

APPENDIX 10.4

ENVIRONMENTAL RESOURCE PERMIT

**JOINT APPLICATION FOR
INDIVIDUAL ENVIRONMENTAL RESOURCE PERMIT/
AUTHORIZATION TO USE STATE-OWNED
SUBMERGED LANDS/
FEDERAL DREDGE AND FILL PERMIT**

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION/
WATER MANAGEMENT DISTRICTS/
U.S. ARMY CORPS OF ENGINEERS

Effective October 1, 2013



**DUKE ENERGY FLORIDA, INC.
CITRUS COMBINED CYCLE PROJECT**



INSTRUCTIONS FOR USE OF THIS FORM:

This form is designed to assist you in submitting a complete application. All applications must include Section A- General Information for All Activities. Sections B through H list typical information that is needed based on the proposed activities, and are only required as applicable. Part 1-C of Section A will guide you to the correct sections needed based on your proposed activities. Applicants are advised to consult Chapter 62-330, F.A.C., and the Environmental Resource Permit Applicant's Handbook Volumes I and II for information regarding the ERP permitting process and requirements while preparing their application. Internet addresses for Chapter 62-330, F.A.C. and the Applicant's Handbook, Agency contact information, and additional instructions for this form can be found in Attachment 1.

What Sections of the Application Must I Fill Out?

Does the project involve....	Section							
	A- General Information	B- Single Family Projects	C- Wetlands and other Surface Waters	D- Structures or Works in Surface Waters	E- Stormwater Management System	F- State-owned Submerged Lands	G- Mitigation Banks	H- Mines
Fill in wetlands or waters for a single family residence?	X	X						
Docks, shoreline stabilization, seawalls associated with a single family residence?	X	X				X, if applicable		
Wetland impacts (other than associated with an individual residence)?	X		X					
Boating facilities, a marina, jetty, reef, or dredging?	X		X	X		X if applicable		
Any work on state owned submerged land?	X		X			X		
Construction of a stormwater management system?	X		X, if applicable		X			
Constructing a mitigation bank?	X		X		X, if applicable		X	
Creating a mine?	X		X, if applicable					X

Note- if you are required to provide Section B, then you do not have to provide any other Sections, unless the activities are on state-owned submerged lands. In that case, Section F will also be required.

If you have any questions, or would like assistance completing this form, please contact the staff of the nearest office of either the Florida Department of Environmental Protection (DEP) or a Water Management District (WMD) (see Attachment 2).

Section A: General Information for All Activities

PART 1: NAME, APPLICATION TYPE, LOCATION, AND DESCRIPTION OF ACTIVITY

A. Name of project, including phase if applicable:

Duke Energy Florida, Inc., Citrus Combined Cycle (CCC) Project

B. This is for (check all that apply):

- ☒ Construction or operation of **new** works, activities and/ or a stormwater management system
- ☐ **Conceptual Approval** of proposed works, activities and/ or a stormwater management system
- ☐ Modification or Alteration of **existing** works activities and / or a stormwater management system. Provide the existing DEP or WMD permit #, if known: _____ Note: Minor modifications do not require completion of this form, and may instead be requested by letter.
- ☐ **Maintenance or repair** of works, activities and/ or stormwater management system previously permitted by the DEP or WMD Provide existing permit #, if known: _____
- ☐ Abandonment or removal of works, activities and/ or stormwater management system Provide existing DEP or WMD permit #, if known: _____
- ☐ Operation of an **existing unpermitted** stormwater management system.
- ☐ Construction of additional phases of a permitted work, activity and/ or stormwater management system.
Provide the existing DEP or WMD permit #, if known: _____

C. **List the type of activities proposed. Check all that apply, and provide the supplemental information requested in each of the referenced application sections. Please also reference Applicant's Handbooks I and II for the type of information that may be needed.**

- ☐ Activities associated with one single-family residence, duplex, triplex, or quadruplex that do not qualify for an exemption or a General Permit: **Provide the information requested in Section B. Do not complete Section C.**
- ☒ Activities within wetlands or surface waters, or within 25 feet of a wetland or surface water, (not including the activities associated with an individual residence). *Examples include dredging, filling, outfall structures, docks, piers, over-water structures, shoreline stabilization, mitigation, reclamation, restoration/enhancement.* **Provide the information requested in Section C.**
- ☐ Activities within navigable or flowing surface waters such as a multi-slip dock or marina, dry storage facility, dredging, bridge, breakwaters, reefs, or other offshore structures: **In addition to Section C, also provide the information requested in Section D.**
- ☐ Activities that are (or may be) located within, on or over state-owned submerged lands (See Chapter 18-21, F.A.C. <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=18-21>): **In addition to Section B or C, also provide the information requested in Section F**

- ☒ Construction or alteration of a stormwater management system serving residential, commercial, transportation, industrial, agricultural, or other land uses, or a solid waste facility (excluding mines that are regulated by DEP). **Provide the information requested in Section E.**
- ☐ Creation or modification of Mitigation Bank (refer to Chapter 62-342, F.A.C. <https://www.flrules.org/gateway/ChapterHome.asp?Chapter=62-342>): **Provide the information requested in Section G.**
- ☐ Mines (as defined in Section 2.0 of Applicant's Handbook Volume I) that are regulated by the DEP: **Provide the information requested in Section H.**
- ☐ Other, describe: Please contact the Agency to determine which additional sections of the application are needed. See Attachment 1 for Agency contacts.

- D. Describe in general terms the proposed project, system, works, or other activities. For permit modifications, please briefly describe the changes requested to the permit:

Duke Energy Florida, Inc. (DEF), the Applicant, is proposing construction and operation of new electrical generating facilities in Citrus County, Florida. The proposed facilities will be located on an approximately 400-acre Citrus Combined Cycle Project Site (CCC Project or Site) adjacent to the eastern boundary of DEF's existing Crystal River Energy Complex (CREC) and north of the existing transmission line corridor to CREC. DEF is proposing use of the existing transmission lines and other associated off-Site linear facilities corridor that will contain interconnections from the CCC Site to the existing transmission line right-of-way. The existing corridor will also house water pipelines needed for operation of electrical generating facilities. These new linear facilities will be built on existing DEF-owned property.

- E. For activities in, on, or over wetlands or other surface waters, check the type of federal dredge and fill permit requested (if known): ☒ Individual ☐ Programmatic General permit #: SAJ
☐ General ☐ Nationwide permit #: NWP ☐ Not Applicable ☐ Not sure

- F. Project/Activity Street/Road Address or other location (if applicable):

City: **Unincorporated**

County(ies): **Citrus**

Zip: **34428**

Note: For utility, road, or ditch/canal activities, provide a starting and ending point using street names and nearest house numbers or provide length of project in miles along named streets or highways.

- G. Project location map and Section, Township, and Range information (use additional sheets if needed):
Please attach a location map showing the location and boundaries of the proposed activity in relation to major intersections or other landmarks. The map should also contain a north arrow and a graphic scale; show Section(s), Township(s), and Range(s); and must be of sufficient detail to allow a person unfamiliar with the site to find it.

Section(s): **26, 27, 33-35** Township: **17 South** Range: **16 East** Land Grant name, if applicable:

Please see Figure 1.

- H. Latitude (DMS) **28° 58' 6.83"** Longitude (DMS) **82° 40' 7.07"** (Taken from central location of the activity). Explain source for obtaining latitude and longitude (i.e. U.S.G.S. Quadrangle Map, GPS, online resource): **Google® Earth**

I. Tax Parcel Identification Number(s): **16E17S1010000, 16E17S3411000, and 16E17S3310000**

[Number may be obtained from property tax bill or from the county property appraiser's office; if on multiple parcels, provide multiple Tax Parcel Identification Numbers]

J. Directions to Site (from major roads; include distances and landmarks as applicable):
The site is located 2.3 miles west of the intersection of U.S. Highway 19 (North Suncoast Boulevard) and West Powerline Street.

K. Project area or phase area: **±400 acres (plus linear facilities corridor)**

L. Name of waterbody(ies) (if known) in which activities will occur or into which the system will discharge:
Not applicable

The following questions (M-O) are not applicable to activities related to a single-family residence, including private single-family residential docks, piers, seawalls or boat ramps.

M. Is it part of a larger plan of development or sale? ☐ yes ☒ no

N. Impervious or semi-impervious area excluding wetlands and other surface waters (if applicable):
acres or square feet
Please refer to the Stormwater Management Plan in Attachment F.

O. Volume of water the system is capable of impounding (if applicable): acre-feet.
Please refer to the Stormwater Management Plan in Attachment F.

PART 2: SUPPLEMENTAL INFORMATION, AND PERMIT HISTORY

A. Is this an application to modify an existing Environmental Resource Permit, or to construct or implement part of a multi-phase project, such as a project with a Conceptual Approval permit? ☐ Yes ☒ No *If you answered "yes", please provide permit numbers below:*

AGENCY	DATE	PERMIT/APPLICATION NO.	PROJECT NAME

- B. Indicate if there have been any **pre-application meeting(s)** or other discussions about the proposed project, system or activity. If so, please provide the date(s), location(s) of the meeting, and the name(s) of Agency staff that attended the meeting(s):

AGENCY	DATE	LOCATION	MEETING ATTENDEES
FDEP(Southwest District) Environmental Consulting and Technology, Inc.	05/27/14	Site visit	Mark Langford Maya Scohier, Allen Shuey
FDEP(Southwest District) Duke Energy Florida, Inc. Environmental Consulting and Technology, Inc.	07/18/14	Southwest District 13051 North Telecom Parkway, Temple Terrace, Florida 33637	Mark Langford, Ryan Martin, Anthony Pidala Amy Dierolf Jack Doolittle, Maya Scohier
Florida Fish & Wildlife Conservation Commission Duke Energy Florida, Inc. Hopping Green & Sams, P.A. Environmental Consulting and Technology, Inc.	07/16/14	620 South Meridian Street, Tallahassee, Florida 32399	Jason Hight, Jennifer Goff, Mary Ann Poole, Anthony Pinzino Amy Dierolf Brooke Lewis Phil Simpson
FDEP (Siting Coordination Office) Duke Energy Florida, Inc. Hopping Green & Sams, P.A. Environmental Consulting & Technology, Inc.	07/21/14	2600 Blair Stone Road, MS 5500, Tallahassee, Florida 32399	Justin Green, Robert Bull, Ann Seiler, Benjamin Melnick, Mark Langford (by telephone) Amy Dierolf Brooke Lewis, Kristy Parker (by telephone) Jack Doolittle

- C. **Attach a depiction (plan and section views), which clearly shows the works or other activities proposed to be constructed.** Use multiple sheets, if necessary, a scale sufficient to show the location and type of works, and include a north arrow and a key to any symbols used. **Specific information to be included in the plans is based on the activities proposed and is further described in Sections B-H.** However, supplemental information may be required based on the specific circumstances or location of the proposed works or other activities. **Please see Figure 2.**
- D. Processing Fee: **Please submit the application processing fee along with this application form and supplemental information.** Processing fees vary based on the size of the activity, the type of permit applied for, and the reviewing Agency. Please reference Attachment 3 to determine the appropriate fee. **The Project is subject to Florida Electrical Power Plant Siting Act. No individual permit fee is required.**

PART 3: APPLICANT AND ASSOCIATED PARTIES INFORMATION

Instructions: Permits are only issued to entities having sufficient real property interest as described in Section 4.2.3 (d) of Applicant's Handbook Volume I. Please attach evidence of sufficient real property interest over the land upon which the activities subject to the application will be conducted, including mitigation (if applicable). Refer to Section 4.2.3 (d) for acceptable ownership or real property interest documentation. For corporations, list a person who is a registered agent or officer of the corporation who has the legal authority to bind the corporation.

