behind) the cofferdam must be checked for the presence of manatees during and after installation of the barrier before further work occurs to determine that manatees have not been entrapped. Manatee observers are required during installation and removal of the barrier but are not required during landward construction.

4. To reduce the risk of a vessel or barge crushing a manatee, any areas within the barge turning basin at Turkey Point where mooring of vessels and barges larger than 100 ft. occurs along any solid face wharf or seawall, including the new equipment barge unloading area, the permittee shall install wharf fenders with appropriate materials to provide sufficient standoff space of at least four feet under maximum designed compression. Fenders or buoys providing a minimum standoff space of at least four feet under maximum designed compression shall also be utilized between two vessels or barges that are moored together.

[Article IV, Sec. 9, Fla. Const.; Sections 379.2291, 379.2431, and 403.507, F.S.; Rule 62-17.660 and Chapter 68A-27, F.A.C.; FPL Stipulation – 6/7/13]

I. Florida Panther

1. The Licensee shall take proper precautions during clearing and construction to protect panthers from accidental injury due to conditions within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, and associated linear non-transmission facilities rights of way during construction.

a. Construction policies and practices identified by the FWC to protect panthers shall be used by the Licensee whenever feasible. These include:

i. Limiting speeds on access roads to 45 mph or less and adjust trucking activities and material delivery schedule within the panther consultation area to reduce speeds at dawn and dusk.

ii. Conducting frequent and unannounced site inspections to monitor for compliance with the above.

b. Any panther observations (dead or alive) made by Licensee's employees or contractors shall be verified by a qualified expert agreed to by FWC and reported to FWC within 24 hours.

2. The Licensee shall take proper precautions during construction and plant operations to protect panthers from accidental injury due to vehicle collisions along access roadways in the panther consultation area as defined by the USFWS (Attachment G), including SW 359th Street, SW 137th Avenue, and SW 117th Avenue.

a. Speeds on access roads shall be limited to 45 mph or less. Passive measures shall be implemented to enforce slower speeds and shall include lighted speed signage, speed bumps, and slow speed zones at dawn and dusk, and panther crossing signage.

b. In lieu of the passive measures identified in this condition, the Licensee may choose to use exclusionary fencing along the length of SW 359th Street between SW 117th Avenue and SW 137th Avenue to prevent accidental injury and/or panther mortality due to vehicle collisions.

c. Any panther observations (dead or alive) made by Licensee's employees or contractors shall be verified by a qualified expert agreed to by FWC and reported to FWC within 24 hours.

3. The Licensee shall construct at least one (1) wildlife underpass and associated fencing to facilitate north-south movement across SW 359th Street.

a. The underpass shall be located between 117th Avenue and 137th Avenue in an appropriate location for use by panthers. The Licensee shall consult with FWC during placement of the underpass.

b. The underpass shall be of appropriate size and design to facilitate panther movement. The Licensee shall consult with FWC during design of the underpass.

[Article IV, Sec. 9, Fla. Const.; Section 379.2291 and 403.507, F.S.; Rule 62-17.660 and Chapter 68A-27, F.A.C.; FPL Stipulation – 6/7/13]

J. Rivulus

1. Prior to clearing, the Licensee shall conduct surveys for rivulus using modified bottomless lift nets (McIvor and Silverman 2010) or other approved methodology in potentially impacted mangrove habitats within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, or associated linear non-transmission facilities.

[Reference: McIvor, C. C. and N. L. Silverman 2010. Modifications to the bottomless lift net for sampling nekton in tidal mangrove forests. Wetlands Ecology and Management (published on-line)

2. If surveys determine the presence of Rivulus within the Turkey Point Units 6 & 7 Site, associated non-linear facilities, or associated linear non-transmission facilities, the following measures shall be used to minimize and mitigate for potential impacts.

a. Licensee and FWC will meet to discuss the specific issues and mitigation alternatives.

b. Licensee will then provide a detailed mitigation plan to address the specific impacts, which must be reviewed and approved by FWC, and be consistent with all other COCs or federal permit conditions.

c. Licensee will provide a monitoring report after a designated period to document effectiveness of the mitigation plan.

d. Corrective action alternatives will be determined in consultation with FWC and implemented if necessary.

[Article IV, Sec. 9, Fla. Const.; Section 379.2291 and 403.507, F.S.; Rule 62-17.660 and Chapter 68A-27, F.A.C.; FPL Stipulation – 6/7/13]

V. DEPARTMENT OF STATE – DIVISION OF HISTORICAL RESOURCES

A. Except to the extent already completed, the Licensee shall conduct a survey of sensitive cultural resource areas, as determined in consultation with DHR. A qualified cultural resources consultant will identify an appropriate work plan for this project based on a thorough review of the Certified Area. Prior to beginning any field work, the work plan will be reviewed in consultation with DHR. Upon completion of the survey, the results will be compiled into a report which shall be submitted to DHR. If practicable, sites considered to be eligible for the National Register shall be avoided during construction of the project and access roads, and subsequently during maintenance. If avoidance of any discovered sites is not practicable, impact shall be mitigated through archaeological salvage operations or other methods acceptable to DHR, as appropriate.

B. If historical or archaeological artifacts or features are discovered at any time within the Certified Area, the Licensee shall notify the SED and DHR, R.A. Gray Building, 500 S. Bronough Street, Rm 423, Tallahassee, Florida 32399-0250, telephone number (850) 487-6333, and the MDC Office of Historic Preservation at (305) 375-4958). The Licensee shall consult with DHR to determine appropriate action.

[Sections 267.061, 403.531, and 872.02, F.S.; FPL/MDC Stipulation – 6/19/13]

VI. SOUTH FLORIDA WATER MANAGEMENT DISTRICT

A. General

1. For the purposes of these conditions of certification:

a. "SFWMD real property interests" is defined as SFWMD rights-of-way, Works of the District, and any property interest evidenced by being recorded in the public records.

b. "Licensee" as used herein includes Licensee's employees, contractors, subcontractors, invitees, authorized representatives, affiliates, parent, subsidiaries, and/or anyone acting on Licensee's behalf.

2. If this Certification is transferred from the Licensee to another party, the Licensee from whom the Certification is transferred shall remain liable for corrective actions that may be required as a result of any violations that occurred prior to the transfer.

[FPL Stipulation – 5/14/13; Sections 373.044, 373.085, 373.223, 373.342, and 373.413, F.S.; Rules 40E-2.091, 40E-2.301, 40E-2.38l, 40E-3.101(1), and 40E-6.351, F.A.C.]

a. all information necessary for a complete "Airspace Letter of Determination" for all relevant structures; and

b. a copy of any approvals or determinations from the Federal Aviation Administration (FAA).

2. Prior to construction, FPL shall coordinate with Homestead Air Reserve Base regarding any proposed facilities to be located inside the impacted Height Zoning District (Inner Horizontal Surface) of HARB (Attachment Q).

[FPL Stipulation 7/16/13; MDC Resolution Z-56-07, MDC Code Sections 33-330 - 33-350, 33-388 - 33-403, 33-292 - 3-301, 33-372 - 33-387]

H. Rare, Threatened and Endangered Species

1. FPL will conduct listed species surveys for the species identified in the Miami-Dade County Comprehensive Development Master Plan Element 4, Appendices A and B of the plant and non-transmission linear facility work areas, report locations of evidence of presence of listed species and suitable habitat found to Miami-Dade County, and implement practicable wildlife and vegetation protection measures to avoid, minimize, mitigate, or otherwise address listed species issues. Listed plant surveys will be conducted by botanists experienced in the field identification and biology of rare, threatened, and endangered plants that occur in Miami-Dade County. Faunal surveys will be conducted in accordance with FWC conditions of certification Section B.IV.B and FWC regulations. All work, including preconstruction earthwork and clearing, is prohibited until FPL has demonstrated compliance with this condition prior to that portion of the work being initiated.

2. FPL will provide MDC with a copy of the results of the listed species survey conducted pursuant to Section B.IV.H.1. above within the plant and non-transmission linear facility work areas and identify any proposed wildlife protection measures that the Licensee will implement beyond those identified in these conditions of certification.

3. Pursuant to MDC Resolution No. Z-56-07, FPL shall incorporate wildlife protection features into the roadway design for all segments of the temporary access roads south of SW 344th Street. Along SW 359th Street and along the portions of SW 117th Avenue and SW 137th Avenue that are to be constructed south of SW 344th Street, wildlife exclusion fencing shall be installed and shall include small mesh material, such as silt fencing, of appropriate mesh size and height to provide an exclusion barrier for reptiles and other small animals. The SW 359th Street temporary roadway shall accommodate a minimum of two (2) wildlife underpasses west of the L-31E levee, one of which must be constructed between SW 137th Avenue and SW 117th Avenue and the other between SW 117th Avenue and the L-31E borrow canal. The bridge over the L-31E borrow canal may serve as one of the wildlife underpasses provided that the plans demonstrate it has been appropriately designed for this purpose. These underpasses shall be of adequate design and shall be constructed to facilitate the safe passage of all wildlife known to occur or to potentially occur in this area during all times of the year, including but not limited to deer, Florida panthers, bobcats, snakes, American crocodiles, and amphibians. A minimum of three (3) crocodile underpasses shall also be provided along the temporary access road immediately north of the cooling canal system. The required underpasses shall be positioned to provide safe access to the habitat.

4. FPL has documented the presence of an individual tree (*Bucida molinetii*, syn. *Bucida spinosa*, common name "spiny black olive") on an upland area within the Turkey

Point property. This exceedingly rare plant species potentially occurs in other areas where FPL has proposed impacts associated with the Units 6 & 7 project, and FPL shall make reasonable efforts to locate all individuals of this species in proposed project areas, preserve such individuals wherever possible, and relocate individuals and/or establish ex situ populations for reestablishment where preservation is not possible.

5. Where protection of rare, endangered, threatened, or potentially endangered native plants is not possible, FPL shall relocate individual plants where rare, endangered, threatened, or potentially endangered native plants, are located within a construction zone, where practical.

[FPL Stipulation – 6/20/13; Zoning Resolution No. Z-56-07, Chapter 24 of MDC Code, Comprehensive Development Master Plan Policies CON-9B and CON-9C, Comprehensive Development Master Plan Transportation Circulation Element text accompanying Figure 3.1]

I. Reclaimed Water Pipeline

a. Construction of the reclaimed water pipeline shall not adversely impact existing sheetflow and groundwater flow across the area where these features will be located. Culverts located along the alignment of the reclaimed water pipeline shall be replaced with a larger capacity culvert or conveyance as needed to accommodate increased water flows that could result from future wetland restoration projects. FPL shall provide construction plans to DEP and Miami Dade County at least 90 days prior to commencement of reclaimed water pipeline construction. The plans shall demonstrate compliance with the requirements of Miami-Dade County Code Section 24-48.3(1) (b), (d) & (e) and by reference with any applicable regulations cited within these sections.

b. Trimming or alteration of mangrove trees for the purpose of constructing or maintaining the reclaimed water pipeline is prohibited outside the reclaimed water pipeline ROW, unless exempt pursuant to Florida Statutes, and shall require a permit or written authorization and mitigation as well as restoration of the affected area.

c. Exotic vegetation in the reclaimed water pipeline ROW that occurs within wetland mitigation and restoration areas of the project shall be controlled in accordance with the Mitigation Plan Rev.2 (July 2011). Exotic vegetation in the reclaimed water pipeline ROW that occurs within the eastern transmission ROW shall be managed in accordance with the transmission exotic vegetation management conditions in Section C.VII.M. below.

d. All vegetative debris shall be removed and properly disposed of in accordance with all applicable local regulations.

e. Once the pipeline has been installed and the trench has been covered, FPL shall be responsible for restoring the pipeline corridor back to the pre-construction elevation.

f. Dewatering for construction of the reclaimed water pipeline in all areas in and adjacent to contaminated areas and in areas with chloride or nutrient concentrations exceeding county or state water quality standards shall be prohibited unless FPL demonstrates through a post certification submittal of a dewatering plan that dewatering effluent will be adequately treated prior to final discharge at the approved discharge point to ensure compliance with Section 24-42(4), Miami-Dade County Code, and other applicable water quality standards.

12. Pursuant to Section 337.402, Florida Statutes, when any public road or publicly owned rail corridor is damaged or impaired in any way because of the installation, inspection, or repair of a utility located on such road or publicly owned rail corridor, the owner of the utility shall, at his or her own expense, restore the road or publicly owned rail corridor to its original condition before such damage. If the owner fails to make such restoration, the authority is authorized to do so and charge the cost thereof against the owner under the provisions of Section 337.404, Florida Statutes.

[Section 337.402, F.S.; FPL Stipulation -6/25/13]

13. FPL shall comply with all provisions of Chapter 556, Florida Statutes, Underground Facilities Damage Prevention and Safety Act.

[Chapter 556, F.S.; FPL Stipulation -6/25/13]

14. The proposed FPL transmission line corridors will intersect and/or be co-located adjacent to facilities identified as part of the Florida Intrastate Highway System (FIHS), Strategic Intermodal System's (SIS), and State Highway System (SHS) facilities. The placement of the transmission line should take into consideration the planned widening of these facilities, including but not limited to US1, as outlined in the most recent versions of the FDOT Work Program and Miami-Dade MPO's Long Range Transportation Plan. The cost of removal, relocating, or reconstructing Project facilities within FDOT facilities will be borne by the Licensee to the extent required by Section 337.403, Florida Statutes, Rule Chapter 14-46, Florida Administrative Code and the UAM. The provisions of Section 337.403 and 337.404, Florida Statutes, apply to the transmission lines.

[Sections 337.403 and 337.404, F.S.; Rules 14-15 and 14-46, F.A.C.; FPL Stipulation – 6/25/13]

III. FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

A. Listed-Species Conditions

The following table (Table 2) contains state and federally listed species that occur in the State of Florida and are likely to occur within the transmission line corridor and associated facilities. The table contains species that are potentially impacted by the activities proposed within the corridor. Therefore, these conditions of certification apply to the species listed in this table that are found within the transmission line corridors and associated facilities. Listed Species Occurring or Potentially Occurring in the transmission line corridors and associated facilities as of June 2011[1]:

Table 2. State and Federally Listed Species in Florida

Common Name	Scientific Name	Fl status	Fed status
American alligator	*Alligator mississippiensis*	SSC	T*
American crocodile	*Crocodylus acutus*	E	T

[1] Species' legal statuses are subject to change. Recent changes to 68A-27, Florida Administrative Code (F.A.C.) make it likely that statuses of species listed may change before the Licensee commences work. The Licensee shall refer to the law in effect at the time it begins an activity subject to being affected by listed species regulations.

American oystercatcher	*Haematopus palliates*	SSC	
Bald eagle	*Haliaeetus leucocephalus*	***	***
Black skimmer	*Rhynchops niger*	SSC	
Brown pelican	*Pelecanus occidentalis carolinensis*	SSC	
Burrowing owl	*Athene cunicularia*	SSC	
Cape Sable seaside sparrow	*Ammodramus maritimus mirabilis*	E	E
Eastern indigo snake	*Drymarchon couperi*	T	T
Everglades mink	*Mustela vison evergladensis*	T	
Florida bonneted (mastiff) bat	*Eumops glaucinus floridanus*	E	
Florida black bear	*Ursus americanus floridanus*	T**	
Florida mouse	*Podomys floridanus*		
Florida Panther	*Puma concolor coryi*	E	E
Florida pine snake	*Pituophis melanoleucus mugitus*	SSC	
Florida sandhill crane	*Grus canadensis pratensis*	T	
Gopher frog	*Lithobates capito*	SSC	
Gopher tortoise	*Gopherus polyphemus*	T	
Least tern	*Sterna antillarum*	T	
Little blue heron	*Egretta caerulea*	SSC	
Limpkin	*Aramus guarauna*	SSC	
Piping plover	*Charadrius melodus*	T	T
Reddish egret	*Egretta rufescens*	SSC	
Rim rock crown snake	*Tantilla ooliticus*	T	
Roseate spoonbill	*Platalea ajaja*	SSC	
Everglades snail kite	*Rostrhamus sociabilis plumbeus*	E	E
Snowy egret	*Egretta thula*	SSC	
Southeastern American kestrel	*Falco sparverius paulus*	T	
Tricolored heron	*Egretta tricolor*	SSC	
West Indian manatee	*Trichechus manatus latirostris*	E	E
White-crowned pigeon	*Patagioenas leucocephala*	T	
White ibis	*Eudocimus albus*	SSC	
Wood stork	*Mycteria Americana*	E	E

SSC = Species of Special Concern; E = Endangered; T = Threatened
* Due to similarity to another federally threatened species
** Except in Baker and Columbia counties or in Apalachicola National Forest
*** While the bald eagle has been both state and federally delisted, it is still governed by the state bald eagle management plan and the federal Bald and Golden Eagle Protection Act.

[Chapter 68A-27, Florida Administrative Code (F.A.C.)]

B. General Listed Species Survey

1. Prior to conducting detailed surveys, the Licensee shall coordinate with the Florida Fish and Wildlife Conservation Commission (FWC) to obtain the current listed species (in accordance with Article IV, Section 9 of the Florida Constitution and Rule 68A-27,

F.A.C.) and follow the current survey protocols for these listed species that may occur within the transmission line ROW, and implement appropriate buffers as defined by the listed species' survey protocols.

2. Surveys shall be conducted prior to clearing and construction in accordance with the survey protocols. The results of those detailed surveys shall be provided to FWC in a report, and coordination shall occur with the FWC on appropriate impact mitigation methodologies.

[Article IV, Sec. 9, Fla. Const; Section 379.2291, *F.S., Sections 403.507 and 403.5113(2), F.S., and Chapter 68A-27, Florida Administrative Code (F.A.C.).*

C. Specific Listed Species Surveys

Before land clearing and construction activities within a transmission line right-of-way occur, the Licensee shall conduct an assessment for listed species which shall note all habitat, occurrence or evidence of listed species. Listed species to be included in this survey shall include the bald eagle and those species listed as endangered, threatened, or of special concern by the FWC or those listed as endangered or threatened by U.S. Fish and Wildlife Service (USFWS). Wildlife surveys shall be conducted in the reproductive or "active" season for each species that falls before the projected clearing activity schedule unless otherwise approved by the FWC or USFWS. For species that are difficult to detect, the Licensee may make the assumption that the species is present and plan appropriate avoidance/mitigation measures after consultation and FWC post certification review.

1. This survey shall be conducted in accordance with USFWS/FWC guidelines and methodologies by a person or firm that is knowledgeable and experienced in conducting flora and fauna surveys for each potentially occurring listed species.

2. This survey shall identify any wading bird colonies within the project that may be affected.

3. This survey shall identify locations of breeding sites, nests, and burrows for listed wildlife species. Nests and burrows may be recorded with GPS coordinates, identified on an aerial photograph, and submitted with the final listed species report. Although nests and burrows may be recorded individually with GPS, the FWC prefers that any applicable protection radii surrounding groups of nest sites and burrows be included, rather than around individual nests and burrows, and be physically marked so that clearing and construction shall avoid impacting them.

4. This survey shall include an estimate of the acreage and percent cover of each existing vegetation community (Florida Land Use, Cover and Forms Classification System, or FLUCFCS, at the third degree of detail) including a wildlife-based habitat classification scheme such as the Comprehensive Wildlife Conservation Strategy (FWC 2005), Descriptions of Vegetation and Land Cover Types (FWC 2004), or Natural Communities Guide (FNAI 1990) of each community that is contained within the transmission line right-of-way prior to land clearing and construction activities using GIS.

[Article IV, Sec. 9, Fla. Const; Sections 379.2291, 403.526 and 403.5317, F.S); and Chapters 68A-27, 68A-4, 68A-16, F.A.C.]

D. Listed Species Locations

Where any suitable habitat or evidence is found of the presence of listed species within the right-of-way, the Licensee shall report those locations to, and confer with, the appropriate regulatory agencies for possible additional pre-clearing surveys, including those specified in E-N below, and to identify potential mitigation, or avoidance recommendations. If pre-clearing surveys are required, they shall be timed to be reasonably compatible with the construction schedule, considering the anticipated date for the start of construction within a certified transmission corridor. The Licensee shall not construct in areas where evidence of listed species was identified during the initial survey until the particular listed species issues have been resolved as follows:

1. Listed Wildlife Species:

If listed wildlife species are found, their presence shall be reported to the DEP Siting Coordination Office, the appropriate DEP District Office(s), the FWC, the appropriate WMD, the appropriate local government(s), the USFWS, and the National Park Service as appropriate.

2. Species Management Plan:

If avoidance of state-listed wildlife species is not feasible, the Licensee shall consult with the FWC to determine the steps appropriate for the species involved to avoid, minimize, mitigate, or otherwise appropriately address potential impacts. For wildlife species, these steps shall be memorialized in a Wildlife Management Plan and submitted to the FWC.

[Article IV, Sec. 9, Fla. Const; Sections 379.2291, 403.526 and 403.5113(2), F.S.; and Chapter 68A-27, F.A.C.]

E. Gopher Tortoise

1. The Licensee shall conduct surveys for gopher tortoises (*Gopherus polyphemus*), in accordance with the FWC-approved Gopher Tortoise Management Plan (revised April 2013) and the FWC-approved Gopher Tortoise Permitting Guidelines, or subsequent FWC-approved versions of the Plan or Guidelines. A burrow survey covering a minimum of 15% of the potential gopher tortoise habitat to be impacted by development is required in order to apply for a relocation permit. Immediately prior to capturing tortoises for relocation, a 100% survey is required to effectively locate and mark all potentially occupied tortoise burrows and to subsequently remove the tortoises. Burrow survey methods are outlined in Appendix 4 of the Gopher Tortoise Permitting Guidelines, "Methods for Locating Gopher Tortoise Burrows on Sites Slated for Development". Surveys must be conducted within 90 days prior to a post-certification submittal of the online gopher tortoise relocation permit application (Temporary Exclusion Permit) to the FWC, as described in E.3 below. Surveys shall not be conducted within 30 days of any ground disturbance or clearing activities on the donor site. All surveys completed by authorized agents or other licensees are subject to field verification by the FWC. The results of the gopher tortoise surveys shall be provided to the appropriate land management state agency for portions of the transmission lines that cross state-owned lands, for informational purposes.