A. APPLICANT (ENTITY MUST HAVE SUFFICIENT REAL PROPERTY INTEREST) ☐ THIS IS A CONTACT PERSON FOR ADDITIONAL INFORMATION			
Name: Last: Glenn		First: R. Alexander	Middle:
Title: State President Florida		Company: Duke Energy Florida, Inc.	
Address: 299 First Avenue North			
City: St. Petersburg		State: Florida	Zip: 33701
Home Telephone:		Work Telephone: (727) 820 – 5657	
Cell Phone:		Fax:	
E-mail Address:			
Correspondence will be sent via email. Check here to receive correspondence via US Mail: ☐			
B. LAND OWNER(S) (IF DIFFERENT OR IN ADDITION TO APPLICANT) ☐ CHECK HERE IF LAND OWNER IS ALSO A CO-APPLICANT			
Name: Last:		First:	Middle:
Title:		Company:	
Address:			
City:		State:	Zip:
Home Telephone:		Work Telephone:	
Cell Phone:		Fax:	
E-mail Address:			
Correspondence will be sent via email. Check here to receive correspondence via US Mail: ☐			
C. OPERATION AND MAINTENANCE ENTITY (see Applicant's Handbook I, Section 12.3)			
Entity Name:		Contact: Last:	First: Middle:
Title:		Company: Duke Energy Florida, Inc.	
Address:			
City:		State:	Zip:
Home Telephone:		Work Telephone:	
Cell Phone:		Fax:	
E-mail Address:			
Correspondence will be sent via email. Check here to receive correspondence via US Mail: ☐			

D. CO-APPLICANT (IF DIFFERENT OR IN ADDITION TO APPLICANT AND OWNER)		
Name: Last:	First:	Middle:
Title:	Company:	
Address:		
City:	State:	Zip:
Home Telephone:		Work Telephone:
Cell Phone:	Fax:	
E-mail Address:		
Correspondence will be sent via email. Check here to receive correspondence via US Mail: ☐		
E. ENGINEERING CONSULTANT ☐ THIS IS A CONTACT PERSON FOR ADDITIONAL INFORMATION		
Name: Last:	First:	Middle:
Title:	Company:	
Address:		
City:	State:	Zip:
Home Telephone:		Work Telephone:
Cell Phone:	Fax:	
E-mail Address:		
Correspondence will be sent via email. Check here to receive correspondence via US Mail: ☐		
F. ENVIRONMENTAL CONSULTANT ☒ THIS IS A CONTACT PERSON FOR ADDITIONAL INFORMATION		
Name: Last: Scohier	First: Maya	Middle: J
Title: Senior Associate Scientist	Company: Environmental Consulting and Technology, Inc.	
Address: 3701 Northwest 98th Street		
City: Gainesville	State: Florida	Zip: 32606
Home Telephone:		Work Telephone: (352) 332 – 0444, Ext. 11368
Cell Phone: (352) 317 – 7749	Fax: (352) 332 – 6722	
E-mail Address: mscohier@ectinc.com		
Correspondence will be sent via email. Check here to receive correspondence via US Mail: ☐		
G. AGENT AUTHORIZED TO SECURE PERMIT (IF DIFFERENT FROM CONSULTANT) ☒ THIS IS A CONTACT PERSON FOR ADDITIONAL INFORMATION		
Name: Last: Dierolf	First: Amy	Middle: C.
Title: Lead Environmental Specialist	Company: Duke Energy Florida, Inc.	
Address: 299 First Avenue North		
City: St. Petersburg	State: Florida	Zip: 33701
Home Telephone:		Work Telephone: (727) 820 – 5657
Cell Phone:	Fax:	
E-mail Address: amy.dierolf@duke-energy.com		
Correspondence will be sent via email. Check here to receive correspondence via US Mail: ☐		

If necessary, please add additional pages for other contacts and property owners related to this project.

PART 4: SIGNATURES AND AUTHORIZATION TO ACCESS PROPERTY

Instructions: For multiple applicants please provide a separate Part 4 for each applicant. For corporations, the application must be signed by a person authorized to bind the corporation. A person who has sufficient real property interest (see Section 4.2.3 (d) of Applicant's Handbook Volume I) is required in (B) to authorize access to the property, except when the applicant has the power of eminent domain.

A. By signing this application form, I am applying for the permit and any proprietary authorizations identified above, according to the supporting data and other incidental information filed with this application. I am familiar with the information contained in this application and represent that such information is true, complete and accurate. I understand this is an application and not a permit, and that work prior to approval is a violation. I understand that this application and any permit issued or proprietary authorization issued pursuant thereto, does not relieve of any obligation for obtaining any other required federal, state, water management district or local permit prior to commencement of construction. I agree to operate and maintain the permitted system unless the permitting agency authorizes transfer of the permit to a different responsible operation and maintenance entity. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

R. Alexander Glenn

Typed/Printed Name of Applicant or
Applicant's Authorized Agent

Signature of Applicant or Applicant's
Authorized Agent

Date

July 30, 2014

State President Florida

(Corporate Title if applicable)

B. CERTIFICATION OF SUFFICIENT REAL PROPERTY INTEREST AND AUTHORIZATION FOR STAFF TO ACCESS THE PROPERTY:

I certify that:

☒ I possess sufficient real property interest in or control, as defined in Section 4.2.3 (d) of Applicant's Handbook Volume I, over the land upon which the activities described in this application are proposed and I have legal authority to grant permission to access those lands. I hereby grant permission, evidenced by my signature below, for staff of the Agency and the U.S. Army Corps of Engineers to access, inspect, and sample the lands and waters of the property as necessary for the review of the proposed works and other activities specified in this application. I authorize these agents or personnel to enter the property as many times as may be necessary to make such review, inspection, and/ or sampling. Further, I agree to provide entry to the project site for such agents or personnel to monitor and inspect permitted work if a permit is granted.

OR

☐ I represent an entity having the power of eminent domain and condemnation authority, and I/we shall make appropriate arrangements to enable staff of the Agency and the U.S. Army Corps of Engineers to access, inspect, and sample the property as described above.

R. Alexander Glenn

Typed/Printed Name

Signature

Date

July 30, 2014

State President Florida

(Corporate Title if applicable)

C. DESIGNATION OF AUTHORIZED AGENT (IF APPLICABLE):

I hereby designate and authorize Amy C. Dierolf to act on my behalf, or on behalf of my corporation, as the agent in the processing of this application for the permit and/or proprietary authorization indicated above; and to furnish, on request, supplemental information in support of the application. In addition, I authorize the above-listed agent to bind me, or my corporation, to perform any requirements which may be necessary to procure the permit or authorization indicated above. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

R. Alexander Glenn



July 30, 2014

Typed/Printed Name of Applicant

Signature of Applicant

Date

State President Florida

(Corporate Title if applicable)

SECTION C: SUPPLEMENTAL INFORMATION FOR WORKS OR OTHER ACTIVITIES IN, ON, OR OVER WETLANDS AND/OR OTHER SURFACE WATERS

(Note: This section is not required if all the proposed activities are covered in Section B.)

Instructions: This section is for ERP applications that do not involve activities associated with an individual single-family residence, duplex, triplex or quadruplex. For those activities, please use Section B. This form is to be completed if the proposed work or activity will occur in, on, over, or within 25 feet of a wetland or other surface water. The supplemental information required by this section is in addition to the information required by Section A of the ERP application.

PART 1: WETLAND OR OTHER SURFACE WATER IMPACT SUMMARY

1. Describe the basic purpose of the project or activity:
Construction and operation of a new 1,640-MW combined cycle power plant and associated transmission lines and water pipelines.
2. Total area of work (dredging, filling, construction, alteration, or removal) in, on, or over wetlands or other surface waters: **986,198 sq. ft.; 22.64 ac.**
3. Total volume of material in wetlands or other surface waters:
 - a. to be dredged: cubic yards,
 - b. to be filled: cubic yards.**Of the 22.64 acres of wetland impacts, approximately 3.84 acres of wetlands will be filled. The remainder will be converted to shrub (0.52 acre) and herbaceous wetlands (7.26 acres) or temporarily impacted (11.02 acres).**
4. Identify the seasonal high water level (SHWL) and wetland normal pool elevations for each wetland or surface water within the project site. For tidal wetlands and/or surface waters provide the elevation of mean high and mean low water. Include an aerial photograph showing the location of each sampling location, dates, datum, and methods used to determine these elevations.
No sampling was conducted, but seasonal high water level is assumed to be at the surface.
5. Name of waterbody(ies) (if applicable & if known) in which work will occur? **Not applicable.**
6. Is the activity proposed in an Outstanding Florida Water or Aquatic Preserve?
☐ yes, name: ☒ no ☐ I don't know
7. Has there ever been a formal or informal wetland determination for the project site? If yes, provide the identifying number and/ or a copy of the jurisdictional map.
In 2011, the U.S. Army Corps of Engineers issued a formal jurisdictional determination on the existing Crystal River Energy Complex transmission line corridor (issued under Permit No. SAJ-2008-00490). In addition, in 2012, the Southwest Florida Water Management District has issued a formal determination of wetlands and other surface waters for a 150-foot easement on a portion of the southern and western CCC Site boundary (No. 32436.001).

Mark Langford with the Florida Department of Environmental Protection (FDEP), Southwest District, and two ECT ecologists met on-Site on May 27, 2014, to review wetland lines and assess the overall conditions and UAM scoring of wetlands.



US Army Corps
of Engineers

8. Provide a map(s) of the project area and vicinity delineating USDA/NRCS soil types.
Please see Figure 3.
9. Provide recent aerials, legible for photointerpretation (no photocopies) with a scale of 1" = 400 ft, or more detailed, with project boundaries and wetland boundaries delineated on the aerial.
Please see Figure 4 (three pages).
10. Provide existing and proposed maps indicating vegetative community types based on Florida Land Use and Cover Classification System (FLUCCS) (FDOT 1999). For vegetated areas dominated by exotic vegetation, use the FLUCCS code representative of the native community type that was present prior to exotic infestation.
Please see Figures 5 and 6.
11. Provide existing and proposed maps indicating vegetative community types based on the Florida Natural Areas Inventory Guide to the Natural Communities of Florida.
Please see Figures 7 and 8.
12. Impact Summary Tables (located at the end of this section):
 - a. For all projects, complete Table 1, 2 and 3 as applicable.
Table 1 in this Section C is applicable. Please refer to attached Table 1.
 - b. For shoreline stabilization projects, provide the information requested in Table 4. **Not applicable.**
13. Adjacent property owners. The following information is required only for projects proposed to occur in, on or over wetlands that need a federal dredge and fill permit and/or authorization to use state owned submerged lands and is not necessary when applying solely for an Environmental Resource Permit. If the activity is located on state owned submerged lands and requires a lease or easement, provide a list of names and addresses from the latest county tax assessment roll of all property owners located within a 500 ft. radius of the proposed lease or easement boundary in mailing label format, or you may elect to send notice to those persons by certified mail, with the return-receipt card addressed to the DEP or water management district, as applicable, in accordance with subsection 18-21.005(3), F.A.C., and Section 253.115, F.S. For projects that need a federal dredge and fill permit, please provide the names, addresses and zip codes of property owners whose property directly adjoins the project (excluding applicant). Attach additional sheets if necessary.

1. HCR Limestone Attn: Holcim Tax Department 201 Jones Road Waltham, Massachusetts 02451	2. US Gypsum Property Department #179 P.O. Box 6721 Chicago, Illinois 60680-6721
3. Trustees of the Internal Improvement Trust Fund c/o Florida Department of Environmental Protection 3900 Commonwealth Boulevard Tallahassee, Florida 32399	4.
5.	6.

PART 2: ENVIRONMENTAL CONSIDERATIONS

Note: for many questions, a state rule/Applicant's Handbook Volume I (AH I) section is cited to assist the applicant in addressing these questions. However, additional Federal criteria may apply.

1. Elimination or Reduction of Impacts (Avoidance and Minimization). Describe measures taken to eliminate or reduce impacts to wetlands and other surface waters (*Refer to AH I Section 10.2.1*).
Please see Attachment A.
2. Fish, Wildlife, Listed Species and their Habitats. Provide results of any wildlife assessments that have been conducted on the project site and provide any comments pertaining to the project from the Florida Fish and Wildlife Conservation Commission and/or the U.S. Fish and Wildlife Service (*Refer to AH I Section 10.2.2*). **Please see Attachment B.**
3. Water quantity impacts to wetlands and other surface waters (*Refer to AH I Section 10.2.2.4 and AH II*).
 - a. Does the activity include a proposed stormwater water management system with a control elevation different than the wetland normal pool elevation(s) of existing or proposed created wetlands or other surface waters?
Please refer to the Stormwater Management Plan in Attachment F.
 - b. If yes to (a), provide documentation (e.g. drawdown assessment or other methods) that shows the proposed surface water management system will not change the hydroperiod of the existing or created wetland or other surface water.
Please refer to the Stormwater Management Plan in Attachment F.
4. Public Interest Test. Please describe how the proposed activity will ***not be contrary*** to the public interest, OR if such an activity significantly degrades or is located within an Outstanding Florida Water (OFW), that the regulated activity will be ***clearly in*** the public interest (*Refer to AH I Section 10.2.3*).
 - a. Please describe how the project will be designed to avoid adverse affects to public health, safety, or the welfare or the property of others.
Please see Attachment C.
 - b. Please describe how the project will be designed to avoid adverse affects to the conservation of fish and wildlife, including endangered or threatened species, or their habitats.
Please see Attachment B.
 - c. Please describe how the project will be designed to avoid adverse affects to navigation or the flow of water or cause harmful erosion or shoaling. **The only work associated with the Project with any potential to impact navigation or to cause erosion or shoaling is the in-water work associated with construction of the new discharge structure. This work, however, will be of temporary duration and will be along the edge of the canal at the extreme eastern end. Further, the discharge canal is closed to all public access. Therefore, the Project will not impact navigation. Best management practices (BMPs) will be implemented during the construction of the new discharge structure to prevent erosion and shoaling.**
 - d. Please describe how the project will be designed to avoid adverse affects to the fishing or recreational values or marine productivity in the vicinity of the activity. **The CCC Project crosses no marine or estuarine environments, so fisheries and recreation will not be directly**

impacted by the Project. The discharge structure will be constructed at the east terminus of the existing discharge canal. There are no fishing or recreational activities within the canal, because the canal is located in the existing CREC beyond the controlled access point. Special construction techniques and BMPs will be used when constructing the discharge structure to minimize any adverse effects on fish. DEF will comply with the best technology available (BTA) standards for both impingement and entrainment for the new CCC Project units through its incorporation of a closed-cycle recirculating cooling system (40 CFR § 125.94(e)(1)).

- e. Will the project be of a temporary or permanent nature?

The CCC Project is intended to be permanent in nature.

- f. Please describe how the project will be designed to avoid adverse impacts to significant historical and archaeological resources, under the provisions of section 267.061, F.S. **DEF has hired a reputable cultural resources firm that has coordinated an extensive search of available records and field surveys of the CCC Site and the associated linear facility corridor. Based on the cultural resources assessment survey conducted for the Site in May 2014, the construction and operation of the CCC Project is not expected to disturb any archaeological or historical features eligible for the National Register of Historic Places. The Project is not anticipated to have adverse impacts on archaeological or historical resources. A copy of the report has been provided to the Florida Department of State, Division of Historical Resources (DHR). If unanticipated historical or archaeological artifacts or features are discovered at any time, DEF will notify DHR and consult with DHR to determine appropriate action**

- g. Please describe how the project will be designed to avoid adverse affects to the current condition and relative value of functions being performed by areas affected by the proposed regulated activity. **The western half of the CCC Site containing higher quality upland and wetland habitat will remain intact. Land uses and preexisting, low-growing vegetation will be allowed to continue on the linear facilities corridor after construction is completed. Wetlands crossed by the electrical transmission lines will continue to perform wetland functions, although wetland type may be altered (see Attachment A).**

5. Water Quality. Provide a description of how water quality will be maintained in wetlands and other surface waters that will be preserved or will remain undisturbed, both on and offsite. Please address both short-term (such as during construction) and long-term water quality considerations (*Refer to AHI Section 10.2.4*).

The proposed Project will provide an onsite stormwater system in accordance with Part IV of Chapter 373, Florida Statutes (F.S.), which regulates the management and storage of surface waters. The stormwater management system will also comply with Chapter 62-330, Florida Administrative Code (F.A.C.), and other FDEP stormwater rules. The proposed CCC Site consists of five primary drainage subbasins, and the Site design includes a separate stormwater treatment pond for each basin. The primary purposes of the treatment ponds are for quantity and quality treatment of stormwater runoff as required by Chapter 62-330, F.A.C.

Erosion, sedimentation, and runoff control measures, both pre- and postconstruction, will meet all applicable FDEP design criteria. The stormwater detention ponds will be constructed early in the Project construction activities to provide stormwater water treatment for onsite runoff during the construction. BMPs and a sediment control plan will also be implemented

during site construction. Please see a copy of the Stormwater Management Plan Attachment F.

6. Class II Waters; Waters approved for shellfish harvesting (*Refer to AH I Section 10.2.5*).

- a. Will the project occur in Class II that are NOT approved for shellfish harvesting? If yes, please provide a plan or procedure detailing the measures to be taken to meet the requirements of *AH I Section 10.2.5(a)*. **No.**
- b. Is the project located adjacent to or in close proximity to Class II waters? If yes, please provide a plan or procedure detailing the measures to be taken to meet the requirements of *AH I Section 10.2.5(b)*.

The existing CREC discharge canal, along with the intake canal, connects to the Gulf of Mexico located approximately 1.4 miles to the west of the CCC Site and immediately west of CREC. With some exceptions at the south of CREC near the mouth of the Crystal River, the waters of Crystal Bay are designated as Class II Coastal Waters under Rule 62-302.400(16)(b)9, F.A.C. This classification includes waters suitable for shellfish propagation or harvesting, in addition to fish consumption, recreation, and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife.

The construction and/or operation of the CCC Project does not propose any direct impacts to Class II waters. None of the facilities for the new Project will be constructed directly within Class II waters. Further, no indirect effects to water quality or quantity are anticipated either from the stormwater management system or the cooling water system. The Project will comply with all National Pollutant Discharge Elimination System (NPDES) permit requirements.

- c. Is the project located in Class II or Class III waters that are classified as “approved”, “restricted”, “conditionally approved”, or “conditionally restricted”? If yes, demonstrate that the project meets the requirements of *AH I Section 10.2.5(c)*. **No.**

7. Vertical seawalls. Are vertical seawalls proposed in an estuary or lagoon as part of the project? If yes, please describe how the project meets the requirements of *AH I Section 10.2.6*. **No.**

8. Secondary Impacts (*AH I Section 10.2.7*).

- a. Will an upland buffer, with a minimum width of 15' and an average width of 25', be provided between the proposed activities and existing wetlands or wetlands to be preserved, enhanced, restored, or created? Provide the location and dimension of all buffers on the plans. If not, demonstrate that secondary impacts will not occur or how they will be offset.

Please see Figure 9. As shown on this figure, a 25-foot buffer will be provided for all nonimpacted wetlands. For partially impacted wetlands, DEF will employ measures to minimize impacts to the portion outside the construction footprint.

- b. If listed species are present or may be present then coordination with wildlife agencies is needed. Have you coordinated with the FFWCC and/or USFWS? If so, please provide correspondence from the wildlife agencies indicating concurrence with the species management plan(s).
On July 16, 2014, the project team met with the Florida Fish & Wildlife Conservation Commission to discuss the proposed project and wildlife resources on the Site. Please refer to Section A 2.B of this application for the meeting location and attendees. In addition, DEF is seeking certification of the Project under the Florida Electrical Power

Plant Siting Act (PPSA), Section 403.501 et seq., Florida Statutes. The Florida Fish and Wildlife Conservation Commission is a statutory reviewing agency under the PPSA.

- c. What measures will be taken to avoid impacts to wetland-dependent wildlife and/or listed species that use uplands for nesting or denning?

Please refer to Attachment B.

- d. Describe whether there are any other relevant activities that are very closely linked and causally related to any proposed dredging or filling in wetlands or other surface waters that have the potential to cause impacts to significant historical and archaeological resources.

DEF has hired a reputable cultural resources firm that has coordinated an extensive search of available records and field surveys of the CCC Site and the associated linear facility corridor. Based on the cultural resources assessment survey conducted for the Site in May 2014, the construction and operation of the CCC Project is not expected to disturb any archaeological or historical features eligible for the National Register of Historic Places. The Project is not anticipated to have adverse impacts on archaeological or historical resources. A copy of the report has been provided to DHR. If unanticipated historical or archaeological artifacts or features are discovered at any time, DEF will notify DHR and consult with DHR to determine appropriate action.

- e. Are there additional future phases or extensions of the proposed activities that are not shown? If yes, please describe. **No.**

9. Cumulative Impacts. Is the proposed mitigation located within the same drainage basin (*Refer to AH I Figures 10.2.8.1 – 10.2.8.5*) as the proposed wetland impacts? **Yes.** If not, please submit a Cumulative Impact Evaluation in accordance with *AH I Section 10.2.8*.

10. Mitigation Plan (*Refer to AH I Section 10.3*).

- a. If a mitigation bank is proposed to offset wetland/other surface water impacts, provide:

- i. the name of the bank: **Upper Coastal Wetland Mitigation Bank and Old Florida Mitigation Bank will be used for the purchase of approximately 3.15 forested and 0.33 herbaceous credits.** A letter of reservation from the banker will be required once the application has been evaluated.
- ii. If the mitigation bank was assessed using UMAM, provide UMAM worksheets for impact area(s). If the bank was assessed using a method other than UMAM, then prepare the impact assessment using the same method. **For functional assessment of wetlands using UMAM, please see Attachment D. Attachment D also includes wetland determination data forms for the Atlantic and Gulf Coastal Plain Region. For calculation of impacts and credits needed, please see attached Table 1.**

- b. If mitigation is proposed to offset wetland/other surface water impacts, please provide a mitigation plan that includes, at a minimum, the following: **Not applicable.**

- i. ☐ Proposed mitigation narrative:

- (1) ☐ Describe the current and proposed condition for each type of mitigation component (restoration, enhancement, creation, preservation), including:

- (a) ☐ Describe current and proposed vegetation

- (b) ☐ Describe current and proposed hydrologic conditions for the proposed mitigation.
 - (c) ☐ Describe the soil types from NRCS maps and confirm if actual soil conditions appear to match.
- (2) ☐ Provide details of the proposed construction/mitigation activities including phasing and timing, as appropriate.
- (3) ☐ Identify measures that will be implemented during and after construction to avoid adverse impacts related to the proposed activities.
- (4) ☐ A mitigation implementation and monitoring schedule with dates.
- (5) ☐ Identify the success criteria.
- (6) ☐ Describe the anticipated site conditions in and around the mitigation area after the mitigation plan is successfully implemented.
- (7) ☐ Provide a comparison of current fish and wildlife habitat to expected habitat after the mitigation plan is successfully implemented.
- ii. ☐ Provide a Management Plan that includes, as appropriate, aspects of operation and maintenance, including water management practices, vegetation establishment, exotic and nuisance species control, fire management, and control of access.
- iii. ☐ Maps:
 - (1) ☐ Soil map (include soil names/codes, hydrologic soil groups and hydric soil types).
 - (2) ☐ Topographic map of the mitigation area and adjacent contributing and receiving areas.
 - (3) ☐ Hydrologic features map of the mitigation area and adjacent contributing and receiving areas.
 - (4) ☐ Vegetative communities map (using FLUCCS or other appropriate classification system).
 - (5) ☐ For all maps, identify source.
- iv. Provide the necessary supporting information for the application of sections 62-345.400 - .600 (Uniform Mitigation Assessment Method (UMAM)). To meet this requirement, submittal of UMAM worksheets is acceptable for impact and mitigation areas.
- v. If onsite and/or offsite applicant-responsible mitigation is proposed, submit a draft Conservation Easement document or other form of restrictive covenant that provides for protection of the mitigation area in perpetuity. Standard forms, as described in subsection 62-330.301(6), F.A.C., are available from the Agency or on its website.
- vi. If onsite and/or offsite applicant-responsible mitigation is proposed, submit a cost estimate for completing the mitigation, including monitoring and maintenance.
- vii. If onsite and/or offsite applicant-responsible mitigation is proposed and the proposed mitigation exceeds \$25,000, please provide a draft financial assurance document.
- viii. Identify the entity responsible for monitoring, maintenance and long-term stewardship of the mitigation area (i.e. the landowner or homeowner association, not the consultant or contractor that will do the work).

PART 3: PLANS

PLANS: The information listed in the checklist below represent the typical information required on the submitted project plans. The Plans checklists in each application section are cumulative unless otherwise noted. Separate plans for each application section are not required.

1. ☒ Include the following on the construction plans and cross sections:
 - a. ☒ An Existing Conditions sheet showing the entire project and wetland/other surface water boundaries. Include the following: Acreage and type (herbaceous, forested or other surface water) of each wetland/other surface water. **Please see Figure 5 and attached Table 1.**
 - b. ☒ A Proposed Conditions sheet showing the entire project and wetland/other surface water boundaries with construction plan overlay. **Please see Figure 9.**
 - c. ☒ A Proposed Wetland Impact sheet that include the following:
 - i. ☒ Acreage and type (herbaceous, forested or other surface water) of each wetland/other surface water to be impacted. **Please see attached Table 1.**
 - ii. ☐ Proposed upland buffers with dimensions. **Please see Figure 9.**
 - iii. ☐ Identify the seasonal high water and wetland normal pool elevations on the plans.
Not applicable, because it is assumed that the seasonal high water is at the surface in this area.
 - iv. ☐ Separately identify WMD/FDEP and USACE wetland/other surface water impacts if different. **Not applicable.**
 - d. ☐ Include wetland boundaries on all construction plan sheets. **Construction plan sheets will be developed as the final design for the Project progresses.**
2. ☐ If onsite and/or offsite applicant-responsible mitigation is proposed, submit mitigation permit plans and cross sections including, at a minimum: **Not applicable.**
 - a. ☐ existing conditions plan sheet identifying upland and wetland communities and acreage of each, topography, drainage patterns, and location of cross-section detail.
 - b. ☐ proposed conditions plan sheet identifying proposed improvements by type (restoration, enhancement, creation, preservation), acreage of each, topography, drainage patterns, and location of cross-section detail.
 - c. ☐ monitoring plan sheet including proposed improvements, monitoring transects, photostations, and mitigation signage (if applicable).
 - d. ☐ cross-section and/or profile detail(s) sheet(s) including representative section of each type of mitigation component. Include existing and proposed conditions and representative elevations.
 - e. ☐ planting schedule, plant species including common and scientific names divided into three sections (canopy, shrub, herbaceous) by mitigation component, quantity, spacing, size, and elevation range.