2. FWC is not required to provide a monitoring compliance assessment for activities that occur more than 25 feet from a gopher tortoise burrow entrance, provided that such activities do not harm gopher tortoises or violate rules protecting gopher tortoises. Examples of

such violations noted in the past by the FWC include, but are not limited to, killing or injuring a tortoise more than 25 feet away from its burrow; harassing a tortoise by blocking access to its burrow, and altering gopher tortoise habitat to such an extent that resident tortoises are taken.

3. The Licensee shall coordinate with and provide the FWC detailed gopher tortoise relocation permit application (as required by a Temporary Exclusion Permit) in accordance with the FWC-approved Gopher Tortoise Management Plan and Gopher Tortoise Permitting Guidelines as a postcertification submittal. This permit application shall provide details on the location for on-site recipient areas and any off-site FWC-approved temporary contiguous habitat, as well as appropriate mitigation contributions per tortoise, as outlined in the Gopher Tortoise Permitting Guidelines.

4. Any commensal species observed during the burrow excavations that are listed by the FWC shall be relocated in accordance with the applicable guidelines for that species.

5. To the maximum extent practicable or feasible, all staging and storage areas shall be sited to avoid impacts to gopher tortoise burrows and habitat.

[Article IV, Sec. 9. Fla. Const.; Section 403.526. FS. and Rule 62-17.660. F.A.C.: Section 379.2291. F.S.; Chapter 68A-27. F.A.C.]

F. Wood Stork Wading Bird Colonies

In order to identify the baseline conditions which may indicate the potential for impacts to wood storks and other wading birds, and to help quantify potential mitigation for such impacts, FPL will perform the following pre- and post-construction studies:

1. Pre-construction follow flight surveys shall be conducted during nesting for the currently known wood stork colonies along Tamiami Trail (East 1, East 2, and West) and the 3B Mud East Colony using fixed wing aircraft. The follow flight surveys shall be conducted both prior to and during the fledging period. The surveys would ascertain flight line corridors for the wood storks in terms of direction, numbers of birds, and altitudes. These data would be compared to existing data for the Tamiami Trail and 3B-Mud East colonies collected to date. The survey design shall be submitted to FWC for review prior to implementation.

2. A post-certification, pre-clearing aerial survey shall be conducted via fixed wing or rotary wing aircraft, between the months of December and May, once it is confirmed by FWC, USFWS or SFWMD that wading birds are nesting in the area of the proposed transmission line right-of-way. The surveys shall employ a series of two transects, along each side of the right-of-way. To minimize disturbance to the colonies, the flight(s) shall be conducted at altitudes no less than 300 feet.

a. This survey shall identify any wood stork/wading bird colonies in addition to any found from agency records that may be affected within one-half mile of the project ROW.

b. Center locations of all wood stork and wading bird colonies shall be delineated with a Wide Area Augmentation System (WAAS) enabled Global Positioning System (GPS) unit.

c. All wood stork and wading bird colonies shall be ground inspected, as aerial identification of intermediate-sized and dark-plumaged wading birds (little blue heron, tricolored heron, glossy ibis) is difficult at best and because they tend to nest below the vegetation canopy, making species identification all but impossible. To avoid flushing birds from their nests, identification of species shall be made using binoculars and surveys shall follow the protocols in Rodgers and Smith (1995).

Reference: Rodgers, J.A., and H.T. Smith. 1995. Set-back distances to protect nesting bird colonies from human disturbance in Florida. *Conservation Biology 9:89-99.*

3. For the currently known wood stork colonies along Tamiami Trail (East 1, East 2, and West) and the 3B Mud East Colony, and for any newly identified wood stork colonies within one-half mile from the corridor as a result of the above-referenced, post-certification pre-clearing survey, FPL shall implement the following measures:

a. Flight Diverters - FPL will install spiral corkscrew design bird flight diverters (or other mutually agreeable design flight diverters) on the Overhead Ground Wires (OGW) of each transmission line from a point one-half mile south of the Tamiami Trail colonies to a point one half mile north of the 3B Mud East Colony, and between points one half mile in either direction from any newly identified colonies. The point one-half mile shall be identified from the actual colony boundary to adhere to the USFWS Wood Stork Guidelines for activities within the primary boundary. Flight diverters have been shown to reduce mortality and will be installed according to the manufacturers' instructions.

b. FPL will also install perch discouragers at transmission structure pole tops and arms to address risks from nest building and streamers (defecation) and reduce the exposure and potential risk of electrocutions.

c. Mitigation Effectiveness Study - FPL will fund a monitoring study during the first wood stork nesting season after construction along the marked stretch of the transmission lines near the currently known wood stork colonies, similar to the study performed by Frederick and Deng (1997) on the FPL Levee-Midway Transmission Line. The results will be used to determine effectiveness of wood storks (and other wading birds) in avoiding the new transmission line facilities, and especially if effectiveness of marked sections of lines is significantly different from unmarked lines.

Reference: Frederick, P. and Deng, J. 1997. Bird-Strike Mortality on the Everglades Section of the Levee-Midway Powerline. Florida Power & Light Co. 27 pp.

The surveys shall generally be performed as follows:

(1) Specific study protocols including mortality monitoring and sampling biases protocols will be developed in conjunction with FWC, USFWS, and SFWMD biologists using Avian Power Line Interaction Committee (APLIC) guidelines for mitigating bird collisions with power lines.

(2) Surveys will be conducted on a regular frequency sufficient to detect mortality, such as every other day, in the mornings and in the evenings.

(3) Any dead or injured birds found will be identified, located with GPS, and collected for necropsy (if dead).

(4) Surveys will be conducted along the marked stretch of transmission line right-of-way in 100m transects, with each transect separated by 100m.

Transects shall be centered on any observed flight lines as identified in the pre-construction follow-flight surveys. Transect width shall include the right of- way width and any visible dimension on either side.

(5) Observations of flight behavior of any birds crossing the lines will also be recorded. A protocol for visual observations similar to the Frederick and Deng studies will be developed.

d. Post-survey Review - After the Mitigation Effectiveness Study has been conducted, the results will be presented to FWC. If mortality to wood storks reasonably related to collisions with the transmission lines is documented to impact the wood stork population and as determined by the USFWS Biological Opinion, FPL and the Study Investigator will meet with FWC to discuss the results of the Mitigation Effectiveness Study. The populations considered in determining impacts will be the four colonies (Tamiami East I, East 2, and West, and the 3B Mud East) and other colonies formed within one-half mile of the transmission right-of-way, based on the SFWMD's annual wading bird survey that year. If in the judgment of the FWC the wood stork population of the four colonies that year was not within "ten-year average" ranges, FPL may be required to resurvey the right-of-way in that vicinity during an additional nesting season. If the post-survey review shows that mortality to wood storks within the colonies due to collision with the transmission lines exceeds that portion of the colonies' population that is allowed by the USFWS Biological Opinion, additional mitigation measures such as, but not limited to, different configurations or greater density of flight diverters, or additional monitoring, or a combination may be required by FWC.

[Article IV, Sec. 9, Fla. Const.; Section 403.526 and F.S., Rule 62-17.660, F.A.C.; Section 379.2291, F.S.; Chapter 68A-27, F.A.C. and Rule 68A-16.001, F.A.C.]

G. Everglades Snail Kite

1. A survey (USFWS South Florida Ecological Services Office Draft Snail Kite Survey Protocol, May 18, 2004) is necessary when the project site is within the snail kite consultation area and suitable habitat is present. The following criteria can be used to judge the adequacy of the habitat for snail kites.

- Appropriate foraging habitat present [paspalidum (*Paspalidium geminatum*), spikerushes (*Eleocharis spp.*), panicum (*Panicum spp.*), or beakrushes (*Rhynchospora spp.*)].
- Perching and/or nesting substrate present, i.e., [willows (*Salix caroliniana*), melaleuca (*Melaleuca quinquenervia*), or pond cypress (*Taxodium ascendens*)]; or [sawgrass (*Cladium jamaicense*), cattail (*Typha spp.*), giant bullrush (*Scirpus validus*), or reed (*Phragmites australis*)], respectively.
- Appropriate water depth (0.2-1.3 m deep) under nesting substrate.
- Nesting substrate an adequate distance (>150 m) from upland.
- Proximity of nearest wading bird colony.

2. If suitable habitat is present or snail kites are reported on the transmission line right-of-way, the following survey procedures shall be used to document their occurrence. To maximize the chances of finding snail kites the survey shall be conducted in January to May during the breeding season. A visual survey of suitable habitat shall be made for birds and nests.

A boat may be needed for the survey as the best nesting habitat may be a considerable distance (> 150 m) from uplands. Check small trees, such as, willow, melaleuca, and pond cypress along the open water edge for nests or perching birds. If snail kites are observed, then nests can be located through the bird's behavior. When flushed from a nest the adult tends to circle upward, whereas non-nesting birds that are flushed fly more horizontally away from the disturbance (Bennetts et al. 1988). Nests also can be found by following kites carrying sticks, adults carrying apple snails, aerial courtship displays, vocalizations of adults or begging calls of the young, and through a thorough search of areas where adults are repeatedly observed (Bennetts et al. 1988).

3. In the event that surveys determine that a project transmission line has the potential to impact snail kites, the following measures shall be used to minimize and mitigate for these impacts.

- FPL and FWC will meet to discuss the specific issues and mitigation alternatives.
- FPL will then provide a detailed mitigation plan to address the specific impacts, which must be reviewed and approved by FWC, and be consistent with all other COCs or federal permit conditions.
- FPL will provide a monitoring report after a designated period to document effectiveness of the mitigation plan.
- Corrective action alternatives will be determined and implemented if necessary.

Reference: Bennetts, R.E., M.W. Collopy, and S.R. Beissinger. 1988. Nesting ecology of Snail Kites in Water Conservation Area 3A. Department of Wildlife and Range Science, University of Florida, Gainesville. Florida Cooperative Fish and Wildlife Research Unit, Technical Report No. 31, 174 p.

[Article IV, Sec. 9, Fla. Const., Section 403.526, F.S., Rule 62-17.660, F.A.C., Section 379.2291, F.S., and Chapter 68A-27 F.A.C.]

H. Bald Eagle

1. The Licensee shall avoid impacts to bald eagle (*Haliaeetus leucocephalus*) nests where possible. If construction activities cannot be avoided within a 660-foot nest buffer zone, construction activities shall be conducted consistent with the FWC Eagle Management Guidelines, outlined in the FWC-approved Bald Eagle Management Plan, dated April 9, 2008, or any subsequent FWC-approved versions. In areas where bald eagle nests are present, efforts shall be made to avoid construction activities during the nesting season (October 1 - May 15, or when eagles are present before October I or after May 15).

2. In accordance with the FWC Eagle Management Guidelines, for construction areas that fall within 330 feet of an active or alternate bald eagle nest, construction activities shall be conducted only during the non-nesting season (May 16 - September 30). Any construction activities that fall within 660 feet of the nest during the nesting season shall be conducted following USFWS-approved Bald Eagle Monitoring Guidelines, dated 2007, or subsequent USFWS-approved versions.

3. In areas where adverse impacts to nests cannot be avoided, resulting in nest disturbance, the information required for an FWC Eagle Permit shall be obtained from the

FWC, as authorized by Section 372.072, F.S., and Rule 68A-16.002, F.A.C, and minimization, and conservation measures outlined in the FWC Bald Eagle Management Plan shall be followed, as applicable.

[Article IV, Sec. 9, Fla. Const.; Section 403.526, F.S., and Rule 62-17.191, *F.A.C.; Chapter 68A-27, F.A.C., and Rule 68A-16.002, F.A.C.]*

I. Southeastern American Kestrels

The Licensee shall coordinate with the FWC prior to conducting surveys for Southeastern American kestrels *(Falco sparverius paulus)* to ensure that surveys are in accordance with the FWC-approved protocol.

1. The Licensee shall provide the FWC with the Southeastern American kestrel survey results and identify where impacts to kestrels cannot be avoided.

2. The Licensee shall mitigate loss of kestrel nest trees by placing approved nest boxes in appropriate habitat along the transmission line right-of-way where feasible, practical, and where landowner consent can be obtained, and shall follow the FWC-approved protocol for construction and installation of nest boxes.

3. The Licensee shall coordinate all nest box installation with the FWC.

[Article IV, Sec. 9, Fla. Const., Section 403.526, F.S. , Rule 62-17.660, F.A.C., Section 379.2291, F.s., and Chapter 68A-27 F.A.C.]

J. Florida Panther

The Licensee shall take proper precautions during clearing and construction to protect panthers from accidental injury due to conditions on the transmission right-of-way during construction.

1. Construction policies and practices identified by the FWC to protect panthers shall be used whenever feasible. These include:

- Limit speeds on transmission patrol roads to 45 mph or less and adjust transmission patrol road trucking activities and material delivery schedule within the panther consultation area to reduce speeds in wooded zones, at dawn and dusk.
- Conduct frequent and unannounced site inspections to monitor for compliance with the above.

2. FPL shall report any panther observations (dead or alive) by employees or contractors within 24 hours to the FWC after verification by a qualified expert.

[Article IV, Sec. 9, Fla. Const.; Section 403.526 and F.S., Rule 62-17.660, F.A.C.; Chapter 68A-27, F.A.C.]

K. Florida Black Bear

The Licensee shall take proper precautions during clearing and construction to protect black bears from accidental injury due to conditions on site during construction.

1. If there is any chance that food waste will be stored on or near the site at any time, bear-resistant garbage containers or dumpsters shall be used.

2. Additional construction policies and practices to protect bears shall be used whenever feasible. These include:

- Prohibit clearing, blasting and burning of forested habitat during the December-March denning season for bears while in a primary or secondary bear range.
- Require clean construction sites with wildlife-resistant containers for workers to use for food-related and other wildlife attractant refuse; require frequent trash removal and the use of proper food storage and removal on work sites.
- Adjust trucking activities and material delivery schedule to mandate slower speed in wooded zones, at dawn and dusk, and during the June and July breeding season for bears.
- Conduct frequent and unannounced site inspections to monitor for compliance with the above.
- FPL personnel or contractors will also report any black bear observations (dead or alive) within 24 hours to the FWC.

[Article IV, Sec. 9, Fla. Const.; Section 403.526, F.S., Section 403.5317, F.S., and Rule 62-17.660, F.A.C.; Section 379.2291, F.S.; Chapter 68A-27, F.A.C.]

L. Everglades Mink

1. A survey by an experienced biologist (individual or firm with documented experience with this species or with mustelids) shall be conducted in areas where suitable potential habitat exists in the transmission line right-of-way, prior to the initiation of construction activity, to help determine whether any mink are present in the right-of-way, and if any den areas may be present. To the extent practicable, the survey shall be done during the mink mating season, which extends from September through November. Although chalkdusted trackboards and anal scent attractant has proven effective in detecting the Everglades mink (Humphrey and Zinn 1982), camera traps are another option, and are current! y being tested as an alternate survey method in the Fakahatchee Strand (David Shindle, The Conservancy of Southwest Florida, pers. comm.)

References: Humphrey, S.R. and T.R. Zinno 1982. Seasonal habitat use by river otters and Everglades mink in Florida. Journal of Wildlife Management 46:375- 381.

2. In the event that surveys determine that a project transmission line has the potential to impact Everglades Mink on the transmission line right-of-way, the following measures shall be used to minimize and mitigate for these impacts.

- FPL and FWC will meet to discuss the specific issues and mitigation alternatives.
- FPL will then provide a detailed mitigation plan to address the specific impacts, which must be reviewed and approved by FWC, and be consistent with all other COCs or federal permit conditions.

- FPL will provide a monitoring report after a designated period to document effectiveness of the mitigation plan.
- Corrective action alternatives will be determined and implemented if necessary.

[Article IV, Sec. 9, Fla. Const.; Section 403.526, F.S., and Rule 62-17.660, F.A.C.; Section 379.2291, F.S.; Chapter 68A-27, F.A.C.]

M. Florida Manatee

With respect to construction, maintenance and operation of the project transmission lines:

1. The Standard Manatee Conditions for In-Water Work (revision 2012) shall be followed for all in-water activity located where waters are accessible to manatees. These are listed in Attachment F. Blasting as a dredge method shall be prohibited in or adjacent to waters accessible to manatees. If no other alternative exists, a modification of these conservation measures can be requested. An adequate Blast and Protected Species Watch Plan must be submitted to the Imperiled Species Management Section of the FWC for post-certification review prior to these methodologies being used.

2. At least 60 days prior to the beginning of in-water construction located where waters are accessible to manatees, the Licensee shall contact the FWC to determine whether observers shall be required, how many observers will be needed and who those observers will be. If observers are recommended, manatee observers must be on site during all in-water construction activities and will advise personnel to cease operation upon sighting a manatee within 50 feet of any in-water construction activity. Movement of a work barge, other associated vessels, or any in-water work associated with construction or demolition activities shall not be performed after sunset. Following project completion, a report summarizing manatee sightings, collisions or injuries shall be prepared by FPL and this report shall be submitted within 30 days following project completion to the FWC's Imperiled Species Management Section at imperiledspecies@myfwc.com

3. If a cofferdam is used during in-water construction to minimize release of sediment, the area inside (behind) the cofferdam must be checked for the presence of manatees during and after installation of the barrier before further work occurs to determine that manatees have not been entrapped.

[Article IV, Sec. 9, Fla. Const.; Section 403,526, F.S., Section 403.5317, F.S., and Rule 62-17.660, F.A.C.; Sections 379.2291 and 379.2431, F.S.; and Chapter 68A-27, F.A.C.]

N Avian Protection Plan

The Licensee shall coordinate with the FWC in the development of an Avian Protection Plan that delineates a program designed to reduce the operational and avian risks that result from avian interactions with transmission lines associated with the project with the goal of reducing avian mortality. Guidelines for the Avian Protection Plan can be found on the USFWS website. http://www.fws.gov/rnigratorybirdS/CurrentBirdlssuesIHazards/APP/ A VIAN%20PROTECTION%20PLAN%20FINAL %204%2019%2005 .pdf

[Article IV. Sec. 9. Fla. Const.; Section 403.526, F.S., Rule 62-17.660. F.A.C., Section 379.2291. F.S.; Chapter 68A-27. F.A.C. and Rule 68A-16.001, F.A.C.]

g. Permanent and temporary impacts to NFC and to Simpson Park outside FPL's transmission line ROW are prohibited unless the impacts are consistent with the requirements of the Section 24-49.

[FPL Stipulation –6/20/13; Resolution Z-56-07, Condition 20; Section 24-49, MDC Code; CDMP Policy CON-8C]

M. Homestead Bayfront Park

1. Within Homestead Bayfront Park, FPL will minimize impacts to the park facilities and uses to the extent practicable by:

a. Locating the new transmission line to be parallel and immediately adjacent to the existing transmission facilities within the existing easement located within the Park;

b. Maintaining, for the new transmission line, the similar span lengths and pole locations as the existing transmission facilities within the existing easement located within the Park; and

c. Using, for the new transmission lines, the same access facilities as the existing transmission facilities within the existing easement located within the Park.

2. FPL shall provide as a post-certification submittal to MDC drawings demonstrating compliance with this condition, including as-built conditions and easement boundaries.

[FPL Stipulation –6/20/13; CDMP Objective LU-3, Policy LU-3B]

N. Rare, Threatened, and Endangered Species

1. FPL shall conduct listed faunal species surveys of the transmission line rights-of-way, report locations of evidence of presence of listed species and suitable habitat found, and implement practicable protection measures to avoid, minimize, mitigate, or otherwise address listed species issues. Listed faunal species protection measures shall be in accordance with FWC regulations and FWC conditions of certification. FPL shall provide MDC with a copy of the listed faunal species survey results along the transmission line rights-of-way and confer with MDC on the proposed protection measures.

2. In areas within or immediately adjacent to natural areas including wetlands pinelands or hammocks that are anticipated to be impacted by transmission line construction, FPL shall conduct federal and state listed floral species surveys of the transmission line rights-of-way and report locations of evidence of presence of listed floral species to MDC. Where practicable FPL shall implement protection measures to avoid and minimize impacts to listed floral species. Where impacts cannot be avoided, FPL shall provide MDC notice and opportunity to salvage or remove any such listed floral species identified in the surveys prior to construction.

[FPL Stipulation –6/20/13; Zoning Resolution No. Z-56-07, Chapter 24 of MDC Code]

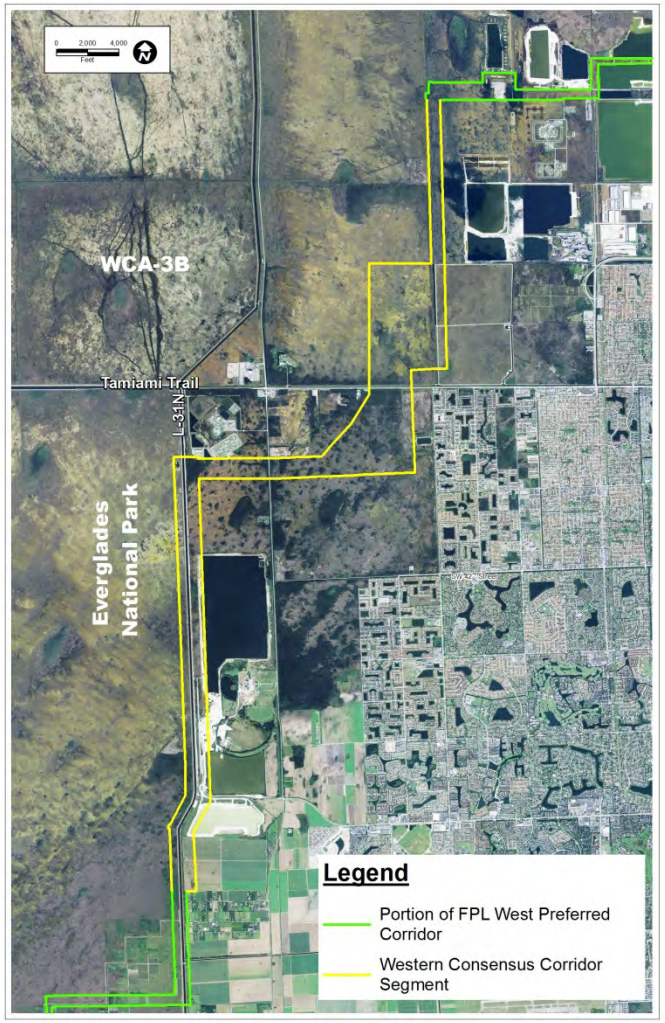
ATTACHMENT 3

Location of the West Consensus and West Preferred Corridors Relative to Wood Stork Colonies

Through the State Site Certification, an alternative corridor was adopted as the primary corridor in the west

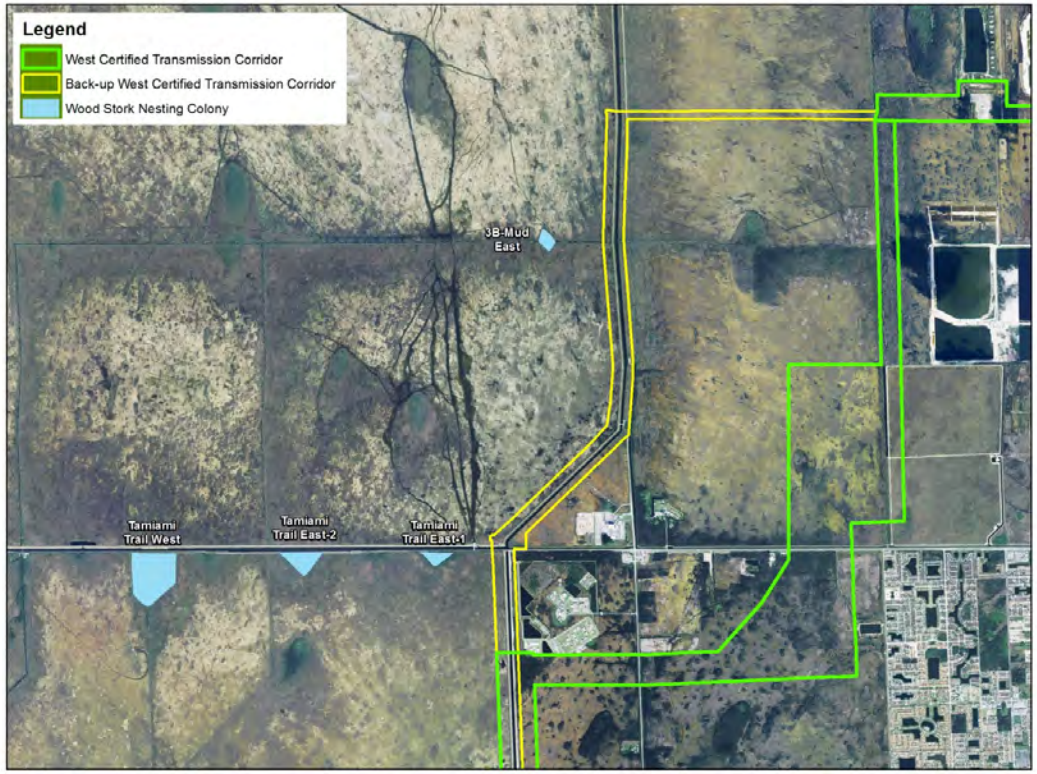
Western Consensus Corridor (WCC)

- **The WCC minimizes impacts to ENP and wetlands and increases buffer to rookeries**
- **The alternative will be dependent on MDLPA members, SFWMD and DOI for needed land rights**
- **The WCC provides land to the east of the L-31N sufficient for all structures**
  - A combination of SFWMD and MDLPA member property would be required to avoid ENP entirely
  - Conflicts with mining operations must be addressed



Wood Stork Colony Locations Relative to West Transmission Corridors

- Certified Corridors avoid all known wood stork colonies
- Four colonies exist in corridor vicinity: Tamiami East 1 and 2, Tamiami West, and 3B Mud East
- Certified Corridors cross portions of nine core foraging areas (CFAs); USFWS foraging habitat analysis based on worst-case wetland impacts will be revised upon final transmission line design



FPL

ATTACHMENT 4

Conceptual Earthwork and Materials Disposal Plan

Florida Power & Light Company, P.O. Box 14000, Juno Beach, FL 33408-0420
700 Universe Boulevard

FPL

VIA OVERNIGHT MAIL

June 3, 2011

FPLMDC-11-0232

Mr. Lee Hefty
Department of Environmental Resources Management
Miami-Dade County
Overtown Transit Village North
701 NW 1st Court, 4th Floor
Miami, FL 33136

Subject: **FPL Turkey Point Plant**
Condition 7 of Miami-Dade County Resolution Z-56-07

Dear Mr. Hefty:

Florida Power & Light Company (FPL) is providing the attached Conceptual Earthwork and Materials Disposal Plan in response to requests for information during our June 18, 2010 meeting and subsequent discussions with your Department regarding Condition 7 of Miami-Dade County Resolution Z-56-07.

If you have any questions regarding this submittal, please contact Jena Mier at (561) 691-2209 or me at (561) 691-2808.

Sincerely,

Matthew J. Raffenberg
Licensing Manager

Attachments:

Cc: Marc LaFerrier
Steve Scroggs
Barbara Linkiewicz

Florida Power & Light Company

Turkey Point Units 6 & 7 Project

CONCEPTUAL EARTHWORK AND MATERIALS DISPOSAL PLAN

Date: June 3, 2011

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TABLE OF FIGURES AND TABLES

Turkey Point Units 6 & 7 Project

CONCEPTUAL EARTHWORK AND MATERIALS DISPOSAL PLAN

1.0 Introduction and Definitions

As required by Conditions 7 and 14 of Miami-Dade County (MDC) Resolution Z-56-07 and pursuant to discussions with Miami-Dade County's Department of Environmental Resources Management (DERM), Florida Power & Light Company (FPL) has developed this Conceptual Earthwork and Materials Disposal Plan for the Turkey Point Units 6 & 7 Project work areas within the subject property boundary (see Figure 1 – 1). The purpose of this plan is to outline the general earthwork and materials management activities, precautions and Best Management Practices (BMPs) that FPL will employ to meet the substantive requirements of MDC Resolution Z-56-07 while constructing the Turkey Point Units 6 & 7 Project. Aspects of proposed earthwork activities such as, excavation and backfilling, spoils disposal, erosion control, etc., are included to provide a conceptual understanding of the earthwork to be accomplished. This conceptual plan may be modified, as necessary, prior to construction. However, the general principles for environmental protection, materials disposal and BMPs will be followed. A final plan will be submitted prior to initiation of construction.

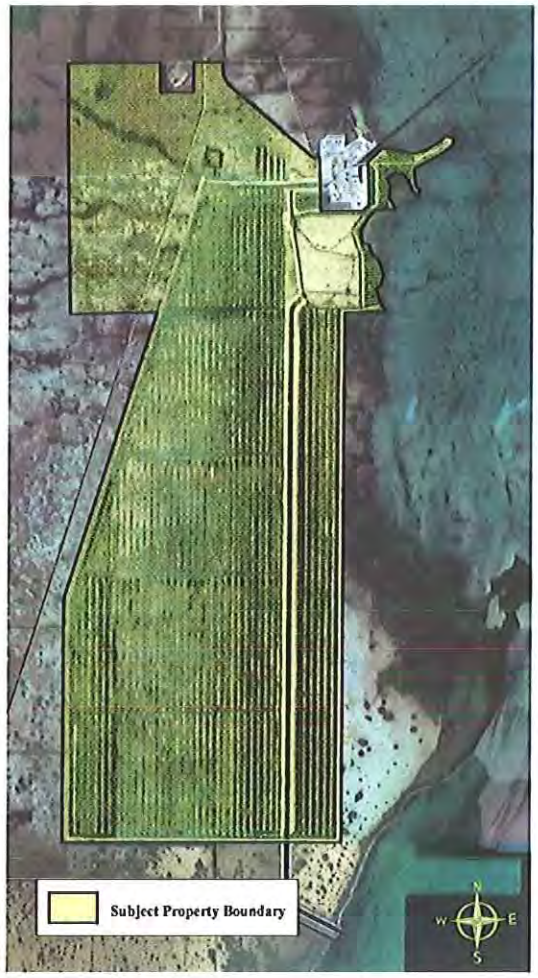

Figure 1 – 1: Miami-Dade County Resolution Z-56-07 Subject Property Boundary

For the purposes of the Conceptual Earthwork and Materials Disposal Plan for the Turkey Point Units 6 & 7 Project, the following terms are defined.

Turkey Point Units 6 & 7 Project or the Project – refers to the entire Project for which FPL seeks certification, including the Turkey Point Units 6 & 7 plant area, laydown areas to the west of the plant area and associated facilities.

Turkey Point Units 6 & 7 plant area or plant area – refers to where the new generating facilities and associated infrastructure such as the Clear Sky substation, and makeup water reservoir will be located (see Figure 3 – 1).

subject property boundary - the area identified as the "Public Hearing Subject Property Boundary " in the "Amended Letter of Intent for FPL Public Hearing Application No. 07-207 " submitted by FPL on November 5, 2007 for approval of the Turkey Point Units 6 & 7 Project and approved by MDC Resolution Z-56-07.

nuclear island - refers to the portion of the Turkey Point 6 & 7 plant area that includes the containment building, the shield building, and the auxiliary building, all constructed on a common foundation.

spoils – generic term used for the combination of excavated soil, mud, and/or dirt material which is structurally unusable as base material for building or roadway structures.

muck – approximately 4-6' layer of soil, mud, and/or dirt material resting on the Miami Limestone. Geologically, muck refers to the overlying organic soil near the plant area that can be described as either light gray–dark gray to pale brown unconsolidated calcareous silts with trace amounts of shell fragments and little to no reaction to hydrochloric acid and/or black to brown unconsolidated material with organic fibers and strong reaction to hydrochloric acid.

clean fill – material that meets the "Clean Fill" requirements described in Section 24-5 of MDC Code Chapter 24 listed below.

"Clean fill shall mean material consisting of soil, rock, sand, earth, marl, clay stone and/or concrete rubble."

2.0 Project Description

Construction of the Turkey Point Units 6 & 7 Project will be a multi-year project requiring the removal and relocation of approximately 2 million cubic yards of muck and the placement of approximately 11 million cubic yards of clean limestone (clean fill).

Affected areas within the subject property boundary include the plant and laydown areas which are located within the cooling canal system of the industrial wastewater facility. Areas for the FPL reclaimed water treatment facility and pipeline, nuclear administration and training buildings and parking areas, radial collect wells and pipeline, and access roads will also need to be modified (see Figure 2 – 1).

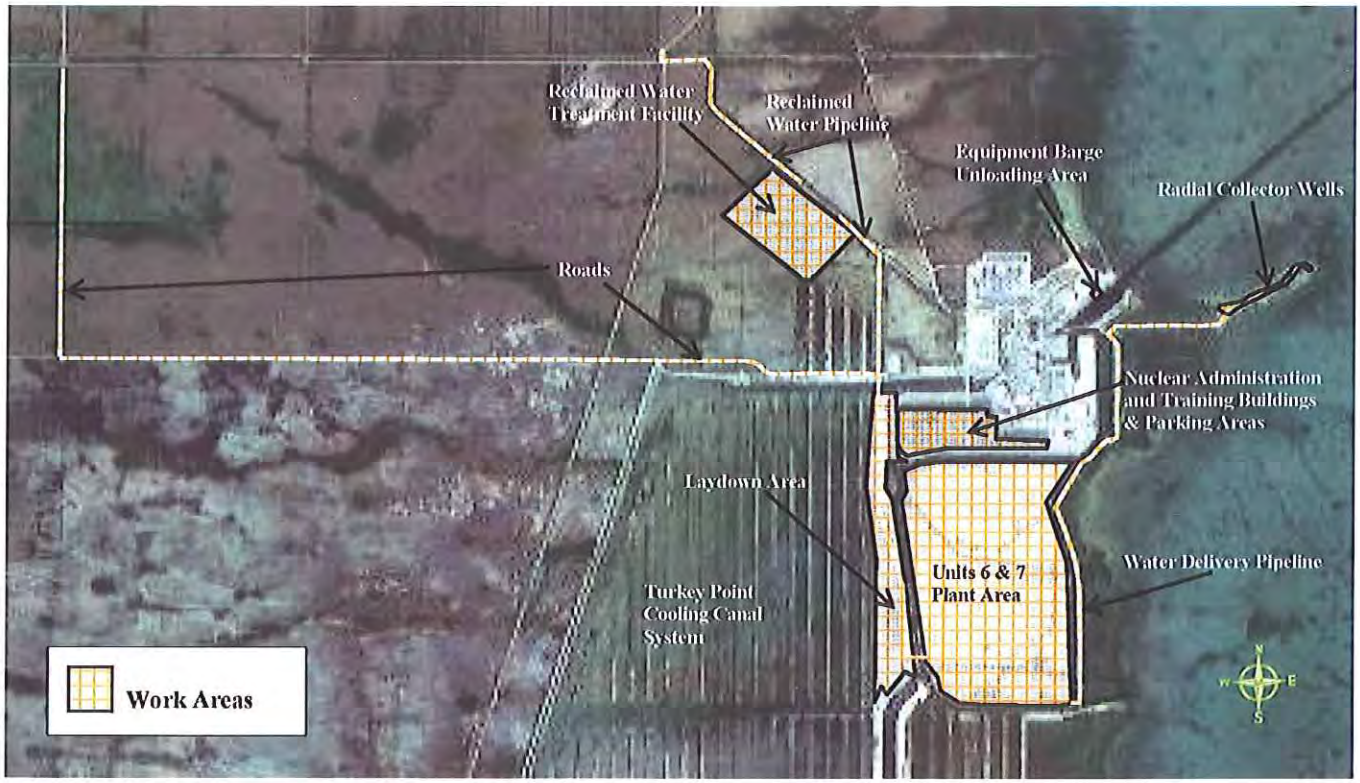

Figure 2 – 1: Turkey Point Units 6 & 7 Plant Area, Laydown and Associated Facilities

A portion of the West Preferred transmission corridor is also located within the subject property boundary of MDC Resolution Z-56-07 as shown in Figure 2 – 2 below.

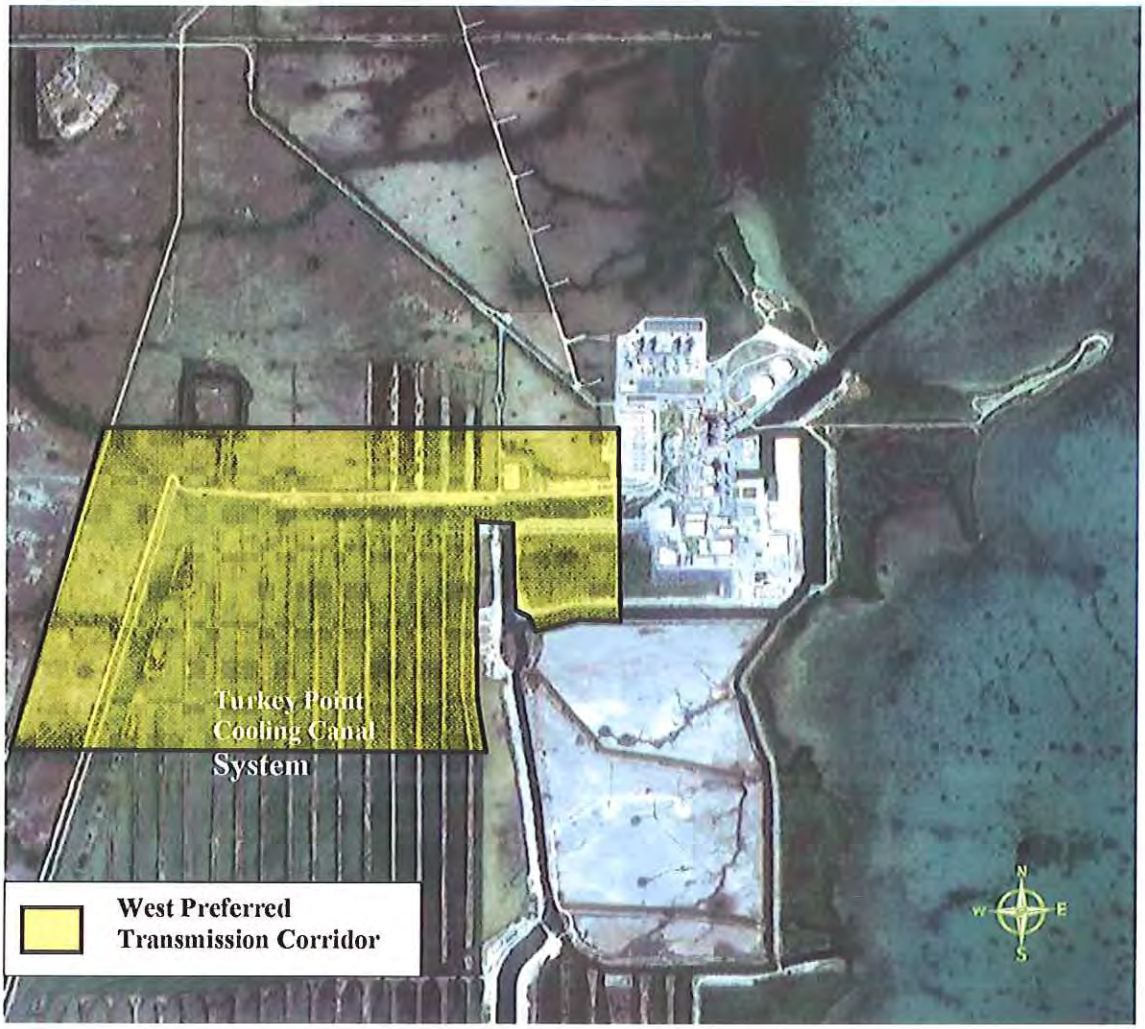

Figure 2 – 2: Turkey Point Units 6 & 7 West Preferred Transmission Corridor

Below is a description of the excavation, backfilling, spoils disposal, erosion control and dewatering activities that will be undertaken in each of these work areas as part of the construction of the Turkey Point Units 6 & 7 Project.

A description of activities common to all work areas such as; vegetation management, wildlife protection, spill protection and emergency response procedures, etc. is included in the sections of this plan.

Table 2 – 1 summarizes the earthwork and materials management activities by work area.

3.0 Plant Area

The approximately 218 acre plant area is located within the cooling canal system of the industrial wastewater facility (see Figure 3 – 1). The power blocks, makeup water reservoir, circulating water cooling towers, Clear Sky substation, and other support facilities will be constructed within the plant area.

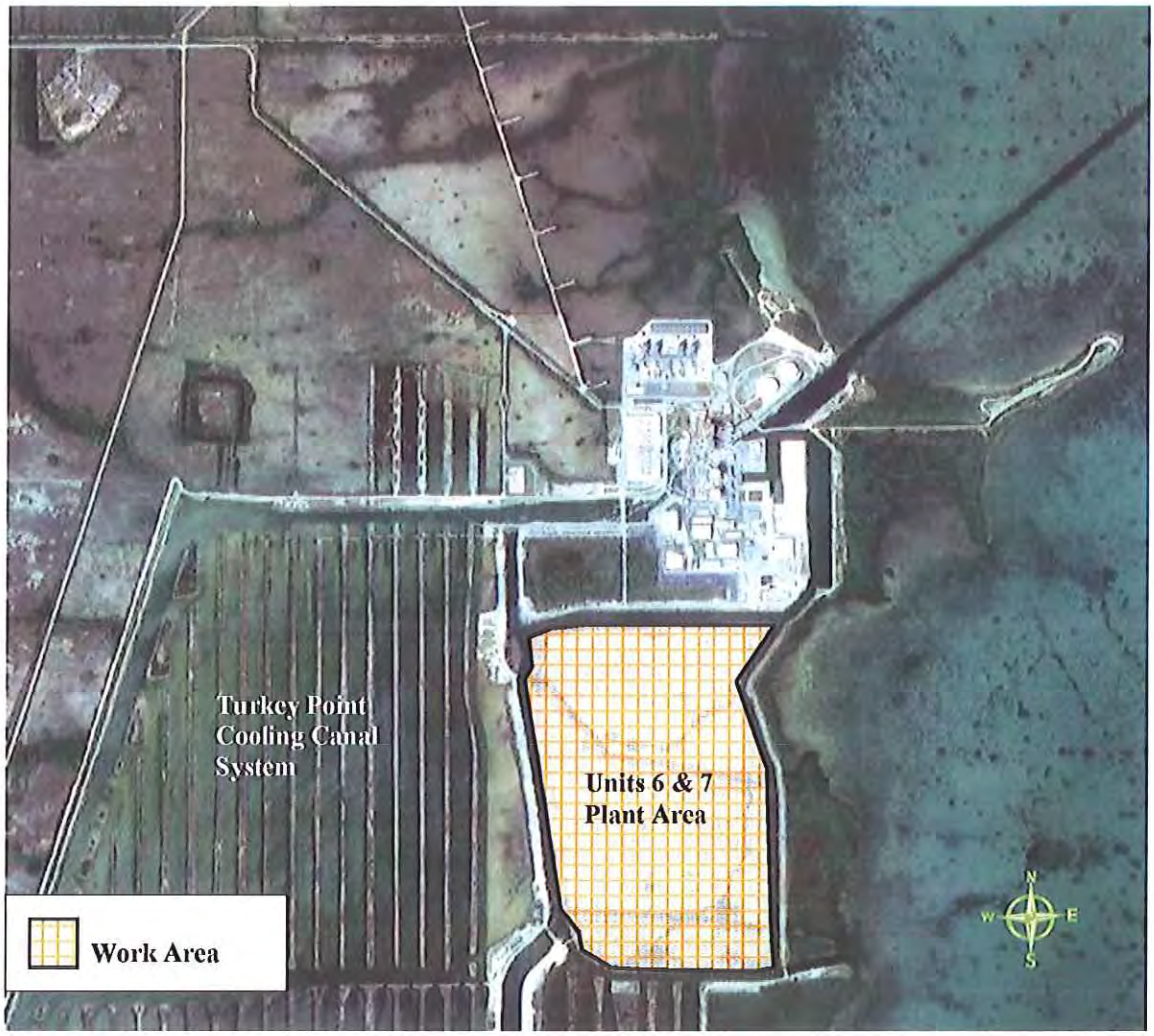

Figure 3 – 1: Turkey Point Units 6 & 7 Plant Area

3.1 Excavation

The excavation of muck from the plant area, if required, will entail removal of approximately 4 feet (ft) – 6 ft of the top layer of soil, mud, or dirt resting on the Miami Limestone. Deep excavation (excavation of the Miami Limestone layer and below) will be required for the foundations of the nuclear island which includes the containment, shield and auxiliary buildings. Excavation, backfilling, and erosion control practices, for the deep excavation areas are described in Section 4 of this plan.