TABLE 1 - PROJECT WETLAND (WL) AND OTHER SURFACE WATER (SW) AND IMPACT SUMMARY

WL & SW ID	UMAM ASSESSMENT AREA NAME(S)	WL & SW TYPE	WL & SW SIZE (acres)	WL & SW NOT IMPACTED (acres)	TEMPORARY WL & SW IMPACTS		PERMANENT WL & SW IMPACTS		MITIGATION ID
					IMPACT SIZE (acres)	IMPACT TYPE	IMPACT SIZE (acres)	IMPACT TYPE	
See attached Table 1.									
PROJECT TOTALS:									

Comments:

Codes (multiple entries per cell not allowed):

- Wetland & Surface Water ID: Include ID on submitted wetland and surface water impact maps
- Wetland Type: from an established wetland classification system
- Impact Type: D=dredge; F=fill; H=change hydrology; S=shading; C=clearing; O=other

TABLE 2 - PROJECT ON-SITE MITIGATION SUMMARY

MITIGATION ID	UMAM ASSESSMENT AREA NAME(S)	TARGET TYPE	CREATION	RESTORATION	ENHANCEMENT	WETLAND PRESERVE	UPLAND PRESERVE	OTHER
			AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)
Not applicable.								
PROJECT TOTALS								

COMMENTS:

Codes (multiple entries per cell not allowed):

- Target Type or Type=target or existing habitat type from an established wetland classification system or land use classification for non-wetland mitigation

TABLE 3 - PROJECT OFF-SITE MITIGATION SUMMARY

MITIGATION ID	UMAM ASSESSMENT AREA NAME(S)	TARGET TYPE	CREATION	RESTORATION	ENHANCEMENT	WETLAND PRESERVE	UPLAND PRESERVE	OTHER
			AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)
Not applicable.								
PROJECT TOTALS								

COMMENTS:

Codes (multiple entries per cell not allowed):

- Target Type or Type=target or existing habitat type from an established wetland classification system or land use classification for non-wetland mitigation

TABLE 4 - SHORELINE STABILIZATION

Stabilization	Linear Ft. New	Linear Ft. Replaced	Linear Ft. Repaired	Linear Ft. Removed	Slope H: V:	Toe Width (Ft.)
Natural Vegetation (living shoreline)	Not applicable.					
Rip Rap + Vegetation						
Rip Rap						
Seawall + Rip Rap						
Vertical Seawall						
Other Shoreline Stabilization Type						

Size of Rip Rap

Type of Rip Rap

Table 1. Project Wetland and Other Surface Water and Impact Summary

Wetland ID	FLUCFCS	Permanent Impact										Temporary Construction Wetland Impact								Permanent Conversion to Nonforested Wetland Impact								
		Before UMAM Scores*				AFTER UMAM Scores*				Permanent Impact Acreage	Functional Loss	After UMAM Scores				Delta	Time Lag	TC Impact Acreage	Temporary Functional Loss	After UMAM Scores				Delta	PC Impact Acreage	Permanent Functional Loss	Total Functional Loss	Impacted Wetland
		L/L	WE	C S	UMAM	L/L	WE	C S	UMAM			L/L	WE	C S	UMAM					L/L	WE	C S	UMAM					
1	617	6	6	7	0.63	0	0	0	0.00	0.04	0.025	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.025	X
2	617	7	5	6	0.60	0	0	0	0.00	0.02	0.012	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.012	X
3	617	7	5	6	0.60	0	0	0	0.00	0.07	0.042	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.042	X
4	617	7	5	6	0.60	0	0	0	0.00	0.68	0.408	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.408	X
5	631	7	6	6	0.63	0	0	0	0.00	0.05	0.032	7	6	6	0.63	0.00	1.25	0.00	0.000	7	6	6	0.63	0.00	0.00	0.000	0.032	X
6	631	6	6	7	0.63	0	0	0	0.00	0.00	0.000	6	6	6	0.60	0.03	1.25	0.07	0.003	6	6	7	0.63	0.00	0.06	0.000	0.003	X
7	617	7	5	6	0.60	0	0	0	0.00	0.15	0.090	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.090	X
8	617	7	5	6	0.60	0	0	0	0.00	0.12	0.072	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.072	X
9	617	7	5	6	0.60	0	0	0	0.00	0.06	0.036	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.036	X
10	631	7	6	6	0.63	0	0	0	0.00	0.02	0.013	7	6	6	0.63	0.00	1.25	0.00	0.000	7	6	6	0.63	0.00	0.00	0.000	0.013	X
11	617	7	5	6	0.60	0	0	0	0.00	0.26	0.156	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.156	X
12	617	7	5	6	0.60	0	0	0	0.00	0.27	0.162	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.162	X
13	617	7	6	7	0.67	0	0	0	0.00	0.2	0.133	7	6	7	0.67	0.00	1.25	0.00	0.000	7	6	7	0.67	0.00	0.00	0.000	0.133	X
14	617	7	6	6	0.63	0	0	0	0.00	0.03	0.019	7	6	6	0.63	0.00	1.25	0.00	0.000	7	6	6	0.63	0.00	0.00	0.000	0.019	X
15	617	7	7	6	0.67	0	0	0	0.00	0.34	0.227	7	7	6	0.67	0.00	1.25	0.00	0.000	7	7	6	0.67	0.00	0.00	0.000	0.227	X
16	617	7	5	6	0.60	0	0	0	0.00	0.23	0.138	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	3	0.50	0.10	0.55	0.055	0.193	X
17	630	6	7	7	0.67	6	7	7	0.67	0.00	0.000	6	7	7	0.67	0.00	1.25	0.00	0.000	6	7	5	0.60	0.07	2.05	0.137	0.137	X
18	631	7	6	6	0.63	0	0	0	0.00	0.05	0.032	7	6	6	0.63	0.00	1.25	0.00	0.000	7	6	6	0.63	0.00	0.00	0.000	0.032	X
19	617	7	5	6	0.60	0	0	0	0.00	0.03	0.018	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.018	X
20	617	7	7	7	0.70	7	7	7	0.70	0.00	0.000	7	7	7	0.70	0.00	1.25	0.00	0.000	7	7	7	0.70	0.00	0.00	0.000	0.000	
21	617	6	7	7	0.67	6	7	7	0.67	0.00	0.000	6	7	7	0.67	0.00	1.25	0.00	0.000	6	7	7	0.67	0.00	0.00	0.000	0.000	
22	617	7	7	6	0.67	7	7	6	0.67	0.00	0.000	7	7	6	0.67	0.00	1.25	0.00	0.000	7	7	6	0.67	0.00	0.00	0.000	0.000	
23	630	6	8	8	0.73	6	8	8	0.73	0.00	0.000	6	8	8	0.73	0.00	1.25	0.00	0.000	6	8	8	0.73	0.00	0.00	0.000	0.000	
24	617	7	7	6	0.67	7	7	6	0.67	0.00	0.000	7	7	6	0.67	0.00	1.25	0.00	0.000	7	7	6	0.67	0.00	0.00	0.000	0.000	
25	617	7	7	6	0.67	7	7	6	0.67	0.00	0.000	7	7	6	0.67	0.00	1.25	0.00	0.000	7	7	6	0.67	0.00	0.00	0.000	0.000	
26	617	7	7	6	0.67	7	7	6	0.67	0.00	0.000	7	7	6	0.67	0.00	1.25	0.00	0.000	7	7	6	0.67	0.00	0.00	0.000	0.000	
27	617	7	7	6	0.67	7	7	6	0.67	0.00	0.000	7	7	6	0.67	0.00	1.25	0.00	0.000	7	7	3	0.57	0.10	0.91	0.091	0.091	X
28	617	7	7	7	0.70	7	7	7	0.70	0.00	0.000	7	7	7	0.70	0.00	1.25	0.00	0.000	7	7	7	0.70	0.00	0.00	0.000	0.000	
29	617	7	7	7	0.70	7	7	7	0.70	0.00	0.000	7	7	7	0.70	0.00	1.25	0.00	0.000	7	7	7	0.70	0.00	0.00	0.000	0.000	
30	617	6	6	7	0.63	6	6	7	0.63	0.00	0.000	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.000	
31	617	6	6	7	0.63	6	6	7	0.63	0.00	0.000	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.000	
32	617	6	6	7	0.63	6	6	7	0.63	0.00	0.000	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.000	
33	617	7	5	6	0.60	7	5	6	0.60	0.00	0.000	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.000	
34	617	7	7	7	0.70	7	7	7	0.70	0.00	0.000	7	7	7	0.70	0.00	1.25	0.00	0.000	7	7	7	0.70	0.00	0.00	0.000	0.000	
35	617	7	7	7	0.70	7	7	7	0.70	0.00	0.000	7	7	7	0.70	0.00	1.25	0.00	0.000	7	7	7	0.70	0.00	0.00	0.000	0.000	
36	617	7	5	6	0.60	7	5	6	0.60	0.00	0.000	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.000	
37	617	7	7	7	0.70	7	7	7	0.70	0.00	0.000	7	7	7	0.70	0.00	1.25	0.00	0.000	7	7	7	0.70	0.00	0.00	0.000	0.000	
38	630	6	8	8	0.73	6	8	8	0.73	0.00	0.000	6	8	8	0.73	0.00	1.25	0.00	0.000	6	8	8	0.73	0.00	0.00	0.000	0.000	
39	630	6	8	8	0.73	6	8	8	0.73	0.00	0.000	6	8	8	0.73	0.00	1.25	0.00	0.000	6	8	8	0.73	0.00	0.00	0.000	0.000	
40	617	7	7	7	0.70	7	7	7	0.70	0.00	0.000	7	7	7	0.70	0.00	1.25	0.00	0.000	7	7	7	0.70	0.00	0.00	0.000	0.000	
41	617	7	7	7	0.70	7	7	7	0.70	0.00	0.000	7	7	7	0.70	0.00	1.25	0.00	0.000	7	7	7	0.70	0.00	0.00	0.000	0.000	
42	617	7	7	7	0.70	7	7	7	0.70	0.00	0.000	7	7	7	0.70	0.00	1.25	0.00	0.000	7	7	7	0.70	0.00	0.00	0.000	0.000	
43	617	6	6	7	0.63	6	6	7	0.63	0.00	0.000	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.000	
44	617	7	7	7	0.70	7	7	7	0.70	0.00	0.000	7	7	7	0.70	0.00	1.25	0.00	0.000	7	7	7	0.70	0.00	0.00	0.000	0.000	
45	617	6	6	7	0.63	6	6	7	0.63	0.00	0.000	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.000	
46	631	6	6	7	0.63	6	6	7	0.63	0.00	0.000	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.000	
47	631	6	6	7	0.63	6	6	7	0.63	0.00	0.000	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.000	
48	617	6	6	7	0.63	6	6	7	0.63	0.00	0.000	6	6	7	0.													

Table 1. Project Wetland and Other Surface Water and Impact Summary

Wetland ID	FLUCFS	Permanent Impact										Temporary Construction Wetland Impact								Permanent Conversion to Nonforested Wetland Impact								Total Functional Loss	Impacted Wetland
		Before UMAM Scores*				AFTER UMAM Scores*				Permanent Impact Acreage	Functional Loss	After UMAM Scores				Delta	Time Lag	TC Impact Acreage	Temporary Functional Loss	After UMAM Scores				Delta	PC Impact Acreage	Permanent Functional Loss			
		L/L	WE	C S	UMAM	L/L	WE	C S	UMAM			L/L	WE	C S	UMAM					L/L	WE	C S	UMAM						
49	617	6	6	7	0.63	6	6	7	0.63	0.00	0.000	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.000		
50	630	6	8	8	0.73	6	8	8	0.73	0.00	0.000	6	8	8	0.73	0.00	1.25	0.00	0.000	6	8	8	0.73	0.00	0.00	0.000	0.000		
51	617	7	6	6	0.63	7	6	6	0.63	0.00	0.000	7	6	6	0.63	0.00	1.25	0.00	0.000	7	6	6	0.63	0.00	0.00	0.000	0.000		
52	617	6	6	7	0.63	6	6	7	0.63	0.00	0.000	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.000		
53	617	6	6	7	0.63	6	6	7	0.63	0.00	0.000	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.000		
54	617	7	5	6	0.60	7	5	6	0.60	0.00	0.000	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.000		
55	617	7	6	7	0.67	0	0	0	0.00	0.07	0.047	7	6	7	0.67	0.00	1.25	0.00	0.000	7	6	7	0.67	0.00	0.00	0.000	0.047	X	
56	631	7	6	7	0.67	0	0	0	0.00	0.04	0.027	7	6	7	0.67	0.00	1.25	0.00	0.000	7	6	7	0.67	0.00	0.00	0.000	0.027	X	
57	617	7	5	6	0.60	0	0	0	0.00	0.2	0.120	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.120	X	
58	617	7	5	6	0.60	0	0	0	0.00	0.13	0.078	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.078	X	
59	631	7	6	6	0.63	0	0	0	0.00	0.00	0.000	7	6	6	0.63	0.00	1.25	0.00	0.000	7	6	6	0.63	0.00	0.00	0.000	0.000		
60	617	7	5	5	0.57	0	0	0	0.00	0.02	0.011	7	5	5	0.57	0.00	1.25	0.00	0.000	7	5	5	0.57	0.00	0.00	0.000	0.011	X	
61	631	7	5	6	0.60	0	0	0	0.00	0.14	0.084	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.084	X	
62	631	6	6	7	0.63	0	0	0	0.00	0.00	0.000	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.000		
63	617	7	6	4	0.57	0	0	0	0.00	0.03	0.017	7	6	4	0.57	0.00	1.25	0.00	0.000	7	6	4	0.57	0.00	0.00	0.000	0.017	X	
64	631	7	6	6	0.63	0	0	0	0.00	0.00	0.000	7	6	6	0.63	0.00	1.25	0.00	0.000	7	6	6	0.63	0.00	0.00	0.000	0.000		
65	631	6	6	7	0.63	0	0	0	0.00	0.04	0.025	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.025	X	
66	631	7	5	6	0.60	7	5	6	0.60	0.00	0.000	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.000		
67	631	7	5	6	0.60	7	5	6	0.60	0.00	0.000	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.000		
68	631	7	7	7	0.70	7	7	7	0.70	0.00	0.000	7	7	7	0.70	0.00	1.25	0.00	0.000	7	7	7	0.70	0.00	0.00	0.000	0.000		
69	617	7	7	6	0.67	7	7	6	0.67	0.00	0.000	7	7	6	0.67	0.00	1.25	0.00	0.000	7	7	6	0.67	0.00	0.00	0.000	0.000		
70	631	7	6	6	0.63	7	6	6	0.63	0.00	0.000	7	6	6	0.63	0.00	1.25	0.00	0.000	7	6	6	0.63	0.00	0.00	0.000	0.000		
71	631	6	6	7	0.63	6	6	7	0.63	0.00	0.000	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.000		
72	631	6	6	7	0.63	0	0	0	0.00	0.17	0.108	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.108	X	
73	631	7	6	6	0.63	0	0	0	0.00	0.08	0.051	7	6	6	0.63	0.00	1.25	0.00	0.000	7	6	6	0.63	0.00	0.00	0.000	0.051	X	
74	617	7	5	6	0.60	0	0	0	0.00	0.1	0.060	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.060	X	
75	617	7	5	6	0.60	0	0	0	0.00	0.08	0.048	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.048	X	
76	617	7	5	6	0.60	0	0	0	0.00	0.04	0.024	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.024	X	
77	617	7	5	6	0.60	7	5	6	0.60	0.00	0.000	7	5	6	0.60	0.00	1.25	0.00	0.000	7	5	6	0.60	0.00	0.00	0.000	0.000		
78	631	7	6	6	0.63	7	6	6	0.63	0.00	0.000	7	6	6	0.63	0.00	1.25	0.00	0.000	7	6	6	0.63	0.00	0.00	0.000	0.000		
79	617	6	6	7	0.63	6	6	7	0.63	0.00	0.000	6	6	7	0.63	0.00	1.25	0.00	0.000	6	6	7	0.63	0.00	0.00	0.000	0.000		
80	511	4	4	4	0.40	0	0	0	0.00	0.02	0.008	4	4	3	0.37	0.03	1.25	0.11	0.005	4	4	4	0.40	0.00	0.00	0.000	0.013	X	
81	511	4	4	4	0.40	4	4	4	0.40	0.00	0.000	4	4	4	0.40	0.00	1.25	0.00	0.000	4	4	4	0.40	0.00	0.00	0.000	0.000		
82	631	4	4	4	0.40	0	0	0	0.00	0.00	0.000	4	4	3	0.37	0.03	1.25	0.18	0.008	4	4	4	0.40	0.00	0.07	0.000	0.008	X	
83	534	4	4	4	0.40	4	4	4	0.40	0.00	0.000	4	4	4	0.40	0.00	1.25	0.00	0.000	4	4	4	0.40	0.00	0.00	0.000	0.000		
84	617	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	7	0.73	0.07	0.02	0.001	0.001	X	
85	631	6	6	6	0.60	0	0	0	0.00	0.00	0.000	6	6	5	0.57	0.03	1.25	3.5	0.146	6	6	3	0.50	0.10	0.99	0.099	0.245	X	
86	641	7	8	9	0.80	0	0	0	0.00	0.01	0.008	7	8	8	0.77	0.03	1.25	6.94	0.289	7	8	9	0.80	0.00	0.00	0.000	0.297	X	
87	631	6	6	6	0.60	6	6	6	0.60	0.00	0.000	6	6	6	0.60	0.00	1.25	0.00	0.000	6	6	6	0.60	0.00	0.00	0.000	0.000		
88	631	6	6	6	0.60	6	6	6	0.60	0.00	0.000	6	6	6	0.60	0.00	1.25	0.00	0.000	6	6	6	0.60	0.00	0.00	0.000	0.000		
89	631	6	5	6	0.57	6	5	6	0.57	0.00	0.000	6	5	6	0.57	0.00	1.25	0.00	0.000	6	5	6	0.57	0.00	0.00	0.000	0.000		
90	630	7	8	9	0.80	0	0	0	0.00	0.00	0.000	7	8	9	0.80	0.80	1.25	0.00	0.000	7	8	7	0.73	0.07	0.49	0.033	0.033	X	
										0.00	0.000							0.00	0.000	7	8	6	0.70	0.10	2.63	0.263	0.263	X	
91	631	6	6	6	0.60	6	6	6	0.60	0.00	0.000	6	6	5	0.57	0.03	1.25	0.02	0.001	6	6	6	0.60	0.00	0.00	0.000	0.001	X	
92	641	6	6	6	0.60	6	6	6	0.60	0.00	0.000	6	6	6	0.60	0.00	1.25	0.00	0.000	6	6	6	0.60	0.00	0.00	0.000	0.000		
93	630	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	8	0.77	0.03	1.25	0.00	0.000	7	8	7	0.73	0.07	0.01	0.001	0.001	X	
94	641	6	6	6	0.60	0	0	0	0.00	0.00	0.000	6	6	5	0.57	0.03	1.25	0.13	0.005	6	6	6	0.60	0.00	0.00	0.000	0.005	X	
95	617	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000		

Table 1. Project Wetland and Other Surface Water and Impact Summary

Wetland ID	FLUCFS	Permanent Impact										Temporary Construction Wetland Impact								Permanent Conversion to Nonforested Wetland Impact							Impacted Wetland	
		Before UMAM Scores*				AFTER UMAM Scores*				Permanent Impact Acreage	Functional Loss	After UMAM Scores				Delta	Time Lag	TC Impact Acreage	Temporary Functional Loss	After UMAM Scores				Delta	PC Impact Acreage	Permanent Functional Loss		Total Functional Loss
		L/L	WE	C S	UMAM	L/L	WE	C S	UMAM			L/L	WE	C S	UMAM					L/L	WE	C S	UMAM					
96	511	6	5	5	0.53	6	5	5	0.53	0.00	0.000	6	5	5	0.53	0.00	1.25	0.00	0.000	6	5	5	0.53	0.00	0.00	0.000	0.000	
97	511	6	5	5	0.53	0	0	0	0.00	0.00	0.000	6	5	4	0.50	0.03	1.25	0.04	0.002	6	5	5	0.53	0.00	0.00	0.000	0.002	X
98	641	4	4	4	0.40	4	4	4	0.40	0.00	0.000	4	4	4	0.40	0.00	1.25	0.00	0.000	4	4	4	0.40	0.00	0.00	0.000	0.000	
99	511	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000	
100	617	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000	
101	641	4	4	4	0.40	4	4	4	0.40	0.00	0.000	4	4	4	0.40	0.00	1.25	0.00	0.000	4	4	4	0.40	0.00	0.00	0.000	0.000	
102	534	5	5	5	0.50	5	5	5	0.50	0.00	0.000	5	5	5	0.50	0.00	1.25	0.00	0.000	5	5	5	0.50	0.00	0.00	0.000	0.000	
103	641	6	6	6	0.60	6	6	6	0.60	0.00	0.000	6	6	6	0.60	0.00	1.25	0.00	0.000	6	6	6	0.60	0.00	0.00	0.000	0.000	
104	641	6	6	6	0.60	6	6	6	0.60	0.00	0.000	6	6	6	0.60	0.00	1.25	0.00	0.000	6	6	6	0.60	0.00	0.00	0.000	0.000	
105	630	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000	
106	617	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000	
107	511	6	5	5	0.53	6	5	5	0.53	0.00	0.000	6	5	5	0.53	0.00	1.25	0.00	0.000	6	5	5	0.53	0.00	0.00	0.000	0.000	
108	630	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000	
109	630	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000	
110	511	6	5	5	0.53	6	5	5	0.53	0.00	0.000	6	5	5	0.53	0.00	1.25	0.00	0.000	6	5	5	0.53	0.00	0.00	0.000	0.000	
111	511	6	5	5	0.53	6	5	5	0.53	0.00	0.000	6	5	5	0.53	0.00	1.25	0.00	0.000	6	5	5	0.53	0.00	0.00	0.000	0.000	
112	630	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000	
113	511	6	5	6	0.57	6	5	6	0.57	0.00	0.000	6	5	6	0.57	0.00	1.25	0.00	0.000	6	5	6	0.57	0.00	0.00	0.000	0.000	
114	617	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000	
115	631	7	6	7	0.67	7	6	7	0.67	0.00	0.000	7	6	7	0.67	0.00	1.25	0.00	0.000	7	6	7	0.67	0.00	0.00	0.000	0.000	
116	641	7	6	7	0.67	7	6	7	0.67	0.00	0.000	7	6	7	0.67	0.00	1.25	0.00	0.000	7	6	7	0.67	0.00	0.00	0.000	0.000	
117	641	6	6	6	0.60	6	6	6	0.60	0.00	0.000	6	6	6	0.60	0.00	1.25	0.00	0.000	6	6	6	0.60	0.00	0.00	0.000	0.000	
118	630	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000	
119	511	6	5	5	0.53	0	0	0	0.00	0.00	0.000	6	5	4	0.50	0.03	1.25	0.06	0.003	6	5	5	0.53	0.00	0.00	0.000	0.003	X
120	641	7	6	7	0.67	7	6	7	0.67	0.00	0.000	7	6	7	0.67	0.00	1.25	0.00	0.000	7	6	7	0.67	0.00	0.00	0.000	0.000	
121	617	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000	
122	617	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000	
123	617	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000	
124	643	6	6	6	0.60	6	6	6	0.60	0.00	0.000	6	6	6	0.60	0.00	1.25	0.00	0.000	6	6	6	0.60	0.00	0.00	0.000	0.000	
125	630	7	8	9	0.80	7	8	9	0.80	0.00	0.000	7	8	9	0.80	0.00	1.25	0.00	0.000	7	8	9	0.80	0.00	0.00	0.000	0.000	
126	511	6	5	5	0.53	6	5	5	0.53	0.00	0.000	6	5	5	0.53	0.00	1.25	0.00	0.000	6	5	5	0.53	0.00	0.00	0.000	0.000	
127	511	6	5	5	0.53	6	5	5	0.53	0.00	0.000	6	5	5	0.53	0.00	1.25	0.00	0.000	6	5	5	0.53	0.00	0.00	0.000	0.000	
128	641	6	6	6	0.60	6	6	6	0.60	0.00	0.000	6	6	6	0.60	0.00	1.25	0.00	0.000	6	6	6	0.60	0.00	0.00	0.000	0.000	
129	641	6	6	6	0.60	6	6	6	0.60	0.00	0.000	6	6	6	0.60	0.00	1.25	0.00	0.000	6	6	6	0.60	0.00	0.00	0.000	0.000	
130	631	4	4	4	0.40	4	4	4	0.40	0.00	0.000	4	4	4	0.40	0.00	1.25	0.00	0.000	4	4	4	0.40	0.00	0.00	0.000	0.000	
131	641	6	5	6	0.57	0	0	0	0.00	0.01	0.006	6	5	6	0.57	0.00	1.25	0.00	0.000	6	5	6	0.57	0.00	0.00	0.000	0.006	X
Total Forested Credits Needed																											3.15	
Total Herbaceous Credits Needed																											0.325	
Total Credits																											3.475	

Permanent conversion to non-forested wetlands (shrub), the rest of the wetlands are converted to herbaceous.