3.2 Backfilling

After the plant area is excavated, clean fill will be placed in the excavated area. A total of approximately 7.8 million cubic yards of fill material is estimated for the plant area. The majority of the fill material will be supplied by off-site sources and delivered in trucks. Fill from permitted commercial sources will not be tested by FPL. If the material is from other off-site sources, FPL will meet with MDC DERM to determine the appropriate testing requirements in accordance with MDC Code Chapter 24. A portion of the fill material will be available as a result of the excavation of the areas shown in Figure 4 – 2. The excavated material will be used as fill for areas around the shield and auxiliary buildings without further chemical testing.

3.3 Spoils Disposal

Spoils from the plant area will be deposited on the berms along the east and west sides of the main return canal and along the southern canal berm of the cooling canal system within the industrial wastewater facility as shown in Figure 3 – 2. The designated spoils storage area is of sufficient capacity to accommodate the amount of spoils anticipated to be excavated from the plant area and other areas as described in this plan. Muck removed from the plant area will not be tested.

Figure 3 – 2: Spoils Storage Area

FPL will employ the Best Management Practices (BMPs) described below to minimize erosion/sedimentation impacts to the cooling canal system of the industrial wastewater facility.

During the preparation of the spoils storage area, the center of the area will be excavated to construct berms around the spoils storage area. The berm will be constructed with a height and slope sufficient to provide erosion control to prevent spoils and sediment runoff from entering the cooling canal system. The conceptual spoils storage area design is shown in Figure 3 – 3. The estimated height of the spoils pile will be determined after the spoils storage area has been surveyed and a final dirt road width for the berms has been established. It is anticipated that the final spoils elevation will be approximately 16 ft – 20 ft NAVD88.

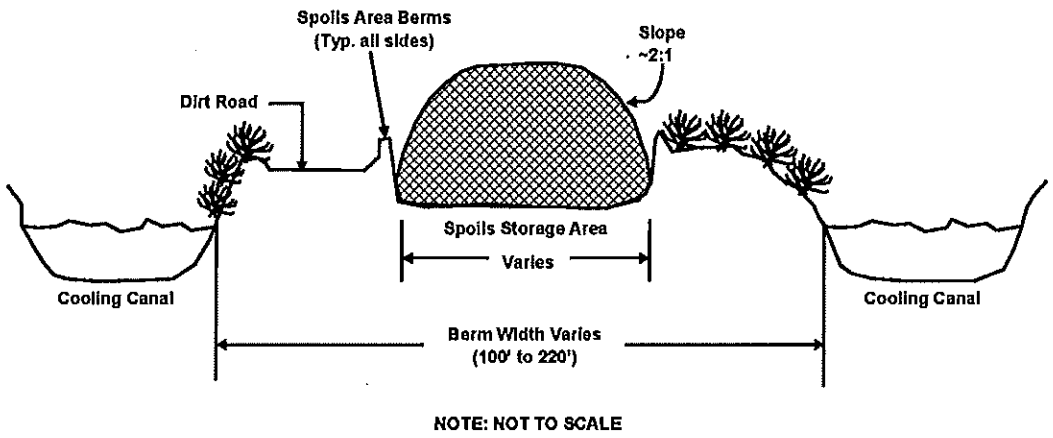

Figure 3 – 3: Conceptual Spoils Storage Area Design

Additional control measures such as gravel filters and/or silt fences may be installed to prevent sediment and spoils runoff from entering the cooling canal system.

No adverse impacts to the American crocodile, other protected species in the area, or wetlands are anticipated as a result of the spoils storage area. The spoils storage area was selected to avoid historical crocodile nesting areas or existing migration routes in and out of the cooling canal system The spoils storage area does not contain areas of freshwater refugia created by FPL, necessary for juvenile crocodile development. Ingress/egress points utilized by crocodiles have been documented by FPL biologists during crocodile monitoring efforts over the past 3 decades. The area selected for spoils storage is not an area of crocodile migration to/from the cooling canal system. The spoils storage area along the southern boundary of the cooling canal system has been used for spoils disposal since the 1970s and is an area with an existing high berm located between the cooling canal system and the C-107 Canal to the south. Spoils deposited on the southern area will be separated from the C-107 Canal by the existing berm.

3.4 Erosion Control

The construction method to be employed for the plant area will prevent material from entering the cooling canal system. The area between the cooling canal system and the area to be protected may include riprap or another BMP to prevent erosion of the bank. During the detail design phase a number of different options and technologies will be evaluated to determine the optimum construction methodology. Temporary measures,

such as, small retaining berms and/or silt fences may be installed to prevent sediment from entering the cooling canal system.

3.5 Dewatering

No general area dewatering is anticipated for the plant area. General area dewatering means dewatering of the entire area of interest (e.g., plant area), or most of the area of interest, all at one time, such that significant declines in water level would be expected well away from the area of interest.

If local or small scale dewatering is necessary, dewatering plans including proposed dewatering methods, anticipated length of dewatering activities, discharge methods, etc, associated with construction of the Project will be available during the post-certification review process authorized by Section 403.5113(2), F.S., and Rule 62-17.191, F.A.C.

4.0 Deep Excavation Area

Within the plant area, deep excavations of approximately 2.4 acres for the nuclear island for each unit will extend to an approximate elevation of -35.0 ft NAVD88 or to the top of competent rock in the Key Largo Formation. These deep excavation areas are shown in Figure 4 – 1.

Figure 4 – 1: Turkey Point Units 6 & 7 Deep Excavation Areas

4.1 Excavation

The current plan for the deep excavation (-35.0 ft NAVD88 or to the top of competent rock in the Key Largo Formation) uses a diaphragm wall around the foundation perimeter of the nuclear island. The purpose of the diaphragm wall is to provide a continuous vertical barrier to reduce the amount of water seepage into the deep excavation, thereby minimizing dewatering quantities and duration. There are various methods available for constructing the diaphragm wall and detailed design information will be available post certification. One construction design concept for the diaphragm wall consists of successive vertical panels excavated from ground surface, constructed edge to edge forming a continuous wall. The diaphragm wall is a permanent structure and will remain in place during the plant life.

4.2 Backfilling

The material resulting from excavation shown in Figure 4 – 2 will be used as fill in the area of the nuclear island. The fill will be used without further chemical testing. If additional fill material is necessary, it will be supplied by off-site sources. Fill from permitted commercial sources will not be tested by FPL. If the material is from other off-site sources, FPL will meet with MDC DERM to determine the appropriate testing requirements in accordance with MDC Code Chapter 24.

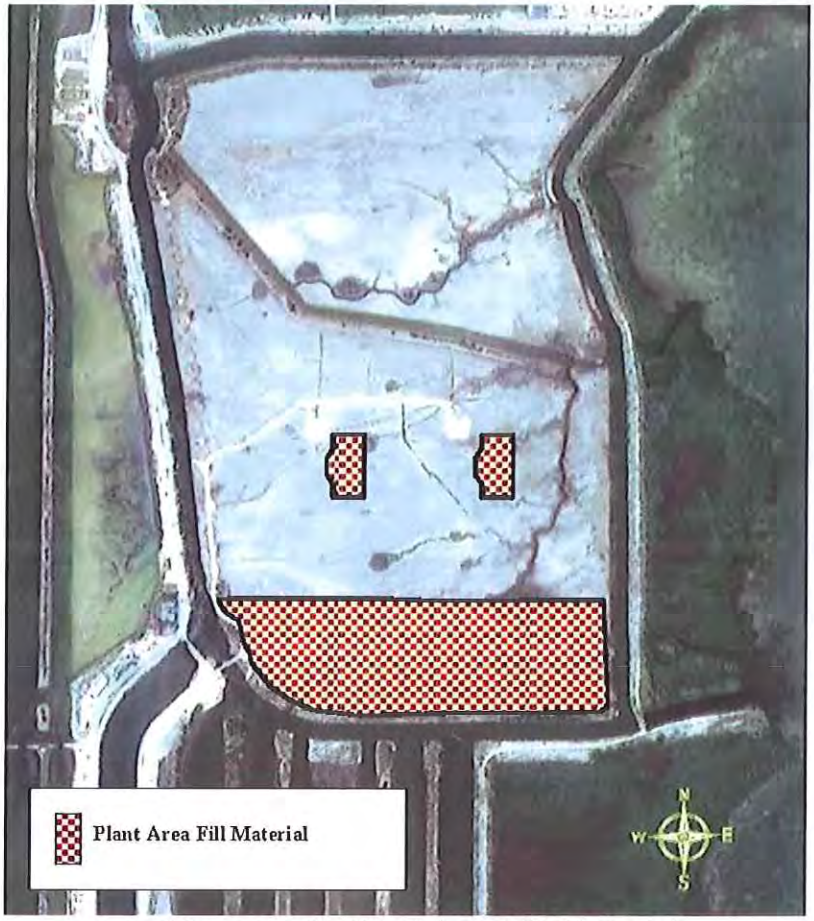

Figure 4 – 2: Plant Area Fill Material

4.3 Spoils Disposal

No muck is expected to be removed from the deep excavation area.

4.4 Erosion Control

No erosion control is necessary because the deep excavation goes from grade to -60ft NAVD88.

4.5 Dewatering

Details of the dewatering plans including proposed dewatering methods, anticipated length of dewatering activities, discharge methods, etc, associated with construction of the Project will be available during the post-certification review process authorized by Section 403.5113(2), F.S., and Rule 62-17.191, F.A.C.

FPL evaluated alternative engineering solutions for the plant area deep excavation foundation construction to reduce dewatering requirements. A diaphragm wall will be constructed around each nuclear island foundation excavation to minimize horizontal flow. In addition, a horizontal grouted barrier will be constructed below the bottom of each excavation to the bottom of the diaphragm walls to minimize vertical flow. It is anticipated that the foundations in the plant area will be constructed in essentially dry conditions, resulting in no exchange of water or materials with Biscayne Bay.

5.0 Nuclear Administration Building, Training Building and Parking Area

The nuclear administration building, training building and parking area are located north of the plant area inside the perimeter canals of the industrial wastewater facility, as shown in Figure 5 – 1. The nuclear administration building and training building will occupy approximately 32 acres.

Figure 5 – 1: Turkey Point Units 6 & 7 Nuclear Administration Building, Training Building and Parking Area

5.1 Excavation

The area for the nuclear administration building and training building will be cleared of vegetation and demucked if necessary. The excavation of muck, if required, will be the removal of approximately 4 ft – 6 ft of the top layer of soil, mud, or dirt resting on the Miami Limestone. Parts of the parking area will be cleared of vegetation and demucked.

5.2 Backfilling

A total of approximately 0.6 million cubic yards of fill material is required for the area of the nuclear administration and training buildings and parking area. The majority of the fill material will be supplied by off-site sources. Fill from permitted commercial sources will not be tested by FPL. If the material is from other off-site sources, FPL will meet

with MDC DERM to determine the appropriate testing requirements in accordance with MDC Code Chapter 24.

5.3 Spoils Disposal

Spoils from the construction of the nuclear administration building and training building will be deposited on the berms along the east and west sides of the main return canal and along the southern canal berm of the cooling canal system as described in Section 3.3. Muck removed from the nuclear administration building, training building, and parking area will not be tested.

5.4 Erosion Control

Prior to filling the parking area, various temporary BMP erosion and sedimentation control measures will be used. BMPs utilized during construction may include turbidity curtains, silt fences, or other control measures. After the parking area is filled, a retention or detention pond will be installed to capture runoff during construction of the Project. Temporary sediment basins will be installed to detain sediment-laden runoff from the disturbed areas. Surface runoff will be directed to an oil/water separator, as necessary, before release to the industrial wastewater facility.

5.5 Dewatering

Details of the dewatering plans including proposed dewatering methods, anticipated length of dewatering activities, discharge methods, etc, associated with construction of the Project will be available during the post-certification review process authorized by Section 403.5113(2), F.S., and Rule 62-17.191, F.A.C.

There will be no pumping for general area dewatering activities associated with the nuclear administration building, training building, and parking area. General area dewatering means dewatering of the entire area of interest (e.g., the nuclear administration building, training building, and parking area), or most of the area of interest, all at one time, such that significant declines in water level would be expected well away from the area of interest.

6.0 Laydown Area

The laydown areas will occupy approximately 52 acres, all of which will be impacted by construction activities. The laydown area is located to the west of the plant area within the cooling canals of the industrial wastewater facility as shown in Figure 6 – 1.

Figure 6 – 1: Turkey Point Units 6 & 7 Laydown Area

6.1 Excavation

Limited excavation is planned within the laydown area. If excavation occurs it will be managed as described in Section 5.1.

6.2 Backfilling

A total of approximately 0.7 million cubic yards of fill material is required for the laydown area. The fill quantity includes a 4.1-acre dead-end portion of the canal near the northwestern edge of the plant area. The majority of the fill material will be supplied by off-site sources. Fill from permitted commercial sources will not be tested by FPL. If the material is from other off-site sources, FPL will meet with MDC DERM to determine the appropriate testing requirements in accordance with MDC Code Chapter 24.

6.3 Spoils Disposal

Limited muck removal may be necessary within the laydown area. If muck is removed, it will be managed as described in Section 3.3.

6.4 Erosion Control

Prior to filling the laydown area, various temporary BMP erosion and sedimentation control measures, such as turbidity curtains, silt fences, or other control measures, will be used. After filling the laydown area, a retention or detention pond will be installed to capture runoff during construction of the Project. Temporary sediment basins will be installed to detain sediment-laden runoff from the disturbed areas. Surface runoff will be directed to an oil/water separator, as necessary, before release to the industrial wastewater facility.

6.5 Dewatering

No dewatering is anticipated for the laydown area.

7.0 FPL Reclaimed Water Treatment Facility and Pipeline

The FPL reclaimed water treatment facility will be located northwest of the plant area on SW 344th Street as shown in Figure 7 – 1. Considering the additional area required for laydown, parking, and other supporting facilities, the total disturbed area is estimated to be approximately 44 acres. The reclaimed water pipeline from Miami-Dade County Water and Sewer Department will enter the subject property boundary and will be located primarily within and/or adjacent to SW 344th Street. The treated reclaimed water delivery pipelines will be routed from the FPL reclaimed water treatment facility to the west side of the makeup water reservoir, as shown below. Excavation for the pipeline installation will be required between the FPL reclaimed water treatment facility and the plant area. Approximately two acres will be disturbed during construction of the delivery pipeline from the FPL reclaimed water treatment facility to the plant area.

Figure 7 – 1: Turkey Point Units 6 & 7 FPL Reclaimed Water Treatment Facility and Water Pipeline

FPL is investigating another potential site located within the subject property boundary. The excavation, backfilling, soils disposal and erosion control activities described herein

are typical of those that would be implemented at locations for the FPL reclaimed water treatment facility with similar topographical and vegetative characteristics.

7.1 Excavation

The area for the FPL reclaimed water treatment facility will be demucked. The excavation of muck will entail removal of approximately 4 ft – 6 ft of the top layer of soil, mud, or dirt resting on the Miami Limestone. The treated reclaimed water delivery pipeline will be routed from the FPL reclaimed water treatment facility to the west side of the makeup water reservoir on the plant area. Excavation to approximately 11 ft deep will be required between the FPL reclaimed water treatment facility and the plant area.

7.2 Backfilling

A total of approximately 1.6 million cubic yards of fill material is required for the reclaimed water treatment facility and associated laydown and pipelines. The majority of the fill material for the FPL reclaimed water treatment facility will be supplied by off-site sources. Fill from permitted commercial sources will not be tested by FPL. If the material is from other off-site sources, FPL will meet with MDC DERM to determine the appropriate testing requirements in accordance with MDC Code Chapter 24. Following installation of the reclaimed water treatment pipeline the pipeline trench will be backfilled with native soil or clean fill from commercial sources to original topographic grade and the area will be allowed to naturally re-vegetate.

7.3 Spoils Disposal

If the muck removed from the FPL reclaimed water treatment facility is to be reused off-site, FPL will meet with MDC DERM to determine the appropriate testing requirements in accordance with MDC Code Chapter 24. If the muck removed from the FPL reclaimed water treatment facility is not reused off-site, the material will be deposited on the berms along the east and west sides of the main return canal and along the southern canal berm of the cooling canal system as described in Section 3.3.

7.4 Erosion Control

Prior to filling the FPL reclaimed water treatment facility and associated laydown and pipelines areas, various temporary BMP erosion and sedimentation control measures, such as turbidity curtains, silt fences, or other control measures, will be used. After filling, a retention or detention pond will be installed to capture runoff during construction of the Project. Temporary sediment basins will be installed to detain sediment-laden runoff from the disturbed areas. Surface runoff will be directed to an oil/water separator, as necessary, before release to adjacent wetlands.

7.5 Dewatering

Details of the dewatering plans including proposed dewatering methods, anticipated length of dewatering activities, discharge methods, etc, associated with construction of

the Project will be available during the post-certification review process authorized by Section 403.5113(2), F.S., and Rule 62-17.191, F.A.C.

There will be no pumping for general area dewatering activities associated with the FPL reclaimed water treatment facility. General area dewatering means dewatering of the entire area of interest (e.g., FPL reclaimed water treatment facility), or most of the area of interest, all at one time, such that significant declines in water level would be expected well away from the area of interest.

8.0 Radial Collector Wells and Pipeline

Radial collector wells will be constructed to supply back up cooling water to the plant. The wells will be located on the Turkey Point peninsula, east of the existing units as shown in Figure 8 – 1. The delivery pipelines from the radial collector wells will require excavation on the Turkey Point peninsula and the existing berm east of the plant area. Approximately 14 acres will be temporarily disturbed during the construction of the wells and the delivery pipelines, including an area for laydown.

Figure 8 – 1: Turkey Point Units 6 & 7 Radial Collector Wells Area and Water Delivery Pipeline

8.1 Excavation

The excavation of the radial collector wells, the laydown work area and associated water delivery pipelines are limited to uplands previously filled with limerock aggregate.

The construction of the radial collector well caissons will require excavation of previously filled upland areas of the peninsula to approximately 40 ft deep. It is expected that minimal amounts of muck may need to be excavated. The caissons are generally constructed with poured in place concrete or precast concrete segments.
The radial collector well laterals excavation will be directionally drilled at a depth approximately between 25 and 40 ft below Biscayne Bay, thereby avoiding adverse impacts to benthic resources. The drilling technology envisioned for the radial collector well laterals is a conventional rotary-type horizontal drilling method utilizing formation water as the drilling fluid. This drilling method will maintain control of the drilling fluid within the drill bore and within the caisson precluding "frac-outs".

The delivery pipelines from the radial collector wells to the plant area will require excavation on the Turkey Point peninsula and the existing berm east of the plant area.

8.2 Backfilling

There will be minimal, if any, fill required for the construction of the radial collector wells, associated water delivery pipelines, and the construction laydown area. If any fill is required, the fill will be provided by commercial sources or from the native soil removed during the excavation of the radial collector well caissons. Following installation of the water delivery pipeline, the pipeline trench will be backfilled with native soil or clean fill from commercial sources to original topographic grade and the area will be allowed to naturally re-vegetate.

8.3 Spoils Disposal

Spoils from the construction of the radial collector wells, associated water delivery pipelines, and the construction laydown area will be deposited on the berms along the east and west sides of the main return canal and along the southern canal berm of the cooling canal system as described in Section 3.3. Muck removed from the construction of the radial collector wells, associated water delivery pipelines, and the construction laydown area will not be tested.

8.4 Erosion Control

The radial collector well caissons will be installed within upland areas of the Turkey Point peninsula, surrounded by silt fence prior to construction to avoid erosion and turbidity impacts to nearby surface waters. FPL will utilize BMPs during construction of the radial collector wells to isolate the construction area with such methods as turbidity curtains, silt fences, or other erosion and turbidity control measures. FPL has committed to take appropriate and necessary steps to protect nearby waters from turbidity and nutrient runoff during construction of the radial collector wells and associated pipelines.

8.5 Dewatering

Details of the dewatering plans including proposed dewatering methods, anticipated length of dewatering activities, discharge methods, etc, associated with construction of the Project will be available during the post-certification review process authorized by Section 403.5113(2), F.S., and Rule 62-17.191, F.A.C.

Some local small-scale dewatering will be required for the construction of the radial collection well caissons and the removal of water generated while drilling the laterals. In the case of local small-scale dewatering, significant drawdown would be confined to the area of interest. The areas involving dewatering may by isolated using sheet piling technology or equivalent.

Dewatering effluent from the construction of the laterals for the radial collector wells will be routed to the existing industrial wastewater facility to avoid discharge to surrounding surface waters or wetlands.