Source: ECT, 2014.

SECTION E: SUPPLEMENTAL INFORMATION REQUIRED FOR WORKS OR OTHER ACTIVITIES INVOLVING A STORMWATER MANAGEMENT SYSTEM (OTHER THAN A SINGLE-FAMILY PROJECT)

Instructions: The information listed in the checklists below represents the level of information that is usually required to evaluate an application. Information can be provided within reports, plans and documents. The level of information required for a specific project will vary depending on the nature and location of the site and the activity proposed. Conceptual approvals generally do not require the same level of detail as a construction permit. However, providing a greater level of detail will reduce the need to submit additional information at a later date. If an item does not apply to your project, proceed to the next item. The supplemental information required by this section is in addition to the information required by Section A of the ERP application.

PART 1: STORMWATER MANAGEMENT SYSTEM SUMMARY

Provide drainage calculations, signed and sealed by an appropriate registered professional, and supporting documentation demonstrating that the proposed project meets the conditions for issuance under 62-330.301(1)(a),(b),(c),(e), F.A.C. The drainage calculations should include, but not necessarily be limited to, the following:

1. General Site Information:

- a. ☒ Provide pre-development and post-development drainage map(s), as appropriate, that include drainage patterns and basin boundaries with acreage served by each hydraulically separate system, showing the direction of flows, including any off-site runoff being routed through or around the system; topographic information; and connections between wetlands and other surface waters. **Please see Appendix A and C of Attachment F.**
- b. ☒ Provide the results of any percolation tests, where appropriate, and soil borings that are representative of the actual site conditions. Identify the wet season high water table elevations, soil profiles, and hydraulic conductivity. Include dates, datum, and methods used to determine these soil parameters. **A geotechnical report titled, "Site Characterization and Preliminary Geotechnical Design Recommendations," dated December 2013 (AMEC, 2013), is included in the Appendix 10.7.2 to the Site Certification Application.**
- c. ☒ Identify the onsite hydrologic soil classification (e.g. Type A, B/D, D). Reference the source, such as the USDA/NRCS Soil Survey, used in estimating the onsite hydrologic soil classification. Provide maps, as appropriate, with the project limits delineated. **Please see Figure 10.**
- d. ☒ Identify the seasonal high water or mean high tide elevation for receiving waters/wetlands into which runoff will be discharged. Include dates, datum, and methods used to determine these elevations. **It is assumed that the seasonal high water level is at the surface in this area.**
- e. ☒ Identify the name of each receiving waterbody to which the proposed stormwater management system will discharge: **The stormwater management system will not discharge to receiving water bodies.**
- f. ☒ Indicate the existing land use and land cover. **Please see Figure 5.**



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- g. ☒ Provide the acreage, and percentages of the total project, of the following: **The Project will impact a total of approximately 192.59 acres of the 400-acre Site. Of those impacts, approximately 7.44 acres will be wetland impacts. An additional approximately 15.2 acres of wetlands will be impacted by construction of the associated linear facilities. Please see Attachment F for more information regarding the size and locations of Project facilities.**
1. Impervious surfaces, excluding buildings, wetlands and other surface waters;
 2. Buildings;
 3. Pervious surfaces (green areas not including wetlands);
 4. Lakes, canals, retention areas, other open water areas; and
 5. Wetlands (Please refer to Section C to ensure consistency in wetland acreages).
- h. ☒ Provide the location and description of any nearby existing offsite features (such as wetland and other surface waters, stormwater management ponds, and building or other structures) which might be affected by or affect the proposed construction or development.
The Project will be wholly located on DEF-owned property and is not anticipated to impact any off-property features.

2. Water Quality Analysis:

- a. ☒ Provide a description of the proposed stormwater treatment methodology that addresses the type of treatment, pollution abatement volumes, and recovery analysis.
Please see Attachment F.
- b. ☒ Is the receiving waterbody known to be impaired, and/or has an established Total Maximum Daily Load (TMDL) or Basin Management Action Plan (BMAP)? If so, please provide specific descriptions of all water quality parameters for which the waterbody is known to be impaired? For more information about water quality, impaired waters, and to determine whether a TMDL has been adopted in your project area, refer to: <http://waterwebprod.dep.state.fl.us/basin411/downloads/Florida-Adopted-TMDLs.pdf>. To determine whether a BMAP exists, or is being developed in your project area, refer to: <http://www.dep.state.fl.us/water/watersheds/bmap.htm#rad>.
☐ yes ☒ no (**No receiving water bodies**) ☐ don't know
If yes, provide calculations demonstrating that the proposed project will not contribute to violations of state water quality standards in accordance with the applicable Applicant's Handbook, Vol. II.
- c. ☒ Does the project have a direct discharge to a Class I, Class II, Outstanding Florida Waters or Class III waters, which are approved, conditionally approved, restricted, or conditionally restricted for shellfish harvesting? *To determine whether your project is within, or will discharge to an OFW, or for more information about OFWs in general, refer to: <http://www.dep.state.fl.us/water/wqssp/ofw.htm>.*
☐ yes ☒ no ☐ don't know
If yes, additional treatment in accordance with the applicable Applicant's Handbook, Vol. II, may be required.
- d. ☒ Provide construction plans and calculations that address the required treatment volume and recovery, as well as stage-storage and design elevations, which demonstrate compliance with the appropriate water quality treatment criteria in the applicable Applicant's Handbook, Vol. II.
Please see Attachment F.

Provide a description of the engineering methodology, assumptions and references for the parameters listed above, and a copy of all such computations, engineering plans, and specifications used to analyze the system. If a computer program is used for the analysis, provide the name of the program, a description of the program, input and output data, and justification for model selection.

3. Water Quantity Analysis:

Provide calculations and documentations demonstrating that the project, as proposed, meets the applicable design criteria as indicated in the applicable Applicant's Handbook, Vol. II. Typically, the information would include, at a minimum, but is not necessarily be limited to, the following:

- a. ☒ For projects requiring pre-development analysis, provide an analysis of the pre-development peak rate of discharge and / or volume of runoff, for all design storm events. Account for all onsite depressional storage and offsite contributing area. Please refer to the applicable Applicant's Handbook, Vol. II for the design storm event(s) that apply to your project.
Please see Section 3.0 and Appendix A of Attachment F.
- b. ☒ Provide an analysis of the post-development peak rate of discharge and / or volume of runoff for all applicable design storm events. Account for all onsite storage and offsite contributing area. Please refer to the applicable Applicant's Handbook, Vol. II for the design storm event(s) and criteria that apply to your project.
Please see Attachment F.

These analyses should include:

- ☐ Runoff characteristics, including area, runoff curve number or runoff coefficient, and time of concentration for each drainage basins in the pre-development and post-development condition;
- ☐ Design storms used including rainfall depth, duration, frequency, and distribution;
- ☐ Runoff hydrograph(s) for each drainage basin, for all required design storm event(s);
- ☐ Stage-storage computations for any area such as a reservoir, closed basin, detention area, or channel, used in storage routing;
- ☐ Stage-discharge computations for any storage areas at a selected control point, such as control structure or natural restriction;
- ☐ Flood routings through on-site conveyance and storage areas;
- ☐ Water surface profiles in the primary drainage system for each required design storm event(s);
- ☐ Runoff peak rates and volumes discharged from the site for each required design storm event(s);
- ☐ Design tailwater elevation(s) for each storm event at all points of discharge (include source or method of estimate); and
- ☐ Pump specifications and operating curves for range of possible operating conditions (if used in system).

Provide a description of the engineering methodology, assumptions and references for the parameters listed above, and a copy of all such computations, engineering plans, and specifications used to analyze the system. If a computer program is used for the analysis, provide the name of the program, input and output data, justification for model selection, and, if necessary, a description of the program.

4. Floodplain Analysis (where applicable).

- a. ☒ If the project is in a known floodplain of a stream or other water course, identify the appropriate floodplain boundary and approximate flooding elevations of any lake, stream or other watercourse located on or adjacent to the site. **Please see Figure 11.**
- b. ☐ For traversing works, in accordance with the applicable Applicant's Handbook, Vol. II, provide: **Not applicable.**
- ☐ Hydraulic calculations for all proposed traversing works; and
- ☐ Water surface profiles showing upstream impact of traversing works.
- c. ☒ For impacts to regulated floodplains, in accordance with the applicable Applicant's Handbook, Vol. II, provide: **Due to the Project being located in the Coastal Flood Zone, no compensating storage is required.**
- ☐ Location and volume of encroachment within regulated floodplain(s); and
- ☐ Plans and calculations for compensating floodplain storage, if necessary, and calculations required for determining minimum building and road flood elevations.

PART 2: CONSTRUCTION PLANS

1. Provide clear, construction level detailed plans for the system. The plans must be signed and sealed by an appropriate registered professional as required by law. These plans should include cumulative information from all applicable sections; as well as the following:
Conceptual plans are included in Attachment F. Construction plans will be developed as final design for the Project progresses.
- a. ☐ Project area boundary and total area, including distances and orientation from roads or other landmark.
- b. ☐ Existing topography extending at least 100 feet off the project area. All topography shall include location and description of benchmarks, reference to NGVD 1929 or NAVD 1988 along with the conversion factor.
- c. ☐ Proposed site plan with acreage, including the following:
- ☐ plan view of proposed development, including impervious surfaces and water management areas;
 - ☐ land cover and natural communities*;
 - ☐ wetlands and other surface waters*;
 - ☐ undisturbed uplands*;
 - ☐ aquatic communities*;
 - ☐ proposed buffers*;
 - ☐ proposed impacts to wetlands and other surface waters, and any proposed connections/outfalls to other surface waters or wetlands, (if applicable); and
 - ☐ onsite wetland mitigation areas*.
- *Please refer to Section C.
- ☐ For phased projects, provide a master development plan clearing delineating the limits of each phase of construction.
- d. ☐ Paving, Grading, and Drainage Information, which includes, but not necessarily limited to, the following: **Paving and grading plan will be provided in the future.**
- ☐ Existing topography;
 - ☐ Boundaries of wetlands and other surface waters and upland buffers (see Section C);
 - ☐ Plan view of proposed development;

- ☐ Proposed elevations and/or profiles, including:
 - ☐ roadway, parking, and pavement grades;
 - ☐ floor slabs, walkways, and other paved surfaces;
 - ☐ earthwork grades for pervious landscaped areas; and
 - ☐ perimeter site grading, tying back into existing grades.
 - ☐ Location of all water management areas, including elevations, dimensions, side slopes, and design water depths;
 - ☐ Location, size, and invert elevations of existing and proposed stormwater conveyance systems;
 - ☐ Vegetative cover plan for all on-site and off-site earth surfaces disturbed by construction; and
 - ☐ Rights-of-way and easements for the system, including all on-site and off-site areas to be reserved for water management purposes (including access), and rights-of-way and easements for the existing drainage system, if any.
- e. ☐ Stormwater detail information, including but not necessarily limited to, the following:
- ☐ Cross section of all stormwater management areas, including elevations, dimensions, side slopes, and proposed stabilization measures (with location of the cross section(s) shown on the corresponding plan view);
 - ☐ Detail of all proposed control structures, including elevations, dimensions, and skimmer, where applicable; and
 - ☐ Details of proposed stormwater management systems, such as underdrains, exfiltration trenches, vaults, and other proposed Best Management Practices (BMPs).
- f. ☐ Location and description of any nearby existing offsite features (such as wetland and other surface waters, stormwater management ponds, and building or other structures) which might be affected by or affect the proposed construction or development.

PART 3: CONSTRUCTION SCHEDULE AND TECHNIQUES

Provide a construction schedule, and a description of construction techniques, sequencing and equipment. This information should include, as applicable, the following.

Project construction is anticipated to occur over a 24-month period beginning in early 2016. Information regarding construction techniques is included in Chapters 5.0 and 9.0 of the Site Certification Application. A more detailed construction schedule and plans will be developed as final design for the Project progresses.