9.0 Equipment Barge Unloading Area

The existing equipment barge unloading area, located on the north side of the turning basin, will be extended landward to approximately 130 ft by 250 ft to facilitate heavy component unloading for construction of Units 6 & 7 as shown in Figure 9 – 1. The area impacted by construction of the equipment barge unloading area is estimated to be approximately 0.75 acres.

Figure 9 – 1: Turkey Point Units 6 & 7 Equipment Barge Unloading Area

9.1 Excavation

The existing equipment barge unloading area, located on the north side of the turning basin, will be enlarged by excavation of uplands landward to approximately 90 ft by 150 ft and 9 ft deep (approximately 0.21 acres) as shown in Figure 9 – 2. Adjacent to the turning basin and within the area to be excavated, there is an approximate 0.1 acre area of proposed dredging to approximately 9 ft deep.

9.2 Regrading

Approximately 0.44 acres of a previously disturbed area surrounding the equipment barge unloading area will be regraded and a concrete foundation installed to create an unloading area to facilitate component deliveries (see Figure 9 – 2) .

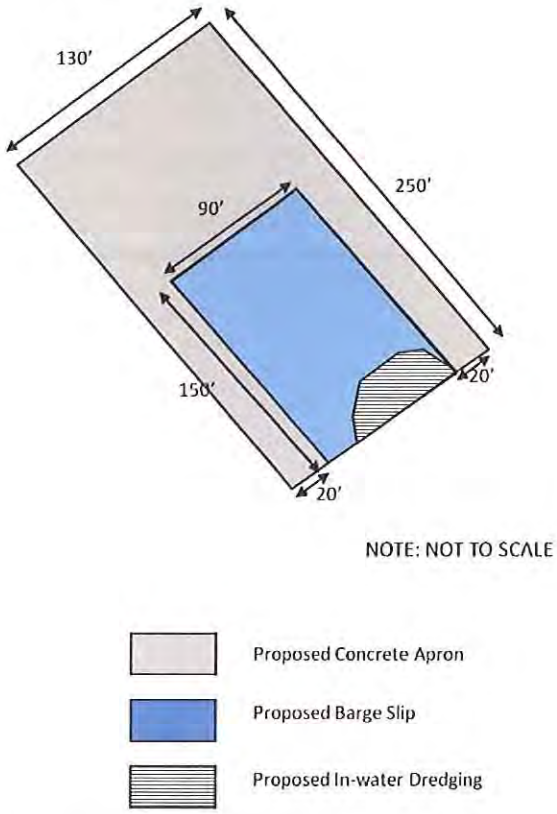

Figure 9 – 2: Turkey Point Units 6 & 7 Equipment Barge Unloading Area - Excavation and Regrading Areas

9.3 Spoils Disposal

Spoils from the construction of the equipment barge unloading area will be deposited on the berms along the east and west sides of the main return canal and along the southern canal berm of the cooling canal system as described in Section 3.3.

9.4 Erosion Control

The equipment barge unloading area will be isolated from the existing turning basin using appropriate BMPs that may include sheet piles to isolate any construction activities from surface waters. The detailed erosion and sediment control BMPs to be implemented for construction within the turning basin for the barge equipment unloading area will be incorporated into a Stormwater Management Plan and Construction Pollution Prevention Plan, which will be available during the post-certification review process authorized by Section 403.5113(2), F.S., and Rule 62-17.191, F.A.C.

9.5 Dewatering

No dewatering is anticipated for the equipment barge unloading area.

10.0 Temporary Access Roads Improvements and Transmission Structure Pads Along SW 359th Street

Roadway improvements on SW 359th Street and SW 117th Avenue are necessary to accommodate the workforce and truck traffic during the construction period. Figure 10 – 1 shows the required work areas within the temporary access area included in MDC Resolution Z-56-07. The areas for improvement comprise approximately 38 acres.

Figure 10 – 1: Turkey Point Units 6 & 7 Temporary Access Roads Improvements and Transmission Structure Pads Along SW 359th Street

10.1 Excavation

Excavation of the area for the temporary access roadway improvements and transmission structure pads east and west of the L-31E along SW 359th Street may be required. If necessary, muck may be removed from these areas.

10.2 Backfilling

Required fill quantities and final design for the temporary roadway improvements and transmission structure pads east and west of the L-31E along SW 359th Street will be provided post certification and prior to construction. It is estimated that approximately 0.28 – 0.32 million cubic yards of fill material will be required. The majority of the fill material will be supplied by off-site sources. Fill from permitted commercial sources will

not be tested by FPL. If the material is from other off-site sources, FPL will meet with MDC DERM to determine the appropriate testing requirements in accordance with MDC Code Chapter 24.

10.3 Spoils Disposal

WEST OF THE L-31E: Any muck that may be removed for the temporary roadway improvements and transmission structure pads west of the L-31E along SW 359th Street will be visually inspected prior to any disturbance for evidence of contamination, i.e. discolored or darker areas. Any areas that indicate the potential for contamination will be sampled in accordance with the Miami Dade County (MDC) Soil Reuse Guidance. Any material that fails the reuse guidance will be tested for Toxicity Characteristic Leaching Procedure (TCLP) prior to disposal at an approved off-site facility. Material that meets the MDC Soils Reuse Guidance limits may be stockpiled for future use, reused, or managed within the cooling canal system as described in Section 3.3

EAST OF THE L-31E: Muck that may be removed for the roadway improvements and transmission structure pads along SW 359th Street east of the L-31E will be deposited on the berms along the east and west sides of the main return canal and along the southern canal berm of the cooling canal system as described in Section 3.3. Muck removed from this area will not be tested.

10.4 Erosion Control

Erosion and sedimentation associated with construction of the roadway improvements (temporary and permanent) and transmission structure pads along SW 359th Street will be controlled through isolation of the construction area from adjacent lands through installation of silt fences, turbidity curtains, and/or other erosion control measures as applicable for the specific construction area conditions.

10.5 Dewatering

No dewatering is anticipated for the temporary access road improvements.

11.0 Transmission Work Within the Cooling Canal System

Transmission structures will be installed on or adjacent to berms within the cooling canal system in the portion of the West Preferred Corridor within the subject property boundary shown in Figure 11 – 1. Exact locations of the structures will be determined post-certification.

Figure 11 – 1: West Preferred Transmission Corridor

11.1 Excavation

Excavation of the area for the installation of transmission structures on or adjacent to berms within the cooling canal system may be required. If necessary, muck may be removed from those areas.

11.2 Backfilling

Required fill quantities and final design for the installation of transmission structures on or adjacent to berms within the cooling canal system will be provided prior to construction. The majority of the fill material will be supplied by off-site sources. Fill

from permitted commercial sources will not be tested by FPL. If the material is from other off-site sources, FPL will meet with MDC DERM to determine the appropriate testing requirements in accordance with MDC Code Chapter 24.

11.3 Spoils Disposal

Muck that may be removed for the transmission structures on or adjacent to berms within the cooling canal system will be deposited on the berms along the east and west sides of the main return canal and along the southern canal berm of the cooling canal system as described in Section 3.3. Muck removed from this area will not be tested.

11.4 Erosion Control

FPL will deploy necessary erosion controls to prevent secondary impacts to the cooling canal system. This includes but will not be limited to silt fences and floating turbidity curtain/barriers. Erosion controls will be monitored and maintained throughout construction period. All disturbed areas will be fully restored to pre-existing elevations and stabilized.

11.5 Dewatering

Details of the dewatering plans including proposed dewatering methods, anticipated length of dewatering activities, discharge methods, etc, associated with construction of the Project will be available during the post-certification review process authorized by Section 403.5113(2), F.S., and Rule 62-17.191, F.A.C.

Dewatering during the construction of the transmission structure pads along SW 359th Street, in the unlikely event that it is required, may discharge water to catch basins, temporary settling basins, or water bodies if the water is sufficiently free of sediments. For the construction of the transmission structure pads within the cooling canal system, water may be released to the industrial waste water facility.

12.0 Vegetation Management

Prior to the excavation or filling of any area, the vegetation in that area will be evaluated for type, quantity, and impact to habitat. Vegetation to be protected will be identified and tagged appropriately. Disturbance to existing vegetation to remain will be minimized to the greatest extent possible. Vegetative debris associated with site preparation activities will be disposed of or burned on-site. Open burning will only be conducted after notification of MDC DERM, MDC Fire Rescue Department (Fire Protection Division) and the Florida Division of Forestry. All open burning will be conducted in accordance with the requirements of Rule 62-256.700(3), F.A.C.

Vegetative debris from construction of the temporary access roads will be taken to an approved off-site disposal area, burned, or brought on-site to be left as spoils.

Exotic vegetation will be managed in accordance with the *Turkey Point Units 6 & 7*

Exotic Vegetation Management Plan submitted to MDC on March 25, 2011.

13.0 Wildlife Protection

Pursuant to Condition 11 of MDC Zoning Resolution Z-56-07, FPL has submitted a Threatened and Endangered Species Evaluation and Management Plan for the Project that is included in Appendix 10.7.1.3 of the SCA. The management plan addresses potential impacts from the Project to several listed species, including the American crocodile, Eastern Indigo snake, wood stork and other listed bird species, Florida manatee, and the Florida panther. The plan preserves, to the maximum extent possible, all habitats identified as critical to these species, specifically the American crocodile. The management plan addresses short-term measures to be taken during construction and permanent measures necessary to protect critical habitat of the American crocodile. This includes strategies to improve crocodile habitat within cooling canal system berms away from the construction area through enhancement of nesting substrate and creation of freshwater refugia, as well as design features, such as physical barriers, wildlife corridors, and traffic constraints to minimize the potential for impacts to threatened and endangered species. The plan has been developed based on FPL's successful 30-year history in managing threatened and endangered species at the Turkey Point Plant.

As part of the Threatened and Endangered Species Evaluation and Management Plan, construction personnel will receive mandatory wildlife training. This training will include identification of protected species potentially occurring within the construction areas/access roads and to stop work and notify FPL environmental managers if protected species are observed within the work area.

No areas of crocodile nesting habitat will be directly impacted during construction and operation of the Units 6 & 7 Project. Although berms located near the plant area and laydown have historically been utilized by crocodiles for nesting, no nests have occurred within these areas. The majority of nesting activity occurs in the southern portion of the industrial wastewater treatment facility. Section 3.3, describes how the spoils storage area within the cooling canal system of the industrial wastewater facility was selected to avoid crocodiles.

As described in SCA Appendix 10.7.1.2, the FPL Turkey Point Units 6 & 7 Project Manatee Protection Plan includes standard manatee construction conditions for in-water work within the barge turning basin and entrance channel, consistent with Florida Fish and Wildlife Conservation Commission guidelines. These conditions include the requirement of dedicated manatee observers upon all vessels used in the dredging operation or in association with in-water work. Work will cease in the event of a manatee observed within 50 ft of any in-water construction activity. No in-water work or movement of associated vessels will occur after sunset or before sunrise and "no wake/idle" speeds will be enforced within the barge turning basin and entrance channel at all times.

14.0 Spill Protection and Emergency Response Procedures

Environmental control practices (e.g., designating specific areas for fueling and maintenance) will be implemented to minimize spills. These designated areas will be positioned so that spills, if they do occur, will not be adjacent to surface waters.

Should spills occur, immediate cleanup will be performed, with ultimate disposal of the material in an approved facility. When appropriate, such materials will be handled as described in FPL's existing Turkey Point Spill Prevention, Countermeasure and Control Plan (SPCC) and the Turkey Point plant hazardous waste management plan.

In addition, construction specific procedures will be developed and implemented by individual contractors based on FPL directions/criteria.

15.0 Petroleum, Oil, Lubricant and Chemical Handling, Storage and Management

Individual contractors will be responsible for handling hazardous materials used or hazardous waste generated as part of their work. This responsibility includes the proper recordkeeping, transportation, storage, handling, and off-site disposal of such wastes. Contractors will be required to coordinate with FPL and provide documentation of all activities related to hazardous material and/or wastes.

Used oil from construction vehicles and equipment will be collected in appropriate containers and transported off-site for recycling or disposal at an approved facility. The approved disposal facility will be an existing facility that has been previously permitted for commercial recycling or disposal of used oils.

16.0 Waste Management

Waste minimization and recycling will be implemented to the greatest extent practicable. Solid waste materials generated during construction will be managed and disposed of in accordance with all applicable federal, state (Chapter 62-730, F.A.C.), and local rules and regulations. Construction wastes, such as scrap wood and metal, will be transferred to a special storage area within the construction area where they will be separated and stockpiled for salvage and recycling (see Chapter 62-701, F.A.C.). General waste (i.e., typical of municipal solid waste) will be collected in appropriate waste collection containers for disposal at an approved off-site location.

17.0 Dust Control

A number of control measures will be implemented during construction to minimize air emissions and potential impacts. After filling and grading, the untraveled or lightly traveled areas will be vegetated to minimize particulate matter emissions and wind erosion. Heavily traveled unpaved laydown areas and unpaved roads will be stabilized

with material such as limerock. Watering on an as-needed basis will control dust from highly traveled areas, including paved roads. The temporary access roadway improvements will be paved, which will minimize dust emissions from vehicles entering the onsite work areas. Care will be taken to prevent tracking dust and/or dirt on to public roads.

18.0 Noise

All equipment will have the proper housings and mufflers to reduce noise. Regular maintenance will be performed on the equipment to keep it operating efficiently with a minimum of noise. Proper equipment and maintenance will ensure minimal noise for both humans and wildlife.

19.0 Cultural and Historical Artifacts

If any cultural or historical artifacts are encountered during earthwork activities, all work in the general area will cease immediately. As required by the State Division of Historical Resources, FPL will notify the DEP Southeast District Office and the Bureau of Historic Preservation of the find. No work will resume in the area until FPL provides further notification to the contractor.

20.0 General Housekeeping

Trash and domestic waste from construction activities shall be gathered for disposal at a designated location. No foreign material such as trash or debris will be allowed to go into the cooling canal system of the industrial wastewater facility.

Portable toilets will be placed in various locations within the work areas as construction progresses. Proper access will be provided at all times. The portable toilets will be maintained as often as necessary by a firm specializing in such activity.

21.0 Safety Briefings and Traffic Control

Safety Briefings

Safety and environmental protection issues will be topics of discussion at the start of each work shift and emphasis will be placed on the wildlife training taken by every person working on-site.

Traffic Control

Construction and delivery personnel will be informed of the need to follow traffic signage posted for this project. Speed limit signs will be posted on the routes construction traffic will use. The speed limit of interior roads will be strictly enforced. Awareness of the potential for crocodiles and other wildlife to cross the road will be emphasized.

Table 2 – 1
Turkey Point Units 6 & 7 - Earthwork and Materials Management Activities by Work Area [1] [2]

		Plant Area (General Area)	Plant Area (Deep Excavation Area)	Nuclear Administration Bldg, Training Bldg, Parking Area	Laydown Area	FPL Reclaimed Water Treatment Facility and Pipeline	Radial Collector Wells and Pipeline	Equipment Barge Unloading Area	Temporary Access Roads and Transmission Structure Pads Along SW 359th St.	Transmission Work Within the Subject Property Boundary
Location		Within the cooling canals of the industrial wastewater facility	In the plant area and located within the cooling canals of the industrial wastewater facility	North of the plant area and located within the perimeter of the cooling canals of the industrial wastewater facility	West of the plant area and located within the cooling canals of the industrial wastewater facility	Northwest of the plant area, on SW 344th St	On the Turkey Point peninsula, east of the existing units	On the north side of the turning basin	Sections of SW 359th Street and SW 117th Avenue	On or adjacent to berms within the cooling canals of the industrial wastewater facility
Excavation	**Acreage (acres)**	~ 218	~ 2.4	~ 32	~ 52	Facility ~ 44 Pipeline ~ 2	~ 14	Upland excavation ~ 0.21 Dredging ~ 0.1 Upland regarding ~ 0.44	~ 38	To be determined post Certification
	Substrate	Remove ~ 4 ft – 6 ft top layer of muck	To ~ elevation of -35.0 ft NAVD88 or to the top of competent rock in the Key Largo Formation	Remove ~ 4 ft – 6 ft top layer of muck	May require limited excavation	Facility- Remove ~ 4 ft – 6 ft top layer of muck Pipeline- ~ 11 ft	Caissons- muck may be removed if necessary. To depth of ~ 40 ft Laterals- conventional rotary-type horizontal drilling method at depth of ~ 20 – 40 ft below Biscayne Bay. Pipeline- To be determined	Upland excavation ~ 9 ft Dredging ~ 9 ft	Muck may be removed if necessary	Muck may be removed if necessary
Backfilling	**Fill Amount (million cubic yards)**	~ 7.8		~ 0.6	~ 0.7	~ 1.6	Minimal if any fill required	NA	~ 0.28 – 0.32	To be determined prior to construction
	Fill Source	Clean fill from off-site sources	Material from deep excavation areas or clean fill from off-site sources	Clean fill from off-site sources	Clean fill from off-site sources	Facility- Clean fill from off-site sources Pipeline- native soil or clean fill from off-site sources	Caissons and laterals-minimal if any, native soils or clean fill from off-site sources. Pipeline- native soil or clean fill from off-site sources	NA	Clean fill from off-site sources	Clean fill from off-site sources
Spoils Disposal		Deposited on designated berms of the cooling canal system	Will not generate spoils	Deposited on designated berms of the cooling canal system	Deposited on designated berms of the cooling canal system	Muck may be reused off-site. If not reused material will be deposited on designated berms of the cooling canal system	Deposited on designated berms of the cooling canal system	Deposited on designated berms of the cooling canal system	From areas west of L-31 E-material may be stockpiled for future use, deposited on designated berms of the cooling canal system or disposed of at an approved off-site facility From areas east of L-31 E-deposited on designated berms of the cooling canal system	Deposited on designated berms of the cooling canal system
Erosion Control		BMPs such as riprap, small retaining berm, and/or silt fences	NA	BMPs such as turbidity curtains, silt fences or other control measures and temporary sedimentation basins	BMPs such as turbidity curtains, silt fences or other control measures and temporary sedimentation basins	BMPs such as turbidity curtains, silt fences or other control measures and temporary sedimentation basins	BMPs such as such as turbidity curtains, silt fences, or other erosion and turbidity control measures	BMPs such as sheet piles	Installation of silt fences, turbidity curtains, and/or other erosion control measures	Includes but will not be limited to silt fences and floating turbidity curtain/barriers
Dewatering		Details available post-certification. No general area dewatering anticipated	Details available post-certification. Diaphragm wall and horizontal grouted barrier.	Details available post-certification. No general area dewatering anticipated	No dewatering anticipated	Details available post-certification. No general area dewatering anticipated	Details available post certification. Local small-scale dewatering anticipated. Dewatering from lateral construction will be routed to the industrial wastewater facility.	No dewatering anticipated	No dewatering anticipated	Details available post-certification. Along SW 359th St-water to catch basins, temporary settling basins, or water bodies if free of sediments. Within the cooling canal system- water released to the industrial wastewater facility.

NA = Not Applicable
(1) Limited to work areas within the subject property boundary
(2) Other management activities are described in Sections 12 – 21 of this plan

ATTACHMENT 5

Conditions of Certification Regarding Road Restoration

B. Plant Access Roads

1. Plant access roadway improvements west of the L-31E approved in the CDMP Amendment Ordinance 10-26 shall not go beyond those depicted on Figure 3.1 (Temporary Roadways and Roadway Improvements In connection with the Construction of Turkey Point Units 6 & 7) of the CDMP Transportation Element. All roadway improvements associated with the construction of Turkey Point Units 6 & 7 as shown in Figure 3.1 are to be temporary, per the CDMP, and shall satisfy the criteria outlined in the Future Traffic Circulation Map Series of the CDMP Transportation Element. (Future Traffic Circulation Map Series of the CDMP Transportation Element, Ordinance 10-26)

2. Within 2 years following the construction of Turkey Point Units 6 & 7, except as otherwise agreed to by FPL and MDC and in accordance with Ordinance No. 10-26:

a. All temporary roadway improvements on publicly owned rights-of-way shall be returned to the status of the roadway(s) prior to the commencement of construction of the temporary roadways and roadway improvements, and, (b) any privately owned roadway shall be returned to the minimum roadway width required to provide maintenance to FPL facilities and shall not be more than two lanes (18 foot drivable width). FPL shall restore the wetlands impacted by the roads in compliance with the Wetland Mitigation Plan Rev 2 (July 2011).

b. FPL shall install the proposed potable water line below wetland grade at an appropriate depth and alignment so that the installation of the pipeline complies with applicable construction standards, including minimum cover criteria in the Public Works Manual, and does not interfere with the wetland restoration where required in areas of pipeline construction.

3. The construction access roads shall not adversely impact the capacity of Miami Dade County's existing drainage network. FPL shall provide final construction plans to DEP and Miami-Dade County at least 90 days prior to commencement of access road construction. The plans shall demonstrate compliance with the requirements of Miami Dade County Code Section 24-48.3(1) (b), (d) & (e) and by reference with any applicable regulations cited within these sections. The plans shall address the drainage system associated with the roads to accommodate stormwater from the roads and maintain the capacity of any pre-existing County drainage features that are modified or removed by construction of the roads. The plans shall also describe how the County drainage system will be reconstructed when the roadway improvements are removed.

4. To the extent practicable, restoration of public and private roadways shall be in a manner complementary to planned and funded County wetlands restoration projects. MDC and FPL shall jointly determine if practicable opportunities exist at the time of roadway restoration to complement wetlands restoration projects.

5. Following completion of project construction for Units 6 &7, to the extent feasible, FPL shall reconstruct SW 117 Avenue between SW 344 Street and SW 328 Street as a 2-lane paved road with a continuous ditch or canal on the eastern side, unless MDC and FPL agree to a different configuration. On SW 117 Avenue south of SW 344 Street, FPL and MDC may agree that no road is necessary upon removal of the construction access roadways.

6. The construction access roadways associated with the non-transmission features of the Project area shall not be inconsistent with the Biscayne Bay Coastal Wetlands (BBCW) CERP project, pursuant to Policy CON-7J of the CDMP and shall be consistent with Condition 9 of Z-56-07.

7. FPL shall demonstrate through plans in a post certification submittal how the construction access roadway design will accommodate a planned conveyance feature to transfer water southward from the Florida City Canal, along the existing canal located on the west side of SW 137 Avenue, to rehydrate wetlands in the Model Lands Basin. Given the uncertainties associated with the Licensee's roadway improvements, including when the improvements would commence and when the deconstruction of the roadway would occur, the water conveyance feature must either be constructed as part of the roadway improvement project; or a portion of the ROW must be set aside in advance of FPL construction to ensure that neither project prevents, constrains, or delays the other. The water conveyance feature may include a lined canal, pressure culvert and/or control structures.

8. FPL shall demonstrate, prior to construction, that all access roads west of the L-31E canal comply with the requirements of the Fire Water &. Engineering Bureau and the Florida Fire Prevention Code (FFPC) and National Fire Protection Association (NFPA) standards.

9 All access roads associated with the operation of the nuclear power plant and ancillary structures and equipment shall conform to the minimum standard identified in the "Miami-Dade Fire Rescue Access Road Synopsis" along with all prevailing Miami Dade Fire Rescue access road standards at the time of certification.

10. FPL shall provide wayfinding signage, meeting the approval of the Parks, Recreation and Open Space Department (PROS), as part of the construction of roadway improvements to SW 328th Street (between SW 137th Ave and SW 117th Ave) and SW 117th Ave (south of SW 328th St) to direct travelers to Homestead Bayfront Park and Marina. Such signage shall comply with the PROS Sign Implementation Manual.

[FPL Stipulation – 8/1/13; CDMP Policy R05-3E]

C. Earthwork And Materials Disposal

1. For all approved work, fill material will be utilized as described in FPL's Conceptual Earthwork and Materials Disposal Plan (June 3, 2011).

2. To the greatest extent practicable FPL shall use proposed Spoil Areas A and C, located along the east and west berms of the Grand Canal. If spoils are placed on Area B, FPL shall implement Best Management Practices to limit to the extent practicable, runoff from the spoils entering the wetlands areas to the south of the Industrial Wastewater Facility

3. Within thirty (30) days of completion of excavated material disposal activities associated with the certified facilities, FPL shall provide to RER-DERM copies of all excavated material disposal receipts and/or disposal records for contaminated materials that were disposed of at an approved off-site facility. (MDC Code Section 24-44.)

4. Excavated material that meets the MDC Soil Reuse Guidance limits may be stockpiled for future use, reused or managed within the cooling canals system.

ATTACHMENT 6

MDC Natural Areas Management Plan

MIAMI-DADE COUNTY

NATURAL AREAS MANAGEMENT PLAN

Miami-Dade County Natural Areas Management Working Group

Department of Environmental Resources Management (DERM)
Technical Report Number 2004-1

The Institute for
Regional Conservation

MIAMI-DADE COUNTY
NATURAL AREAS MANAGEMENT PLAN

Miami-Dade County Natural Areas Management Working Group

Department of Environmental Resources Management (DERM),
Technical Report Number 2004-1

September 2004

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Contents

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Formal reviews were conducted by land managers from neighboring agencies, including Roger Clark, Land Stewardship Manager for Lee County Parks and Recreation; Carol Morgenstern, Natural Areas Manager for Broward County Parks and Recreation; Frank Griffiths, Environmental Program Supervisor for Palm Beach County Environmental Resource Management, and members of the Pine Rockland Working Group.

Agency abbreviations:

DERM = Department of Environmental Resources Management, Miami-Dade County
EEL = Environmentally Endangered Lands program, Miami-Dade County (part of the Department of Environmental Resources Management)
FTBG = Fairchild Tropical Botanic Garden
IRC = The Institute for Regional Conservation
NAM = Natural Areas Management, Miami-Dade County (part of the Park and Recreation Department)

Introduction

The Miami-Dade County Natural Areas Management Working Group created the Miami-Dade County Natural Areas Management Plan in 2003 and 2004 to guide management and restoration practices in Miami-Dade County over the next decades.

We have created this document with the intention that it will be used in Miami-Dade County, but it has some applicability throughout southern Florida. Land management agencies, such as other county and local governments can use this document in planning management activities in natural areas. It is also a useful tool for private landowners who manage natural areas.

These guidelines are intended to be general enough for application to a wide range of habitats. In the section entitled "All Natural Areas," general goals, objectives and actions that apply to all of the subsequent habitat types are described. Specific goals, objectives and actions unique to a particular habitat follow in the separate habitat sections (described below). Actions listed in this plan will not always apply in the same way to all sites. Therefore, site managers should develop and implement actions recommended in this plan on a per-site basis.

In most cases, we used nomenclature for habitat (community) types described by the Florida Natural Areas Inventory (FNAI and FDNR 1990), with short descriptions taken from the 1999 tracking list (Marois 1999). Those habitats marked with asterisks are not recognized by FNAI. Habitats addressed here include:

- **Pine Rockland** - Flatland with exposed limestone substrate; mesic-xeric; subtropical; frequent fire; south Florida slash pine, palms and/or hardwoods, and mixed grasses and herbs.
- **Rockland Hammock** - Flatland with limestone substrate; mesic; subtropical; rare or no fire; mixed tropical hardwoods, often with live oak.
- **Scrubby Flatwoods** - Flatland with sand substrate; xeric-mesic; subtropical or temperate; occasional fire; longleaf pine or slash pine with scrub oaks and wiregrass understory.
- **Coastal Uplands** - Substrate and vegetation influenced primarily by such coastal (maritime) processes as erosion, deposition, salt spray, and storms.
    - **Beach Dune** - Active coastal dune with sand substrate; xeric; temperate or subtropical; occasional or rare fire; sea oats and/or mixed salt-spray tolerant grasses and herbs.
    - **Coastal Berm** - Old bar or storm debris with sand/shell substrate; xeric-mesic; subtropical or temperate; rare or no fire; buttonwood, mangroves, and/or mixed halophytic herbs and/or shrubs and trees.
    - **Coastal Strand** - Stabilized coastal dune with sand substrate; xeric; subtropical or temperate; occasional or rare fire; dense saw palmetto and/or seagrape and/or mixed stunted shrubs, yucca, and cacti.
    - **Maritime Hammock** - Stabilized coastal dune with sand substrate; xeric-mesic; subtropical or temperate; rare or no fire; mixed tropical hardwoods and/or live oak.

- **Wetlands** - Includes communities from palustrine, lacustrine, and marine/estuarine subgroupings described by FNAI (FNAI and FDNR 1990).
    - **Bayhead*** - Wetland with peat substrate; usually saturated and occasionally inundated; subtropical; rare or no fire; bays and/or dahoon holly, cocoplum, wax myrtle, and other hardwoods (description from IRC 2001).
    - **Dome Swamp** - Rounded depression in sand/limestone substrate with peat accumulating toward center; seasonally inundated, still water; subtropical or temperate; occasional or rare fire; pond cypress, and/or blackgum, and bays, often tallest in center.
    - **Marl Prairie** - Flatland with marl over limestone substrate; seasonally inundated; tropical; frequent to no fire; sawgrass, spikerush, and/or mixed grasses, sometimes with dwarf cypress (but see Historic Transverse Glades, below).
    - **Swale** - Broad, shallow channel with sand/peat substrate; seasonally inundated, flowing water; subtropical or temperate; frequent or occasional fire; sawgrass, maidencane, pickerelweed, and/or mixed emergents.
    - **Tidal Marsh** - Expansive intertidal or supratidal area occupied primarily by rooted, emergent vascular macrophytes (e.g., cord grass, needlerush, saw grass, saltwort, saltgrass and glasswort); may include various epiphytes and epifauna.
    - **Tidal Swamp** - Expansive intertidal and supratidal area occupied primarily by woody vascular macrophytes (e.g., black mangrove, buttonwood, red mangrove, and white mangrove); may include various epiphytes and epifauna.
    - **Freshwater Tidal Swamp** - Rivermouth wetland, organic soil with extensive root mat; inundated with freshwater in response to tidal cycles; rare or no fire; cypress, bays, cabbage palm, gums and/or cedars.

- **Historic Transverse Glades*** - We deviated from the FNAI classification of "Marl Prairie;" opting instead for the term "Historic Transverse Glades" as a subset of south Florida Marl Prairies that intersect uplands in Miami-Dade County. In doing so, we underscore that this community is extremely rare, and that hydrologic alterations have eliminated any undisturbed transverse glades outside of Everglades National Park -- a fact that restoration efforts must acknowledge.

- **Ecotones*** - We have added a separate section for ecotones, because their management creates unique problems, which we have tried to address.

As progress is made toward restoring and managing the seven habitat types, these plans will undoubtedly need to be modified. Therefore, this working document will be periodically revised.

All Natural Areas

GOAL 1: Restore and maintain habitat structure and function to maximize native biotic diversity and preserve natural resource values.

OBJECTIVES AND RECOMMENDED ACTIONS:

ALL.1.1. Control and/or extirpate populations of invasive plants and exotic and nuisance animals.

- Eliminate, to the extent possible, invasive pest plants and exotic animals from natural areas, including outlying populations.
- Ensure that control measures are not deleterious to native species.
- Continue to review and update invasive species management techniques.
- Conduct routine surveys to detect new infestations and new species.
- Evaluate effectiveness of different treatment techniques and treatment intervals on invasive plants.
- Identify disproportionately large populations of native wildlife and eliminate human activities such as feeding that increase populations.
- Manage refuse in parks and neighboring areas so that it is not available for consumption by wildlife.

ALL.1.2. Maintain or restore the viability of rare and endemic species consistent with the preservation and restoration of the habitat.

- Prioritize and monitor existing rare plant and animal species.
- Maintain GIS records of all known rare plant locations and distribute to land managers to make crews aware of plants to protect.
- Conduct management activities such as invasive plant removal, fence construction, etc., away from rare plants when possible. When such actions cannot be prevented, consider alternatives to minimize the impacts to rare species.
- Reintroduce populations of extirpated species, and augment existing populations where appropriate.
- For federally listed species, use USFWS Recovery Plans as guides.

ALL 1.3. Assess the role of fire in natural areas and the use of prescribed fire for maintenance and restoration.

- Execute a Memorandum of Understanding with Everglades National Park for assistance with prescribed burning.

ALL.1.4. Protect habitats from point and non-point source pollution.

- Coordinate with Miami-Dade County Public Works, Mosquito Control District to reduce or eliminate spraying for mosquitoes on and adjacent to natural areas.

- Reduce or eliminate drifting pesticide spray and dust from agricultural and commercial operations.
- Buffer natural areas from adjacent pollution sources by retaining existing vegetation or planting native vegetation that is appropriate to the habitat.
- Prevent dumping of pollutants such as automotive oil, paint and pesticide containers, home chemicals, roofing and construction materials, landscape debris, automobile parts, trash, and contaminated stormwater.
- Encourage the use of non-toxic bullets in areas that allow hunting.

ALL.1.5. Increase size, connectivity, and diversity of natural areas.

- Complete acquisitions in Miami-Dade County under the Environmentally Endangered Lands Program.
- Remove roads that fragment natural areas, except as they are needed for firebreaks or maintenance access.
- Recreate natural areas where they have been destroyed by human activities.
- Restore to the most practical natural habitat those areas that have suffered such extreme degradation that re-creation of the original plant community is either impossible or impractical.
- Use disturbed areas to create additional habitats adjacent to or within intact natural areas.
- Promote site-appropriate native landscaping in developed areas around a site to increase habitat area.

ALL.1.6. Restore historic hydrological conditions by rehydrating areas with quality water, thereby increasing availability of water for species requiring more mesic or hydric conditions.

- Identify preserves that will be appropriate for hydrologic restoration.
- Pursue collaborations with researchers to address hydrological questions.
- Pump water in, dike, install wells, etc., to approximate historic, predrainage hydrology.
- Work with water agencies to maintain the water table as high as possible, and water quality as high as possible.
- Monitor soil moisture before and after hydrologic restoration.
- Reconnect natural areas with water sources where possible as an alternative to full-scale hydrologic restoration.

ALL.1.7. Develop plans to respond to disasters such as hurricanes, tornadoes, catastrophic fires, major pest outbreaks, etc.

- For natural disasters, coordinate with the Emergency Operations Center's command team through the assigned County staff members.
- For catastrophic fires, coordinate with the pre-determined incident command team (F-DOF, M-D Fire Rescue, ENP, Parks, DERM, etc.)
- For major pest outbreaks, coordinate with other concerned agencies and research facilities such as UF-IFAS.
- Develop disaster-response site plans and keep them in multiple, easily accessible locations. Plans should include maps (vegetation types, rare species, property surveys),

site inventories, emergency signage, and contact information for project managers.
- Prioritize recovery tasks on a per-site basis, including clearing of fire breaks, identifying and treating populations of invasive plants that are likely to spread quickly, and identifying areas where wildfire risk is heightened.
- Continue to monitor updates of the Miami-Dade County Emergency Operations Center disaster response plans to ensure that staging areas for recovery efforts are not located in environmentally sensitive sites.

ALL.1.8. Review and update knowledge about restoration and management.
- Review pertinent literature on historic information, recent scientific studies, and natural history.
- Use current techniques to gather new information on canopy cover, seed bank, pollen, appropriate times to treat invasive plants, plant/animal interactions (dispersal, pollination), etc.
- Coordinate restoration and management with site-specific management objectives.

GOAL 2: Increase public awareness and provide appropriate and compatible public access while protecting natural areas from adverse human impacts.

OBJECTIVES AND RECOMMENDED ACTIONS:

ALL.2.1. Increase public awareness and engender public support for protecting and preserving natural areas.
- Continue and expand efforts to educate the public through means such as Adopt-a-Natural Area Program, the Environmentally Endangered Lands Program, and the Natural Areas Management website.
- Create, display, and distribute promotional and educational materials about Miami-Dade County's natural areas, their plant and animal residents, and their invaluable community benefits.
- Update educational materials and websites periodically.
- Provide information to the communications department that will increase support for natural areas management and inspire public action.
- Promote incorporation of natural areas information into the curriculum of Miami-Dade Public Schools by providing links to science standards.
- Recommend new, compatible public education programs to focus on the natural history of natural areas.
- Coordinate natural areas management with public education and Eco-Tourism programs to encourage interaction, cross-training, and joint meetings.
- Publish promotional information about natural areas in the media.

ALL.2.2. Develop and implement public use plans for all natural areas.
- Identify site-specific opportunities for compatible public use and access.

- Determine public use capacity for individual parks or sites within parks.
- Develop a specific master site plan for each natural area.
- Develop a public use compatibility permit system.
- Develop standards for the type of facilities and materials to be used when developing public use facilities in preserves. Examples include composting toilets, use of recycled lumber for boardwalks, energy saving materials, water conserving fixtures, use of firewise construction and materials, and permeable asphalt.

ALL.2.3. Protect natural areas from inappropriate public use such as dumping, release of invasive plant and animal species (including feral and domesticated pets), poaching of native plant and animal species, off-road vehicles (ORVs), campfires, paintball games, and other unauthorized uses.

- Establish signs to identify environmentally protected areas, designate areas for public access, and to discourage inappropriate public use.
- Provide public access through a clearly identified trail system, where appropriate.
- Institute appropriate access control measures such as fences and gates, where appropriate; monitor and repair as needed.
- Ensure that existing rules and regulations concerning the protection of natural resources are enforced. Project managers are responsible for identifying situations where illegal public use is occurring.
- Continue coordinating with Miami-Dade Police Department's Environmental Crimes Unit to monitor natural areas.

GOAL 3: Increase effectiveness of natural areas management by periodically reviewing and revising/updating management plans, monitoring results, evaluating techniques, and training staff.

OBJECTIVES AND RECOMMENDED ACTIONS:

ALL.3.1. Develop and periodically revise site and habitat management plans.

- Develop management plans, fire management plans and monitoring plans for all natural areas.
- Establish a protocol and schedule for reviewing and updating site, habitat, and fire management plans.
- Review and update management plans every 5 years, at minimum.

ALL.3.2. Maintain a long-term biological monitoring program.

- Make regular site visits according to the monitoring plans.
- Develop a standard form for use in conducting site visits and recording observations.
- Biologists should regularly visit sites where crews are working to discuss management techniques, priorities, plant identification, rare species protection, etc.
- Conduct rare species surveys prior to implementation of management activities.
- Collect appropriate baseline data useful in detecting habitat changes over time,

including species inventories, vegetation mapping, etc.
- Develop appropriate monitoring protocols for individual projects.
- Monitor results of general management practices to detect positive response or off-target damage.
- Prioritize rare/indicator species and monitor at least annually by mapping, counting, sampling, conducting demographic studies, or a combination of these methods.
- Analyze monitoring data and summarize results in an annual report.
- Use results to evaluate and refine management methods.
- Encourage relationships with outside researchers for monitoring pests, insects, reptiles, amphibians, fishes, birds, and mammals, as an indicator of pollution and general ecosystem health.

ALL.3.3. Maximize efficiency and cost effectiveness of management activities on County natural areas.
- Establish quantifiable target objectives for management activities (e.g., set thresholds for invasive plant cover, target species priorities, and optimal timing of treatment).
- Develop scope-of-work and budgets for projects.
- Organize management actions to coordinate personnel, maximize biological effectiveness, account for seasonal/ecological factors, and meet budget and schedule requirements.
- Keep accurate records of management actions, labor, materials, equipment use, and costs.
- Monitor biological conditions and compare with target objectives, budgets, and schedules.
- Analyze and summarize the cost and ecological effectiveness of management activities.
- Utilize past records when planning new projects.

ALL.3.4. Improve effectiveness of natural areas management through staff training.
- Provide training and appropriate identification materials to staff for rare native plant and animal species, invasive plants, and exotic animals.
- Provide a mechanism for documenting and reporting on new populations of species of interest.
- Encourage staff participation in technical training, workshops, and conferences.
- Encourage certification or licensure of staff involved with prescribed burning (FDOF), arboriculture (ISA), and natural areas weed control (FDACS, Pesticide certification section).
- Require exotic plant control contractors to be licensed in the natural areas weed category by FDACS.
- Ensure that institutional knowledge is maintained through documentation and dissemination of key information.

ALL.3.5. Ensure that long-term interagency coordination is maintained, and encourage the sharing of maps, data, and literature (see **Appendix** for relevant agencies).

- Execute appropriate interagency agreements to solidify essential natural areas restoration components such as fire management, reforestation, invasive plant and animal control, and research.
- Maintain communication network with land managing agencies in adjacent counties.
- Publish technical information about natural areas management in journals.
- Give presentations at relevant conferences.
- Encourage staff participation in professional societies and interagency committees.

GOAL 4: Develop best management practices for habitats consistent with other stated goals.

OBJECTIVES AND RECOMMENDED ACTIONS:

ALL.4.1. Minimize habitat loss and damage from development and/or maintenance of trails, buildings, sewer lines, etc.

- Ensure that the construction of sewer lines, buildings, and roads minimizes impacts to natural areas, and that impacts are mitigated.
- Establish procedures for maintaining trails and firebreaks in natural areas that minimize impact.

ALL.4.2. Protect the integrity of natural areas in the layout, design, and management of development projects adjacent to natural areas.

- Minimize potential impacts at the interface between natural areas and developed landscapes, such as creeping sod grasses, polluted runoff, alterations in drainage and elevation, creation of fire hazards, dispersal of invasive plant propagules, litter and trash dumping.
- Revise zoning codes to protect natural areas from adverse impacts from development.
- Ensure that management practices on public property account for the protection of natural areas.
- Designate management zones around existing natural areas to identify potential management concerns, such as smoke dispersion, wild and domestic animals, invasive plants, dumping, and inappropriate use.
- Notify developers during the planning process when planned developments are in a management zone to ensure that management activities can continue once the area is developed.
- Develop procedures to address concerns within management zones in existing developed areas.

ALL.4.3. Ensure that restoration and monitoring practices in natural areas minimize deleterious off-target effects to native plant and animal species.

- Use herbicide application methods such as spot-treatment whenever possible to reduce non-target impacts.
- Limit herbicide application to known, identifiable targets.

- Select herbicides that are safe, effective, have minimal impacts to non-target species, have minimal soil persistence, and degrade rapidly.
- Provide maps of rare species locations to project managers and crew supervisors.
- Combine rare species monitoring with invasive species control to minimize impact on rare species.
- Conserve rare species microhabitats when conducting restoration activities in natural areas.
- Plan timing of restoration activities to avoid impact on rare species during critical life history phases.
- Develop procedures for staff use of ORVs to minimize impact to sensitive areas.

ALL.4.4. Avoid or remove invasive species propagules to prevent new infestations and the spread of existing invasive species.

- Inform outside agencies of protocols to prevent the spread of invasive species and require that outside agencies working in natural areas adhere to them.
- Coordinate with the Florida Department of Transportation, FPL, Public Works, SFWMD, etc., to eliminate dumping and maintain easements free of invasive plants.
- Minimize soil disturbance in natural areas when conducting restoration activities.
- Before ground-disturbing activities begin, inventory and prioritize treatment of invasive species.
- Expand invasive plant control activities to include areas outside of natural areas, including nature centers, administrative grounds, and parking lots.
- Plan staging areas and access routes to avoid heavy infestation areas, and begin invasive species control in lightly infested areas prior to heavily infested areas.
- Remove mud, dirt, and plant parts from equipment before moving it into a project area.
- Avoid driving and walking through sites infested with invasive species, most notably *Lygodium microphyllum* (Old World climbing fern, small-leaf climbing fern). If these activities must occur, then staff should wear appropriate work clothing.
- Keep equipment used on sites contaminated with *L. microphyllum* and other species with highly mobile propagules separate from "clean" equipment.
- Consider developing a wash station area at sites infested with *L. microphyllum.*
- Crews need to inspect, remove, and properly dispose of invasive plant seed and plant parts found on their clothing and equipment, after being trained to recognize the priority species in the area.
- Proper disposal of invasive species propagules should be assessed to prevent contamination.