- a. ☐ Access and staging of equipment;
- b. ☐ Location and details of the erosion, sediment and turbidity control measures to be implemented during each phase of construction and all permanent control measures to be implemented in post-development conditions.
- c. ☐ The location of disposal site(s) for any excavated material, including temporary and permanent disposal sites.
- d. ☐ A demolition plan for any existing structures to be removed.
- e. ☐ Dewatering plan details. If dewatering is required, detail the dewatering proposal including the methods that are proposed to contain the discharge, methods of isolating dewatering areas, and indicate the period dewatering structures will be in place;
Note: A consumptive use or water use permit may be required for dewatering.
- f. ☐ Methods for transporting equipment and materials to and from the work site. If barges are required for access, provide the low water depths and draft of the fully loaded barge;

PART 4: OPERATION AND MAINTENANCE AND LEGAL DOCUMENTATION:

- a. ☐ Describe the overall maintenance and operation schedule for the proposed system.
A maintenance and operation schedule will be developed as final design for the Project progresses.
- b. ☒ Identify the entity (or entities) that will be responsible for operating and maintaining the system (or parts of the system) to demonstrate that the entity (or entities) meet(s) the requirements of section 12.3 of the Applicant's Handbook, Vol. I.
Duke Energy Florida, Inc. (DEF), the applicant, will be responsible for operation and maintenance of the Citrus Combined Cycle Site and associated linear facilities.
- ☐ If different from the permittee, provide a draft document enumerating the enforceable affirmative obligations on the entity to properly operate and maintain the system for its expected life, and documentation of the entity's financial responsibility for long-term maintenance. **Not applicable.**
- ☒ If the proposed operation and maintenance entity is not a property owner's association, provide proof of the existence of an entity, or the future acceptance of the system by an entity which will operate and maintain the system.
Please see Attachment E.
- c. ☐ Provide drafts of all proposed conservation easements, stormwater management system easements, draft property owner's association documents, and plats for the property containing the proposed system. **DEF will retain ownership of the property and does not anticipate the need for any easements for the stormwater management system.**
- d. ☐ Provide legal reservations for access to the treatment system for maintenance and operation by future maintenance entities for subdivided projects. **Not applicable.**
- e. ☒ Provide indication of how water and wastewater service will be supplied.
The Project will require groundwater for plant service/process and potable water uses. This water will be provided from the existing or replacement wells on the CREC property. These water needs will not increase the existing groundwater use allocations approved by the Southwest Florida Water Management District for the existing CREC operations, which have had no adverse impacts on groundwater resources in the area.
- There are no regional wastewater treatment facilities in the area available to serve the Project. Sanitary wastewater will be disposed of on-Site through the use of an appropriately designed package treatment plant or a subsurface septic treatment system. The septic system or package treatment plant will be located, designed, and constructed in accordance with all applicable nonprocedural requirements.**
- f. ☒ Provide a copy of the boundary survey and/or legal description and acreage of the total land area of contiguous property owned/controlled the applicant.
A parcel of land lying in Sections 26 and 27, Township 17 South, Range 16 East, Citrus County, Florida, being more particularly described as follows:

Begin at the Southwest corner of Section 27, Township 17 South, Range 16 East; thence N00°36'02"W along the West line of the Southwest 1/4 of said Section 27, a distance of 2665.86 feet to the West 1/4 corner of said Section 27 and the South line of a parcel described in Official Records Book 2440, Page 918 of the Public Records of Citrus County, Florida; thence S89°30'12"E along said South line, a distance of 150.03 feet to the Southeast corner of said parcel described in Official Records Book 2440, Page 918; thence N00°36'02"W along the East line of said parcel, a distance of 552.17 feet; thence departing said

East line run S89°41'52"E, a distance of 5308.44 feet; thence S00°00'03"W, a distance of 3216.44 feet to a point on the South line of the Southwest 1/4 of Section 26, Township 17 South, Range 16 East; thence S89°57'35"W along said South line, a distance of 122.35 feet to the Southeast corner of said Section 27; thence N89°41'58"W along the South line of the Southeast 1/4 of said Section 27, a distance of 2651.24 feet to the South 1/4 corner of said Section 27; thence N89°41'45"W along the South line of the Southwest 1/4 of said Section 27, a distance of 2651.08 feet to the POINT OF BEGINNING

Containing 399.99 acres, more or less.

PART 5: WATER USE

- a. ☐ Describe how irrigation will be provided to the project. Will the surface water system be used for water supply, including landscape irrigation, or recreation? **DEF does not anticipate providing irrigation associated with the Project.**
- b. ☐ If a Consumptive Use or Water Use permit has been issued for the project, state the permit number: **DEF is seeking certification of the Project under the PPSA. A separate water use permit is, therefore, not required for the Project. Information regarding plant water use is included in Section 4.5 of the SCA.**
- c. ☐ If a Consumptive Use or Water Use permit has not been issued for the project, indicate if such a permit will be required. ☐ yes ☒ no ☐ don't know
If yes, please indicate when the application for a permit will be submitted:
DEF is seeking certification of the Project under the PPSA. A separate water use permit is, therefore, not required for the Project. Information regarding plant water use is included in Section 4.5 of the SCA.
- d. ☐ Indicate how any existing wells located within the project site will be utilized or abandoned. **There is one existing monitoring well on the western portion of the property. DEF is still evaluating whether that well will be used in conjunction with the Project. If it is not used, it will be properly abandoned in accordance with all applicable requirements.**

PART 6: SPECIAL BASIN INFORMATION

Is your project within a special basin as described in the applicable Applicant's Handbook, Vol. II?

☐ yes ☒ no ☐ don't know

If yes, please demonstrate that the project will meet the applicable special basin criteria.

FIGURES

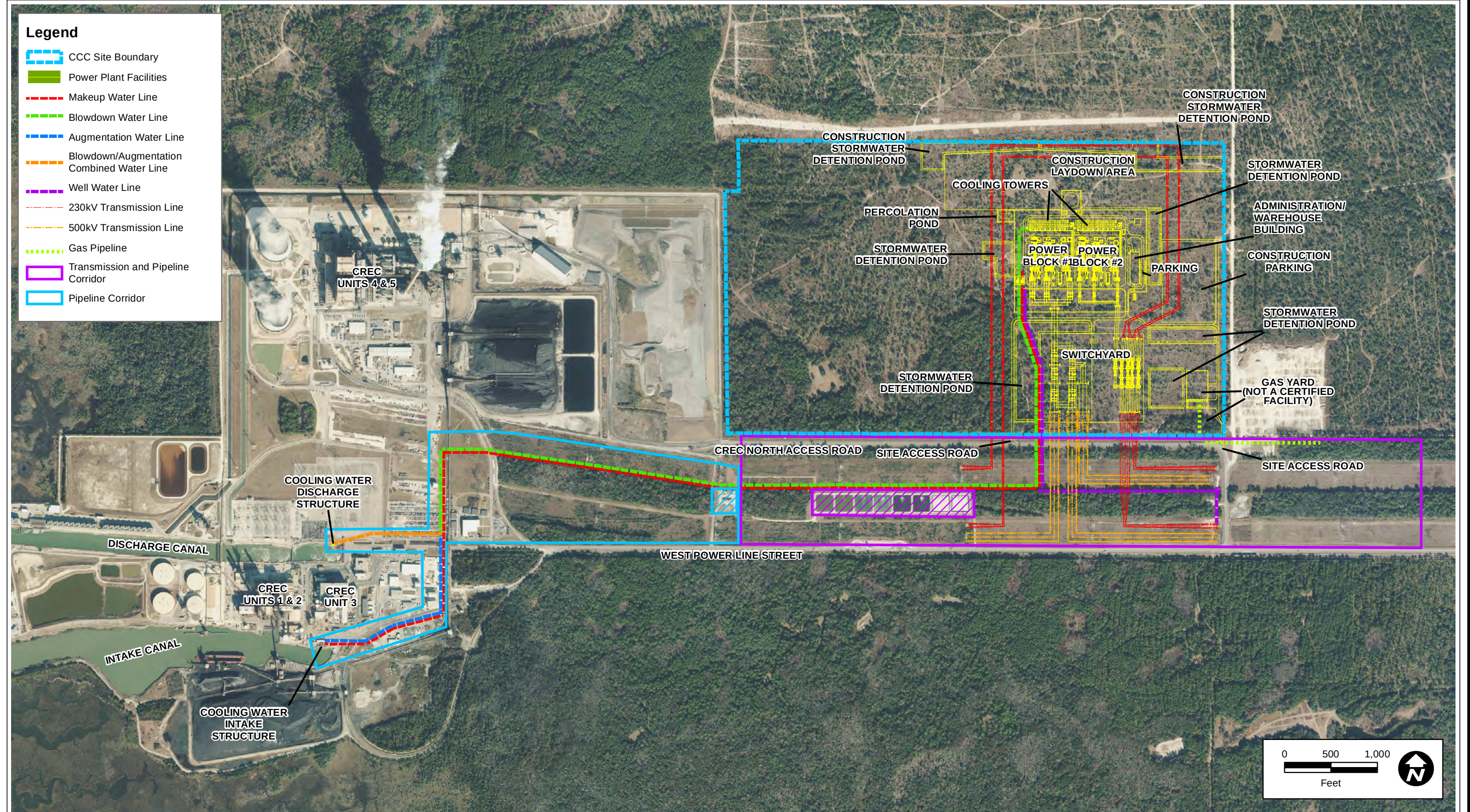


FIGURE 2.
PROPOSED CCC POWER PLANT AND ON-SITE AND OFF-SITE ASSOCIATED FACILITIES

Sources: FDOT, 2011; AMEC, 2013; Burns & McDonnell, 2014; ECT, 2014.

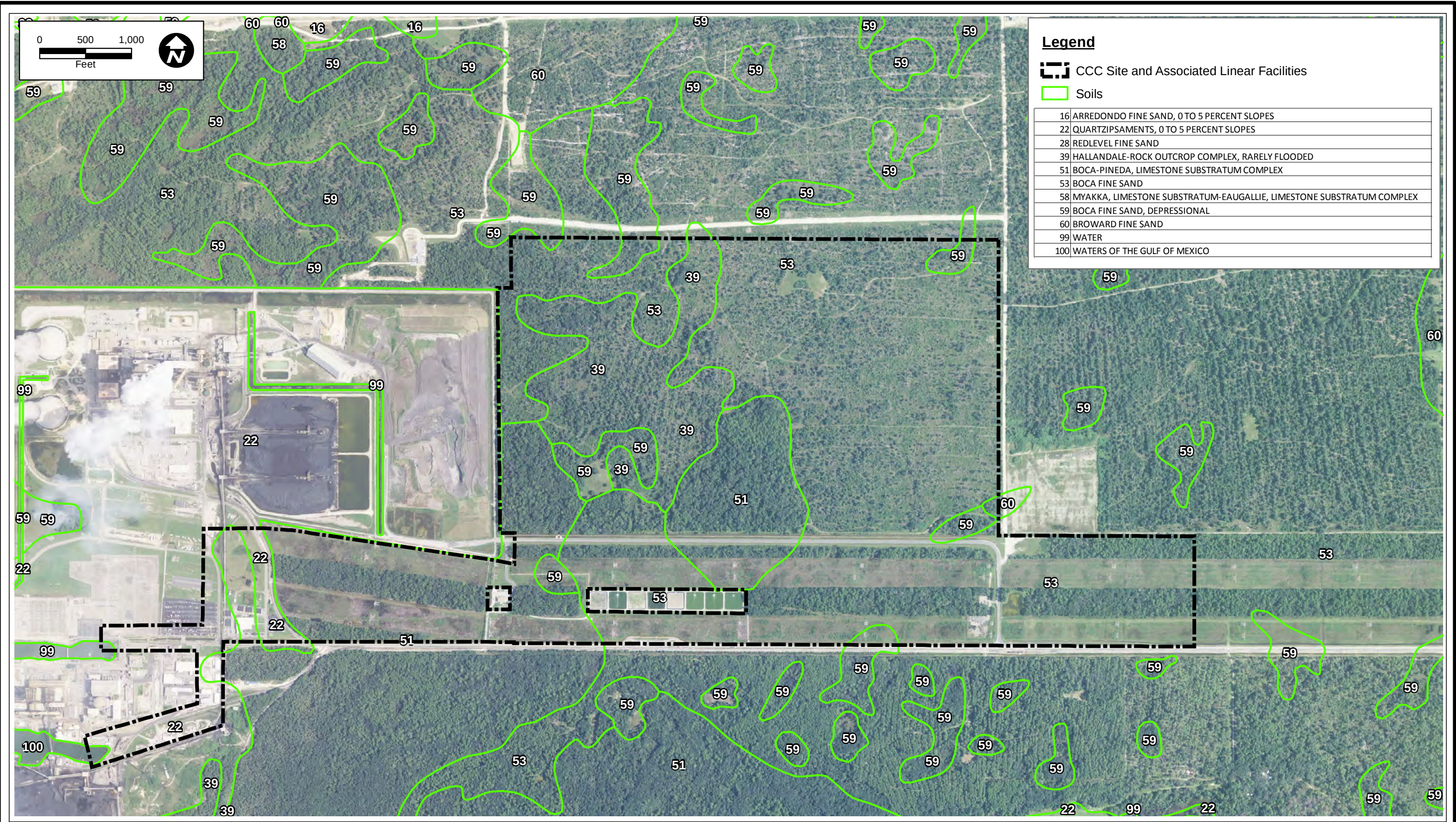


FIGURE 3.
SOIL MAP

Sources: NAIP, 2013; NRCS, 2012; ECT, 2014.