ALL.4.5. Prevent the introduction and spread of invasive plants caused by moving infested mulch, sand, gravel, borrow, and fill material.

- Inspect and document in the first year after project completion the areas where materials are used to ensure that any invasive plants transported to the site are promptly detected and controlled.
- Maintain stockpiled material in an invasive plant-free condition, in a configuration conducive to mowing and maintenance.

ALL.4.6. Where project disturbance creates bare ground, develop restoration protocols for the appropriate plant community.

- Monitor and document all ground-disturbing operations for invasive plants. Incorporate disturbed areas into ongoing restoration.
- Develop guidelines and protocols for the establishment of native plants and influx of native plant propagules in areas to be restored.
- Treat disturbed soil in a manner that facilitates the establishment of the appropriate plant community.
- Use local native material where appropriate and feasible.

ALL.4.7. Protect geologic, pre-historic, archaeological, and historic sites within all management areas.

- Obtain a certificate of appropriateness when performing substrate disturbance, including digging.
- Maintain GIS records of all known geologic, pre-historic, archaeological, and historic sites, and distribute to land managers and crew leaders to ensure protection of these sites.
- Direct work crews to not disturb archaeological material.
- Evaluate public impact to geologic, pre-historic, archaeological, and historic sites, and modify public use, if appropriate.

Pine Rockland

GOAL 1: Restore and maintain pine rockland structure and function to maximize native biotic diversity and preserve natural resource values.

OBJECTIVES AND RECOMMENDED ACTIONS:

PR.1.1. Establish the appropriate fire regime for pine rocklands, using prescribed fire in conjunction with other appropriate techniques.

- Conduct prescribed burning to approximate natural fire regimes, as closely as possible.
- Utilize site preparation and firing techniques that are safe and will reduce negative impacts to the public, staff, and property.
- Conduct pre- and post-burn monitoring to assess fire effects.
- Establish and utilize a procedure to evaluate the prescribed burn (e.g. fire behavior, smoke dispersion, safety, public response) and assess whether objectives set in the prescription were met.

PR.1.2. Establish or restore the appropriate canopy and understory structure in pine rocklands.

- Maintain a supply of genetically appropriate pine seed for use in restoration following a catastrophic event (e.g. hurricane, pest outbreak).
- Collect seed using methods that minimize damage to trees and pine rockland habitat.
- Use restoration strategies that will achieve uneven-aged forest structure with varying densities and age distributions of pine trees.
- When necessary, modify the understory (e.g., saw palmetto, native hardwoods, vines, etc.) to restore historic structure, to expand potential habitat for herbs and forbs, and/or to improve smoke management.

GOAL 2: Develop best management practices for pine rocklands consistent with other stated goals.

OBJECTIVES AND RECOMMENDED ACTIONS:

PR.2.1. Ensure that restoration and monitoring practices in pine rocklands minimize deleterious off-target effects to native plant and animal species.

- Schedule and conduct prescribed burns to avoid negative long-term impact on rare species during critical life history phases.
- Divide sites into multiple burn units to minimize impacts to native animals.
- Consider relocating rare species such as epiphytes and *Liguus* tree snails when critical populations may be harmed by fire.
- Prior to burns, reduce fuel through hardwood thinning and spot-treatment with

herbicides, followed by removal of such material from the site, to reduce fire intensity and smoke, and minimize mortality of rare species.

PR.2.2. Minimize habitat loss and damage from development of trails, buildings, sewer lines, etc.

- Ensure that construction of trails minimizes impacts to pine rocklands and that trails double as fire breaks.
- Manage trails and fire breaks as habitat for low, herbaceous species.

PR.2.3. Protect the integrity of natural areas in the layout, design, and implementation of development projects adjacent to pine rocklands.

- Ensure that projects account for fire management needs of pine rockland sites.
- Encourage the use of local native plant material in sites adjacent to natural areas. Use species beneficial to pine rocklands such as *Pinus elliottii* var. *densa* (seed source), appropriate wildlife attractors, ecotonal species, etc.

Rockland Hammock

GOAL 1: Restore and maintain rockland hammock structure and function to maximize native biotic diversity and preserve natural resource values.

OBJECTIVES AND RECOMMENDED ACTIONS:

RH.1.1. Maintain hammocks free of critical invasive plant species to facilitate recovery from natural catastrophic events.

- Identify, categorize, and prioritize the critical invasive species that impact rockland hammocks.
- Cooperate with neighboring landowners to reduce critical invasive plants adjacent to rockland hammocks.
- Reduce critical invasive plants from hammock edges.
- Reduce disturbance at hammock edges.
- Reduce influx of propagules from invasive plants.

RH.1.2. Establish and restore the appropriate canopy, edge, and understory structure in rockland hammocks.

- Investigate vegetation management techniques that will mimic natural hammock ecotones and act to increase humidity, reduce wind, and provide habitat for edge and gap species.
- Facilitate the regeneration of appropriate native species in hammock gaps where natural revegetation is short-circuited by exotic vine invasion.
- Conduct staged removals of invasive plants in order to maintain shade and protect rare plant species that would be negatively affected by high intensity light (e.g., ferns).
- In areas dominated by invasive species with few or no native plants, conduct staged removals of invasive plants to reduce a flush of invasive species recruitment.

GOAL 2: Develop best management practices for rockland hammocks consistent with other stated goals.

OBJECTIVES AND RECOMMENDED ACTIONS

RH.2.1. Ensure that restoration and monitoring practices in rockland hammocks minimize deleterious off-target effects to native plant and animal species.

- Minimize use of herbicides containing triclopyr (e.g. Garlon) in the proximity of native *Ficus* species, as they may be severely impacted or killed.
- Avoid piling vegetative debris on top of native rockland hammock vegetation or in sinkholes when conducting invasive species control.

- Consider relocating rare species such as epiphytes, ferns, and *Liguus* tree snails when critical populations may be harmed by restoration activities.
- In areas where many species of plants grow together and overlap (e.g., vines), crews should take extra precautions to only treat known, identifiable targets.
- Restrict herbicide use within vicinity of sinkholes.
- Minimize trampling rare plants, surface roots, and rock formations when conducting restoration activities in rockland hammocks.

Historic Transverse Glade

GOAL 1: Restore and maintain to the extent practicable transverse glade structure and function to maximize native biotic diversity and preserve natural resource values.

OBJECTIVES AND RECOMMENDED ACTIONS:

HTG.1.1. Establish the appropriate fire regime for historic transverse glades, using prescribed fire in conjunction with other appropriate techniques.

- Conduct prescribed burning to approximate natural fire regimes.
- Utilize site preparation and firing techniques that are safe and will reduce negative impacts to public, staff, and property.
- Conduct pre- and post-burn monitoring to assess fire effects.
- Establish and utilize a procedure to evaluate the prescribed burn (e.g. fire behavior, smoke dispersion, safety, public response) and assess whether objectives set in the prescription were met.
- Due to the extreme rarity of historic transverse glades, do not establish new firebreaks within them.

HTG.1.2. Rehydrate historic transverse glades to restore historic hydrology, increasing availability of water for species requiring more mesic or hydric conditions.

- Increase quality water availability.
- Implement physical improvements to increase water availability such as weir installation, canal plugging, and pumping.

HTG.1.3. Establish or restore the appropriate vegetative structure and composition in historic transverse glades.

- Use restoration strategies that limit the development of canopy.
- When necessary, modify the understory (native pines, hardwoods, vines, etc.) to restore historical structure, to expand potential habitat for herbs and forbs, and/or to improve smoke management.
- Identify relict plant species that are specific to the transverse glade habitat.
- Consider conducting experimental outplantings of transverse glade plant species into restored marl prairies.
- Survey for rare transverse glade plant species in areas of appropriate habitat.
- Consider reintroducing extirpated transverse glade plant species.

GOAL 2: Develop best management practices for historic transverse glades consistent with other stated goals.

OBJECTIVES AND RECOMMENDED ACTIONS:

HTG.2.1. Ensure that restoration and monitoring practices in historic transverse glades minimize deleterious off-target effects on native plant and animal species.

- Schedule and conduct prescribed burns to avoid negative long-term impact on rare species during critical life history phases.
- Manage transverse glade sites as multiple burn units through the use of wetlines and other non-invasive methods.
- Avoid establishing crew trails that can change local water flow and hydrology.
- Avoid transfer of exotic organisms in water inputs.

HTG.2.2. Prevent habitat loss and damage to historic transverse glades from development.

- Utilize existing roads and footpaths to develop low-impact interpretive opportunities.
- Due to their rarity, development within historic transverse glade areas should be minimized.

HTG.2.3. Protect the integrity of historic transverse glades in the layout, design, and implementation of adjacent development projects.

- Ensure that projects account for hydrological and fire management needs of historic transverse glades.

Scrubby Flatwoods

GOAL 1: Restore and maintain scrubby flatwoods structure and function to maximize native biotic diversity and preserve natural resource values.

OBJECTIVES AND RECOMMENDED ACTIONS:

SF.1.1. Establish the appropriate fire regime for scrubby flatwoods, using prescribed fire in conjunction with other appropriate techniques.

- Conduct prescribed burning to approximate natural fire regimes.
- Utilize site preparation and firing techniques that are safe and will reduce negative impacts to the public, staff, and property.
- Conduct pre- and post-burn monitoring to assess fire effects.
- Establish and utilize a procedure to evaluate the prescribed burn (e.g. fire behavior, smoke dispersion, safety, public response) and assess whether the objectives set in the prescription were met.

SF.1.2. Establish or restore the appropriate canopy and understory structure in scrubby flatwoods.

- Use restoration strategies that will achieve uneven-aged canopy structure with varying densities and age distributions of trees.
- When necessary, modify understory (native hardwoods, vines, etc.) to restore historical structure, to expand potential habitat for herbs and forbs, and/or to improve smoke management.

GOAL 2: Develop best management practices for scrubby flatwoods consistent with other stated goals.

OBJECTIVES AND RECOMMENDED ACTIONS:

SF.2.1. Ensure that restoration and monitoring practices in scrubby flatwoods minimize deleterious off-target effects to native plant and animal species.

- Schedule and conduct prescribed burns to avoid negative long-term impact on rare species during critical life history phases.
- Divide sites into multiple burn units and conduct experimental prescribed fires to determine the plant community response.
- Consider relocating rare species such as bromeliads when critical populations may be harmed by fire or pest outbreak.
- Reduce and remove fuel through hardwood thinning and spot-treatment with herbicides prior to burns to reduce fire intensity and smoke, and minimize mortality of rare species.

SF.2.2. Minimize habitat loss and damage from development of trails, buildings, sewer lines, etc.

- Ensure that construction of trails minimizes impacts to scrubby flatwoods and that trails double as fire control lines.
- Manage trails and fire breaks as habitat for low, herbaceous species.

SF.2.3. Protect the integrity of natural areas in the layout, design, and implementation of development projects adjacent to scrubby flatwoods.

- Due to the fact that scrubby flatwoods burn with high intensity, ensure that development projects account for fire management needs of scrubby flatwood sites.
- Encourage the use of local native plant material in sites adjacent to natural areas, using species beneficial to scrubby flatwoods.
- Discourage the use of flammable plant material in landscaping adjacent to scrubby flatwoods.

Coastal Uplands

(Includes: Beach Dune, Coastal Berm, Coastal Strand and Maritime Hammock)

GOAL 1: Restore and maintain coastal uplands structure and function to maximize native biotic diversity and preserve natural resource values.

OBJECTIVES AND RECOMMENDED ACTIONS:

CU.1.1. Establish the appropriate fire regime for fire-dependent coastal upland communities such as coastal strand and dune, using prescribed fire in conjunction with other appropriate techniques.

- Conduct prescribed burning to approximate natural fire regimes.
- Utilize site preparation and firing techniques that are safe and will reduce negative impacts to the public, staff, and property.
- Conduct pre- and post-burn monitoring to assess fire effects.
- Establish and utilize a procedure to evaluate the prescribed burn (e.g. fire behavior, smoke dispersion, safety, public response) and assess whether objectives set in the prescription were met.

CU.1.2. Establish or restore the appropriate canopy, understory structure, and topography in coastal uplands, or re-establish after disturbance from storms, etc.

- For coastal strand sites, use restoration strategies that will achieve a diverse landscape with patches of open sand, *Serenoa repens* (saw palmetto), and scattered hardwood shrubs.
- Manage coastal strand sites to restore historical topography and ecosystem structure, and to expand potential habitat for herbs and forbs. When necessary, remove native species that are not consistent with the historic vegetation structure.
- Restore the appropriate canopy, understory structure, and topography in coastal uplands after storms, when determined necessary.
- Evaluate the impacts of wrack-line deposition on plant species and remove portions, if necessary.

GOAL 2: Develop best management practices for coastal uplands consistent with other stated goals.

OBJECTIVES AND RECOMMENDED ACTIONS:

CU.2.1. Ensure that restoration and monitoring practices in coastal uplands minimize deleterious off-target effects to native plant and animal species.

- When removing invasive plants, minimize piling of plant debris to reduce

concentrations of nutrients in low-nutrient system, coastal strand and dune.

- Conduct experimental prescribed burns to determine the role of fire in the life history of rare plants in coastal uplands.
- Consider relocating rare species when critical populations may be harmed by fire.
- Conduct experimental removal of trees and shrubs to promote the growth of fire-adapted plants.

CU.2.2. Minimize habitat loss and damage from development of trails, buildings, sewer lines, etc.

- Ensure that construction of trails minimizes impacts to coastal uplands and that trails double as fire breaks.
- Manage trails and fire breaks as habitat for low, herbaceous species.

CU.2.3. Protect the integrity of natural areas in the layout, design, and implementation of development projects adjacent to coastal uplands.

- Ensure that projects account for fire management needs of coastal uplands.
- Encourage the use of local native plant material in sites adjacent to natural areas. Use species beneficial to coastal systems, avoiding species such as *Lantana camara* (shrubverbena, lantana), *Calophyllum inophyllum* (beautyleaf), *Washingtonia robusta* (Washington fan palm), and *Scaevola sericea* (beach naupaka).

Wetlands

(Includes: Bayhead, Dome Swamp, Marl Prairie, Swale, Tidal Marsh, Tidal Swamp, and Freshwater Tidal Swamp)

GOAL 1: Restore and maintain freshwater wetlands structure and function to maximize native biotic diversity and preserve natural resource values.

OBJECTIVES AND RECOMMENDED ACTIONS:

W.1.1. Encourage restoration of historic hydrology to freshwater wetlands and adjacent estuaries.

- Integrate freshwater wetlands into regional wetland restoration plans.
- Participate in the Comprehensive Everglades Restoration Plan (CERP) process and other regional water management restoration projects to maximize the restoration of historic hydrology in freshwater and coastal wetlands.
- Remove hydrologic barriers such as roads, fill pads, and mosquito ditch spoil.
- Consider filling or plugging canals that drain water from the system.

W.1.2. Restore or improve water quality in wetlands.

- Implement local authority and work with federal and state agencies to: (1) reduce nutrient inputs from agricultural fields into regional canals that serve as water sources for freshwater wetlands, and (2) provide appropriate salinity regime for coastal wetlands.
- Establish buffer zones around wetlands to minimize nutrient and pollutant inputs from adjacent land uses.

W.1.4. Establish the appropriate fire regime for freshwater wetlands, using prescribed fire in conjunction with other appropriate techniques.

- Conduct prescribed burning to approximate natural fire regimes.
- Utilize site preparation and firing techniques that are safe and will reduce negative impacts to public, staff, and property.
- Conduct pre- and post-burn monitoring to assess fire effects.
- Establish and utilize a procedure to evaluate the prescribed burn (e.g. fire behavior, smoke dispersion, safety, public response) and assess whether objectives set in the prescription were met.
- Prevent soil fires in tree islands during drought periods.

W.1.5. Work with owners of private inholdings to reduce impacts on freshwater wetlands

- Encourage and assist with control of populations of invasive plants on private inholdings.
- Discourage and control the release of domestic animals from private inholdings.

- Develop legal mechanisms to include inholdings in the larger prescribed burn unit.
- Discourage inappropriate use of freshwater wetlands such as ORV use, target shooting, and unregulated hunting.

W.1.6. Reduce populations of exotic fish.
- Reduce depth of canals in order to eliminate thermal refugia for tropical exotic fishes.

GOAL 2: Develop best management practices for freshwater wetlands consistent with other stated goals.

OBJECTIVES AND RECOMMENDED ACTIONS:

W.2.1. Ensure that restoration and monitoring practices in freshwater wetlands minimize deleterious off-target effects to native plant and animal species.
- Schedule and conduct prescribed burns in appropriate habitats (i.e., not tree islands) to avoid negative long-term impacts on rare species during critical life history phases.
- Divide sites into multiple burn units to minimize impacts to native animals.
- Consider relocating or protecting rare species when critical populations may be harmed by fire.
- Evaluate possible off-target effects of herbicides when developing management strategies.
- Determine acceptable off-target damage from aerial herbicide applications.

W.2.2. Minimize habitat loss and damage from development of trails, buildings, sewer lines, etc.
- Ensure that construction of trails minimizes impacts to freshwater wetlands and that trails double as fire breaks.

W.2.3. Protect the integrity of natural areas in the layout, design, and implementation of development projects adjacent to freshwater wetlands.
- Ensure that projects account for fire management and hydrological needs of freshwater wetlands.
- Encourage the use of local native plant material in sites adjacent to natural areas. Use species beneficial to freshwater wetlands, avoiding species such as *Melaleuca viminalis* (weeping bottlebrush).
- Monitor adjacent tree farms and nursery operations for prohibited species.

Ecotones

GOAL 1: Restore and maintain ecotone structure and function to maximize native biotic diversity and preserve natural resource values.

OBJECTIVES AND RECOMMENDED ACTIONS:

E.1.1. Maintain or restore historic ecotones in preserves containing multiple ecosystems.

- Eliminate firebreaks between habitats, or where this is not possible, continue burns across firebreaks to recreate historic ecotones.
- Use prescribed fire where possible to restore and maintain ecotones.
- When necessary, reduce hardwoods and remove invasive plants from fire-suppressed pine rocklands to recreate ecotones.
- Reintroduce rare ecotonal plant species to restored ecotones.

GOAL 2: Develop best management practices for ecotones consistent with other stated goals.

OBJECTIVES AND RECOMMENDED ACTIONS:

E.2.1. Ensure that restoration and monitoring practices in ecotones minimize deleterious off-target effects to native plant and animal species.

- Consider relocating rare species such as epiphytes and *Liguus* tree snails when critical populations may be harmed by ecotone restoration.
- Avoid piling storm and other debris along ecotones to protect organisms such as bromeliads and terrestrial orchids.

APPENDIX

*Table 1. MIAMI-DADE NATURAL AREAS MANAGEMENT COOPERATING AGENCIES*BY TOPIC*

Fire management	M-D DERM, M-D Parks, M-D Fire Rescue, M-D Risk Management, ENP, FDOF, TNC (training)
Exotic Plants	M-D DERM, M-D Parks, BNP, FPL, FDACS (Pest. Cert.), USFWS, DEP (BIPM), FLEPPC (list committees, etc.), TNC (community outreach), FNGLA, IRC
Exotic Animals	UF-IFAS, FFWCC
Monitoring/Research/ Rare Species Mgmt	IRC, USFWS, FTBG, FFWCC, FDACS (DPI), FNAI, UM, FIU, M-D Public Works Mosquito Control (to reduce spraying in natural areas), DEP
Reforestation/Planting	FDOF (grows seedling pines), M-D DERM (collects pine seed), M-D Parks (landscaping), relevant nurseries
Hydrology	SFWMD, ACOE
Public Use	M-D Parks, FNPS, TAS, DEP (G&T), MPO (bicycles), community support orgs., homeowners assns., civic assns., environmental education community
Protection	M-D Police Dept (including Environmental Crimes Unit, Agriculture Patrol Unit and Police Services (homeless), M-D Solid Waste Management, FFWCC, SFWMD (hammocks only), DEP, M-D DERM, USFWS
Emergency Response	M-D Emer. Mgt., incident command team (F-DOF, M-D Fire Rescue, ENP, Parks, DERM, etc.), UF-IFAS (pest outbreaks)

*Other agencies may be added to this preliminary list

Table 2. *COOPERATING AGENCY CONTACT INFORMATION*

Abbreviation	Agency	Telephone	Website
ACOE	US Army Corps of Engineers, Jacksonville	904-232-2241	www.usace.army.mil
BNP	Biscayne National Park, Headquarters	305-230-1144	www.nps.gov/bisc
DEP ➢ BIPM ➢ G&T	Florida Department of Environmental Protection ➢ Bureau of Invasive Plant Management ➢ Office of Greenways and Trails	 850-487-2600 850-245-2052	 www.dep.state.fl.us/lands/invaspec www.dep.state.fl.us/gwt
ENP	Everglades National Park, Beard Research Center	305-242-7700	www.nps.gov/ever
FDACS ➢ DPI ➢ Pest. Cert.	Florida Dept. Agriculture and Consumer Services ➢ DPI = Division of Plant Industry ➢ Pest. Cert. = Pesticide Certification	 352-372-3505 850-488-3314	 doacs.state.fl.us/pi doacs.state.fl.us/onestop/aes/pestapp.html
FDOF	Florida Division of Forestry	305-257-0875	www.fl-dof.com
FFWCC	Florida Fish and Wildlife Conservation Commission (South Regional Office)	305-956-2500	myfwc.com
FIU	Florida International University, Dept. of Biology	305-348-2201	www.fiu.edu/%7Ebiology
FLEPPC	Florida Exotic Pest Plant Council		www.fleppc.org
FNAI	Florida Natural Areas Inventory	850-224-8207	www.fnai.org
FNGLA	Florida Nursery Growers and Landscape Association	800-375-3642	www.fngla.org
FNPS	Florida Native Plant Society		www.fnps.org
FPL	Florida Power and Light	305-442-0388	www.fpl.com
FTBG	Fairchild Tropical Botanic Garden, Research	305-667-1651 ex. 3410	www.fairchildgarden.org

Table 2. *COOPERATING AGENCY CONTACT INFORMATION (CONTINUED)*

Abbreviation	Agency	Telephone	Website
IRC	The Institute for Regional Conservation	305-247-6547	www.regionalconservation.org
ISA	International Society for Arboriculture	888-ISA-TREE	www.isa-arbor.com/home.asp
MPO	Miami-Dade Metropolitan Planning Org.	305-375-4507	www.co.miami-dade.fl.us/mpo/home.htm
M-D	Miami-Dade County		
➢ DERM	➢ DERM	305-372-6641	www.miamidade.gov/derm
➢ Emer Mgt	➢ Office of Emergency Management	305-468-5900	www.miamidade.gov/oem
➢ FireRescue	➢ Fire Rescue	786-331-5000	www.miamidade.gov/mdfr
➢ Parks	➢ Park and Recreation Department	305-755-7800	www.miamidade.gov/parks
➢ Police Dept	➢ Police Department	305-4POLICE	www.mdpd.com
	♦ Agriculture Patrol Unit	305-383-6800	www.mdpd.com/sta08apuinfo.htm
	♦ Environmental Crimes Unit	305-477-1616	www.miamidade.gov/derm/code_report_eviron_comp.asp
	♦ Police Services	305-471-2625	www.mdpd.com/adp.htm
➢ Pub Works	➢ Public Works (Mosquito Control)	305-592-1186	www.miamidade.gov/pubworks/mosquitoes/mhome.asp
➢ Risk Mgmt	➢ Risk Management Division	305-375-4400	www.miamidade.gov/gsa/depart_risk.asp
➢ SolidWaste	➢ Solid Waste Management	305-514-6666	www.miamidade.gov/dswm
SFWMD	South Florida Water Management District	561-686-8800	www.sfwmd.gov
TAS	Tropical Audubon Society	305-667-7337	www.tropicalaudubon.org
TNC	The Nature Conservancy (S. FL outreach)	954-564-6144	nature.org
UF-IFAS	University of Florida, Inst. Food & Agric. Sci., Dept. Wildlife Ecology & Conservation	352-846-0643	www.wec.ufl.edu/index2.html
UM	University of Miami, Dept. of Biology	305-284-3973	fig.cox.miami.edu
USFWS	United States Fish and Wildlife Service, Vero Beach office	561-562-3909	www.fws.gov

Table 3. *LIST OF HABITATS IN EACH NATURAL AREA (N=96)*

Site Name	Habitat(s)
A.D. Barnes	Pine Rockland, Rockland Hammock
Arch Creek	Wetlands, Rockland Hammock
Arch Creek Addition*	Rockland Hammock
Big & Little George*	Rockland Hammock
Bill Sadowski	Rockland Hammock, Pine Rockland
Black Creek Forest*	Pine Rockland, Rockland Hammock
Black Point	Wetlands, Coastal Uplands
Biscayne Wetlands	Wetlands, Coastal Uplands
Boystown*	Pine Rockland
C - 111*	Wetlands
Camp Greynolds	Coastal Uplands, Rockland Hammock, Wetlands
Camp Owaissa Bauer	Pine Rockland, Rockland Hammock
Castellow Hammock	Rockland Hammock, Pine Rockland
Castellow Hammock #28*	Rockland Hammock
Chapman Field	Wetlands
Deering Estate at Cutler	Rockland Hammock, Pine Rockland, Wetlands
Colonial Drive	Pine Rockland
Coral Pine	Pine Rockland
Coral Reef	Pine Rockland
County Line Scrub*	Scrubby Flatwoods
Crandon	Coastal Uplands, Wetlands
Deering North Addition*	Coastal Uplands, Wetlands
Deering South Addition*	Rockland Hammock, Pine Rockland, Coastal Uplands
Dolphin Center	Scrubby Flatwoods
Dolphin Center Addition*	Scrubby Flatwoods
Eachus Pineland*	Pine Rockland
East East Greynolds	Wetlands, Rockland Hammock, Coastal Uplands
East Greynolds Addition	Wetlands, Rockland Hammock
East Greynolds	Wetlands, Rockland Hammock, Coastal Uplands
Fairchild Trop. Bot. Garden	Wetlands
Florida City Pineland*	Pine Rockland
Fuchs Hammock	Rockland Hammock, Pine Rockland
Fuchs Hammock Addition*	Pine Rockland, Rockland Hammock
Gold Coast Railroad	Pine Rockland
Goulds Pineland*	Pine Rockland
Greynolds	Wetlands, Pine Rockland, Rockland Hamm., Coastal Uplands
Harden Hammock*	Rockland Hammock
Hattie Bauer Hammock*	Rockland Hammock
Haulover	Wetlands, Coastal Uplands
Highland Oaks	Wetlands
Holiday Hammock*	Rockland Hammock
Homestead Bayfront	Wetlands
Ingram Pineland *	Pine Rockland

Site Name	Habitat(s)
Kendall Indian Hammocks	Rockland Hammock
Kendallwood	Rockland Hammock
Larry & Penny Thompson	Pine Rockland, Historic Transverse Glade
Lincoln City #2	Pine Rockland
Loveland Hammock*	Rockland Hammock
Lucille Hammock*	Rockland Hammock
Ludlam Pineland Tract*	Pine Rockland
M.E. Thompson Campground	Historic Transverse Glade
Mangrove Preserve	Wetlands
Martinez	Historic Transverse Glade
Matheson Hammock	Rockland Hammock, Wetlands, Historic Transverse Glade
Medsouth Park	Pine Rockland
Meissner Hammock*	Rockland Hammock
Metro Zoo	Pine Rockland
Model Lands*	Wetlands
Navy Wells #39*	Pine Rockland
Navy Wells #42*	Pine Rockland
Navy Wells Preserve	Pine Rockland
Ned Glenn Pineland*	Pine Rockland
Nixon Smiley Preserve	Pine Rockland
Oak Grove	Rockland Hammock
Oleta River Corridor Tract C*	Wetlands
Oleta River Corridor Terama*	Wetlands
Owaissa Bauer Addition*	Rockland Hammock, Pine Rockland
Palm Drive (CARL)*	Pine Rockland
Pelican Harbor	Wetlands
Pine Island	Pine Rockland
Pine Shore	Pine Rockland
Quail Roost*	Pine Rockland
R. Hardy Matheson	Wetlands, Pine Rockland, Rockland Hamm., Coastal Uplands
Rock Pit	Pine Rockland
Rock Pit #34	Pine Rockland
Rock Pit #39	Pine Rockland
Rockdale*	Pine Rockland
Rolling Oaks	Pine Rockland, Rockland Hammock
Ron Ehman	Pine Rockland
Ross Hammock*	Rockland Hammock
Royal Oaks	Rockland Hammock
Seminole Wayside	Pine Rockland
Silver Palm Groves*	Pine Rockland
Silver Palm Hammock	Rockland Hammock, Pine Rockland
South Dade Wetlands*†	Wetlands
Sunkist	Pine Rockland
Sunny Palms*	Pine Rockland
Tamiami #8*	Pine Rockland
Tamiami Complex Addition*	Pine Rockland

Site Name	Habitat(s)
Trail Glades Range	Wetlands
Tree Island Park*	Wetlands
Trinity Pineland*	Pine Rockland
Tropical Park	Pine Rockland
Vizcaya Museum	Wetlands, Rockland Hammock
West Biscayne Pineland	Pine Rockland
Whispering Pines	Rockland Hammock, Pine Rockland

* Includes acquired EEL Property

† Includes property owned by South Florida Water Management District

MISSION STATEMENTS

NAM Mission Statement: To restore, protect, and manage Miami-Dade County's naturally occurring plant communities through resource management, inter-governmental environmental liaison, and community outreach including environmental education and volunteer programming to preserve these areas for present and future generations of South Floridians.

EEL Purpose: To manage environmentally endangered lands with the primary objective of maintaining and preserving their natural resource values by employing management techniques that are most appropriate for each native community so that our natural heritage may be preserved for future generations.

DEFINITIONS

Goal - A desired future condition, at least 50-100 years from now.

Objective - A shorter-term, smaller-scale benchmark needed to reach the goal.

Action - The means to reach a specific objective.

LITERATURE CITED

Florida Natural Areas Inventory (FNAI) and Florida Department of Natural Resources (FDNR). 1990. Guide to the natural communities of Florida. Florida Natural Areas Inventory, Tallahassee, FL.

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The Institute for
Regional Conservation

ATTACHMENT 7

Summary of Shorebird Habitat Mitigation

TURKEY POINT UNITS 6 & 7
SHOREBIRD HABITAT MITIGATION SUMMARY

To compensate for the loss of potential habitat for shorebirds within the Units 6 & 7 Plant Area, FPL has committed to the following:

1. Everglades Mitigation Bank Assessment Area 10

In consultation with the Florida Fish and Wildlife Conservation Commission and Miami Dade County, FPL has committed to funding the enhancement and preservation of an approximately 170-acre parcel of sparsely vegetated mud flat habitat located immediately to the southeast of the industrial wastewater treatment facility within the Everglades Mitigation Bank (see enclosed aerial photograph) as described in the Conditions of Certification listed below:

Conditions of Certification Section B.IV.F.3.b states:
"*Where practicable, the Licensee will mitigate for loss of shorebird habitat in consultation with FWC.*
b. For shorebirds utilizing mudflat habitat, the Licensee will consider mitigation through preservation, restoration, enhancement, or a combination thereof, of similar habitat within the Everglades Mitigation Bank or other location deemed as appropriate in consultation with the USFWS."

Conditions of Certification Section B.VII.O.6 states:
"*FPL shall mitigate for loss of shorebird habitat through credits obtained for the restoration and preservation of approximately 170 acres of similar habitat within the Everglades Mitigation Bank. These mitigation credits shall be permanently deducted from the EMB ledger and dedicated to Turkey Point 6 & 7 Project. Five credits obtained from this area shall be used solely to offset the loss of shorebird habitat and shall not be included within the credits necessary to offset mangrove or wetland impacts*."

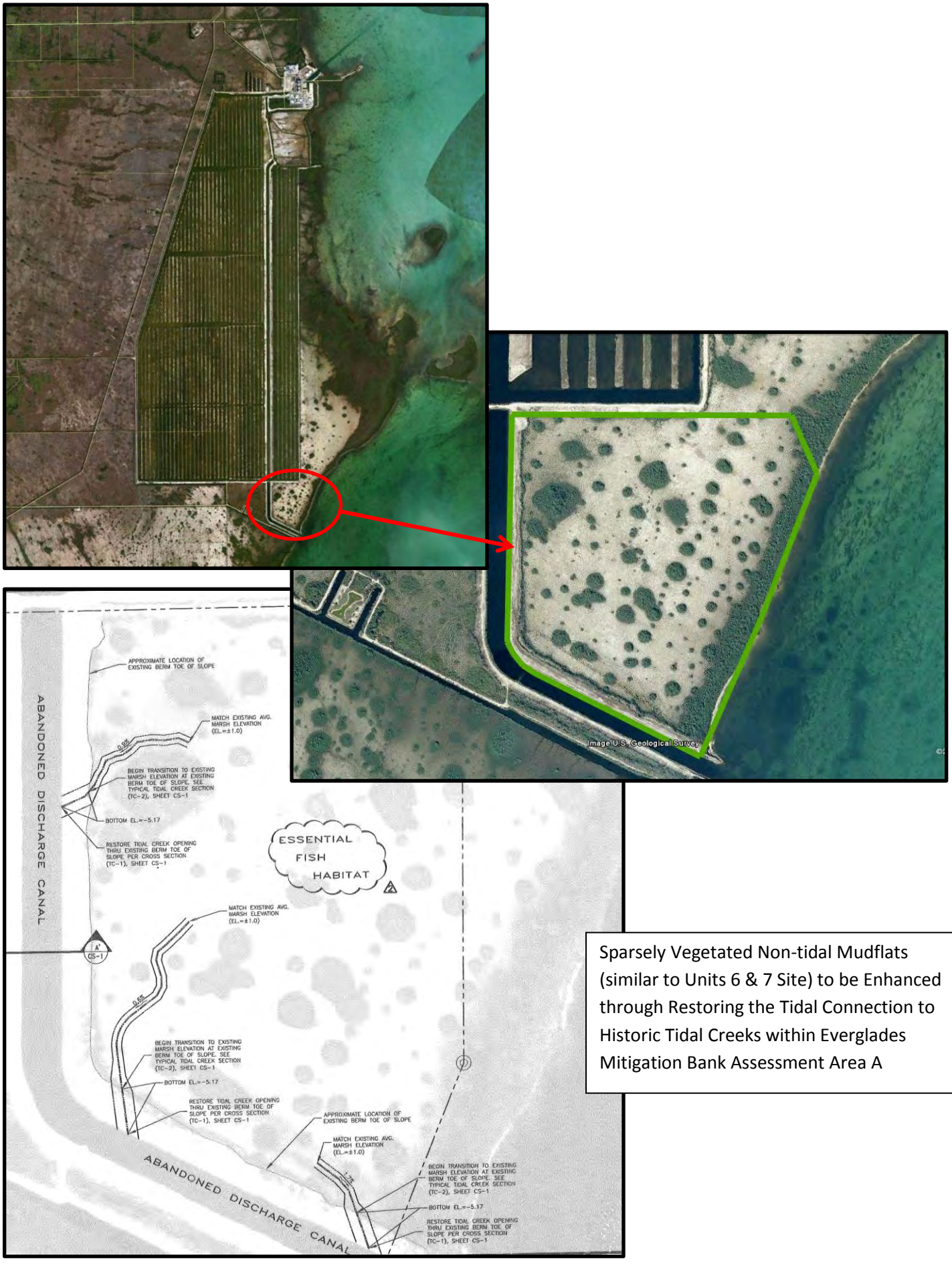
2. Northwest Restoration Site

Mitigation activities will restore the native vegetative community composition and enhance the hydrologic regime within the area, targeting conditions typical of a shallow sawgrass marsh/marl prairie community with mangroves and scattered tree islands. The majority of the Northwest Restoration Site will be restored to native sawgrass marsh, with areas of mangrove swamp, mixed wetland hardwood tree islands, and relatively open marl prairie areas supporting periphyton mat communities specifically beneficial for wading birds and shorebirds.

3. SW 320th Street Restoration Site

The target communities for the SW 320th Street Restoration Site are freshwater marsh and mixed wetland hardwood wetlands dominated by native species typical of the historical condition. Areas of exotic wetland hardwoods and palm tree nurseries will be restored to freshwater marsh, while the exotic wetland hardwood/mixed wetland hardwood forest along the eastern portion of the site will be restored to a native mixed wetland hardwood community. Control of exotic species of vegetation will facilitate regeneration of desirable wetland vegetation from the seed bank, supplemented by planting as necessary to achieve the target communities. Within the restored freshwater marsh, sparsely-vegetated areas of exposed substrate will be created to provide potential shorebird foraging habitat.

Shorebird Habitat Mitigation at EMB Assessment Area 10



Sparsely Vegetated Non-tidal Mudflats (similar to Units 6 & 7 Site) to be Enhanced through Restoring the Tidal Connection to Historic Tidal Creeks within Everglades Mitigation Bank Assessment Area A

ATTACHMENT 8

Summary of Pine Rockland Avoidance and Minimization Efforts

TURKEY POINT UNITS 6 & 7
PINE ROCKLANDS AVOIDANCE AND MINIMIZATION SUMMARY

In response to SCA Transmission Completeness Round 3 question MDC-4, FPL provided design options to construct the transmission line within the King's Highway Pineland that minimize ground disturbance to the greatest extent practicable. Figure 2 from FPL's completeness response MD(3)-04 is enclosed. The proposed design limits impacts within the King's Highway Pineland to only 0.84 acres, utilizing areas that have been previously disturbed to the greatest extent practicable.

Listed species observed within the construction footprint during pre-clearing surveys may be relocated to undisturbed areas of the transmission line right-of-way where feasible, as described in Condition of Certification C.VII.H.5: "*Where protection of rare, endangered, threatened, or potentially endangered native plants is not possible, FPL shall relocate individual plants where rare, endangered, threatened, or potentially endangered native plants, are located within a construction zone, where practical*."

Condition of Certification Section C.VII.F (page 161 of http://publicfiles.dep.state.fl.us/Siting/Outgoing/Web/Certification/pa03_45_2014_units6_7.pdf) describes methods to avoid and minimize impacts within the King's Highway Pineland Natural Forest Community during construction and operation:

F. Kings Highway Natural Forest Community (Parcel Folio Number 30-7810-000-0140)

1. Within the Kings Highway Pineland Natural Forest Community (NFC), as defined in Section 24-5 of MDC Code, FPL shall minimize the permanent impacts (defined as the location of pole pads and anchors and other infrastructure that remains post construction) of the proposed transmission lines to no more than ten percent of the total NFC acreage, without providing appropriate mitigation. To the extent practicable and unless an engineering or safety concern arises, FPL will use best efforts to accommodate the County's preference for the alignment shown on Attachment P [Figure 2 from FPL's completeness response no. MD(3)-04) regarding the NFC].

2. Within the Kings Highway Pineland NFC, FPL shall avoid and/or minimize the temporary impacts of the proposed transmission lines, including the following measures, to the extent practicable:

a. FPL shall place any new access road outside the designated NFC boundary.

b. FPL shall maintain the substrate and understory within the NFC, utilizing best management practices such as mats and rubber tired vehicles for construction access.

c. FPL shall minimize clearing, grubbing and substrate disturbance within the NFC

d. FPL shall not stage any equipment, materials, mulch, or debris within the NFC

e. FPL shall only conduct minimum trimming, pruning or topping of native trees as necessary to maintain the minimum safety and

electrical clearances in accordance with the most recent ANSI A-300 Standard Practices of Tree Care Operations.

f. *All vegetative debris that is cut, trimmed, topped, or otherwise removed shall be removed by FPL from the NFC for proper disposal.*

g. *FPL shall install high-visibility barriers during construction tomark for protection any trees and vegetation within the NFC that are outside of the work areas within the ROW during construction. These barriers shall be sufficient to prevent construction impacts, including but not limited to, encroachment of fill, sediment, or debris that may result in adverse impacts to NFC, and shall be maintained in good condition and remain in place for the duration of the construction project.*

h. *FPL shall not construct roads or install fill for roads and pads within the Kings Highway Pineland Natural Forest Community, although FPL shall be allowed to place the back-fill needed for the installation of the poles required within that parcel.*

i. *FPL shall utilize low-impact methods for conductor stringing within the Kings Highway Pineland Natural Forest Community.*

3. FPL shall eradicate or remove prohibited and controlled plant species and shall manage the transmission line ROW within the NFC to facilitate the regeneration of pine rockland plant species and discourage the growth and introduction of non-pine rockland plant species including hardwood hammock species and exotic species to the extent practicable, as specified in the Miami-Dade County Natural Areas Management Plan for Pine Rocklands.

4. Permanent and temporary impacts to the NFC outside FPL's transmission line ROW are prohibited.

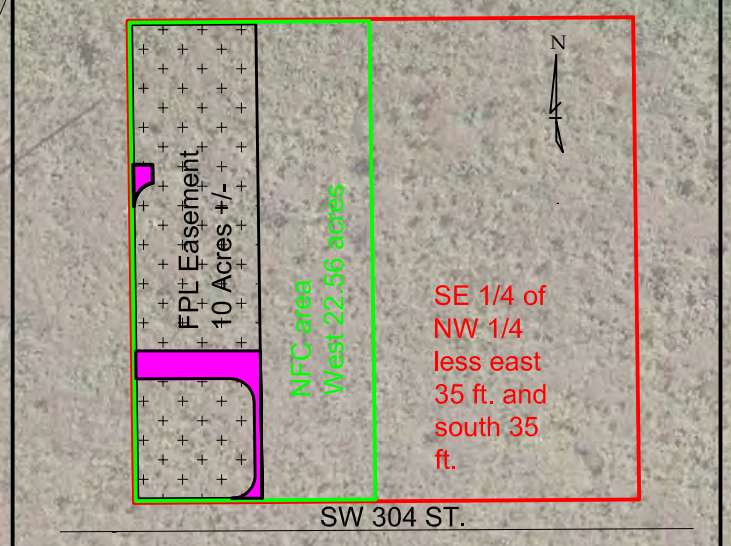
MD(3)-04 Figure 2.

Existing
138 kV pole

FPL
R/W line

PROPERTY BOUNDARY

New midspan
unguyed 230 kV pole
if required



Location Sketch - N.T.S.

Corridor Boundary
(Approximate)

.08 acres
3,557 sq ft

52'

50'

N FPL
R/W line

975'

Kings
Highway
Pineland

Proposed access for midspan pole, if required.

487'

New single pole
guyed ,500 kV
& 230 kV poles

FPL R/W line

0 100' 200'

Existing
138 kV pole

Indicates areas where construction, maintenance and repair work will be focused

76'

.76 acres
33,118 sq ft

Note: Clearing and grubbing will occur in the pole and anchor areas and along the access route.Trees with mature height above 14' will be removed throughout the right-of-way.
One time access longitudinaly along the entire easement will be required for a vehicle to pull in conductor lines for each circuit.

This is a conceptual design for discussion purposes only, Dimensions may vary

R65'

18'

18' wide Access Area
located where
disturbances have
previously occurred

50'

R65'

18'

R65'

	Acres	Square Footage
	0.08	3,557
	0.76	33,118
Totals	0.84	36,675

PROPERTY BOUNDARY

SW 304 ST.

Clear Sky-Levee #1 & #2 500 kV lines
Clear Sky-Pennsuco 230 kV line
Option to construct with guyed structures in Kings Highway Pineland Natural Forest Community (NFC).

RSH 11/19/2009