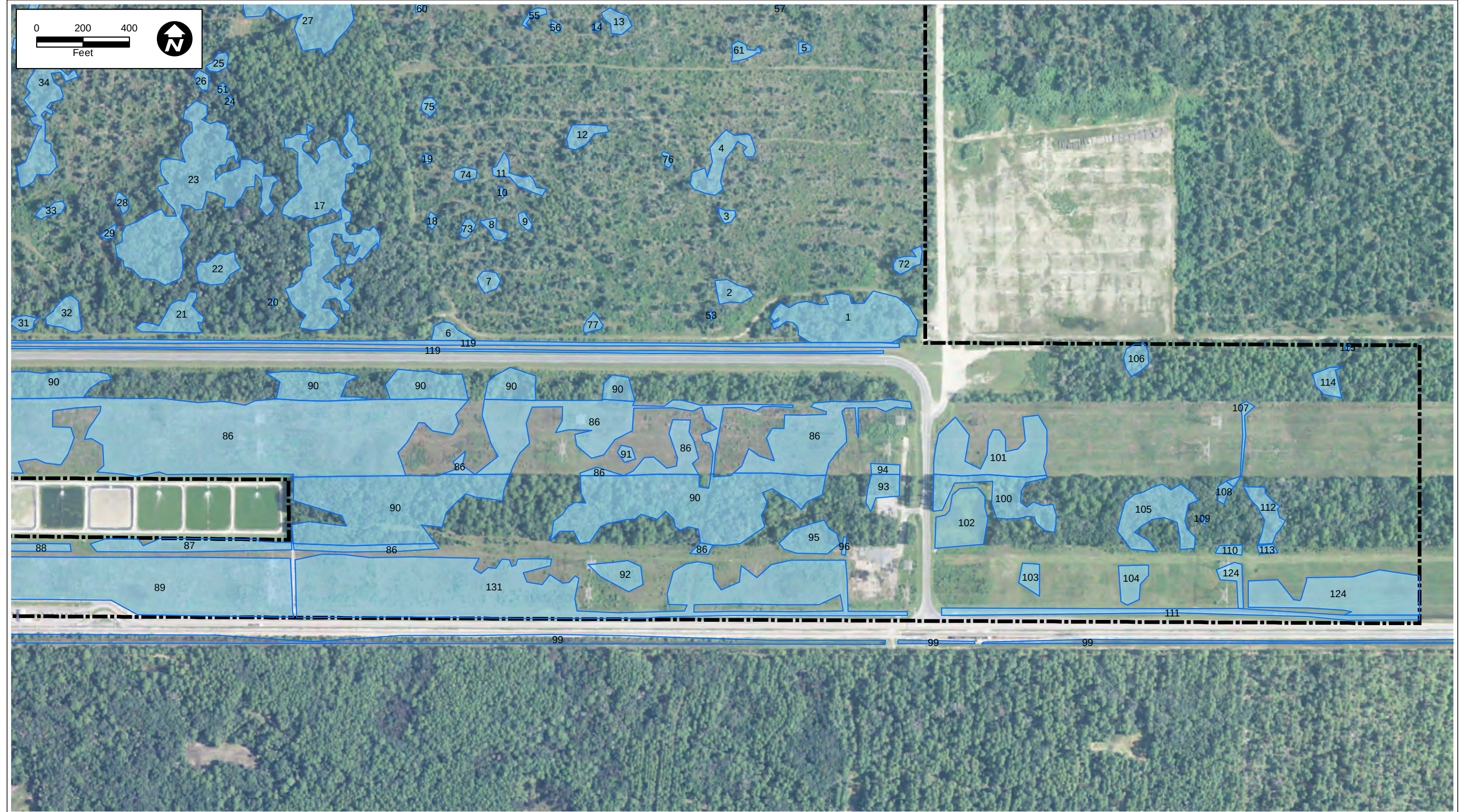
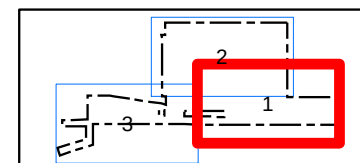


FIGURE 4. (SHEET 1 of 3)
EXISTING WETLANDS ON CCC SITE AND ASSOCIATED LINEAR FACILITIES

Sources: NAIP, 2013; ECT, 2014.



Legend

-  CCC Site and Associated Linear Facilities
-  Wetlands With Wetland Identification Numbers



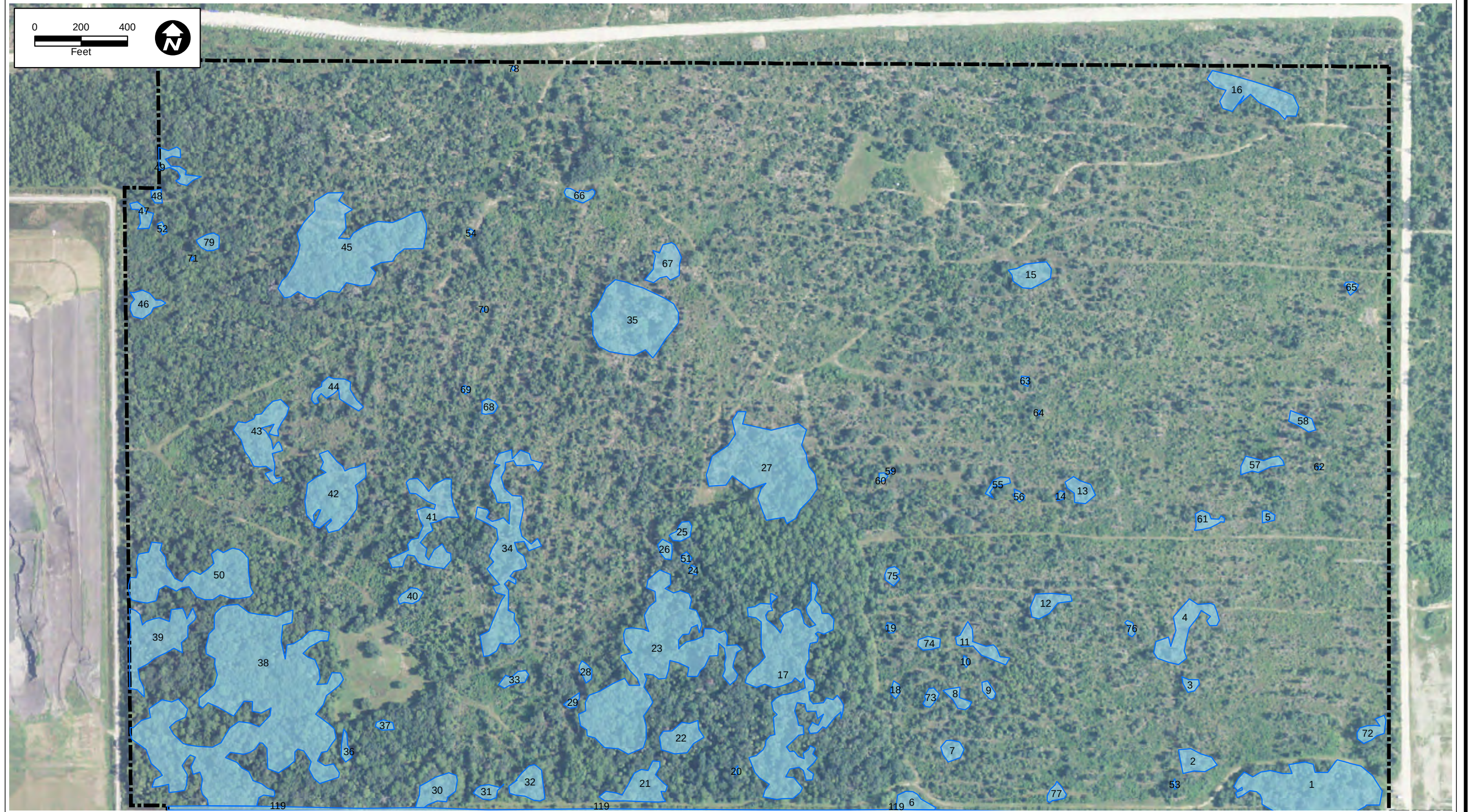
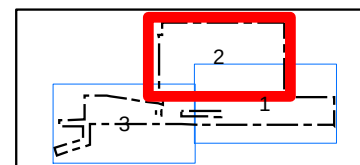


FIGURE 4. (SHEET 2 of 3)
EXISTING WETLANDS ON CCC SITE AND ASSOCIATED LINEAR FACILITIES

Sources: NAIP, 2013; ECT, 2014.



Legend

-  CCC Site and Associated Linear Facilities
-  Wetlands With Wetland Identification Numbers



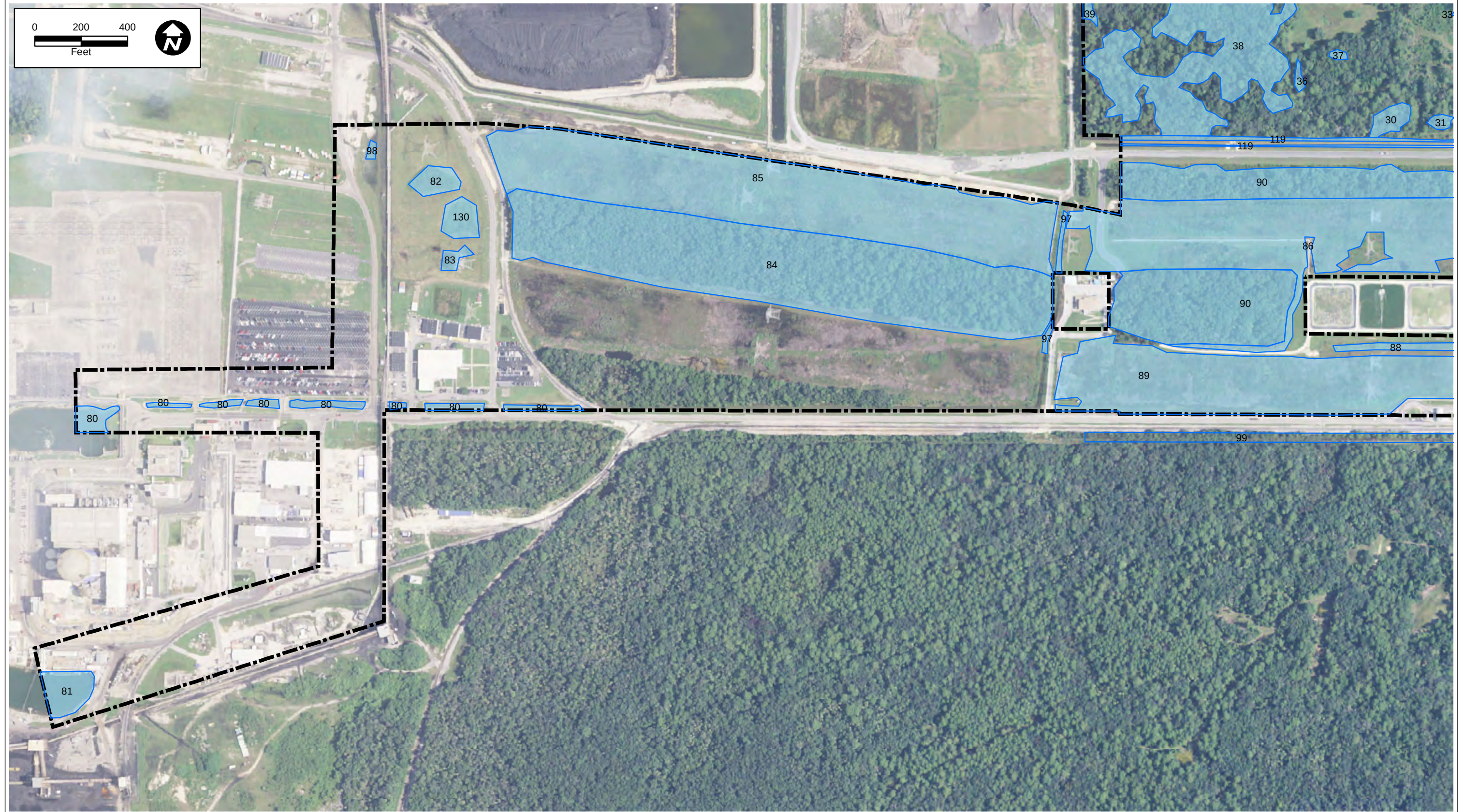
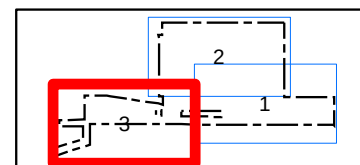


FIGURE 4. (SHEET 3 of 3)
EXISTING WETLANDS ON CCC SITE AND ASSOCIATED LINEAR FACILITIES

Sources: NAIP, 2013; ECT, 2014.



Legend

-  CCC Site and Associated Linear Facilities
-  Wetlands With Wetland Identification Numbers



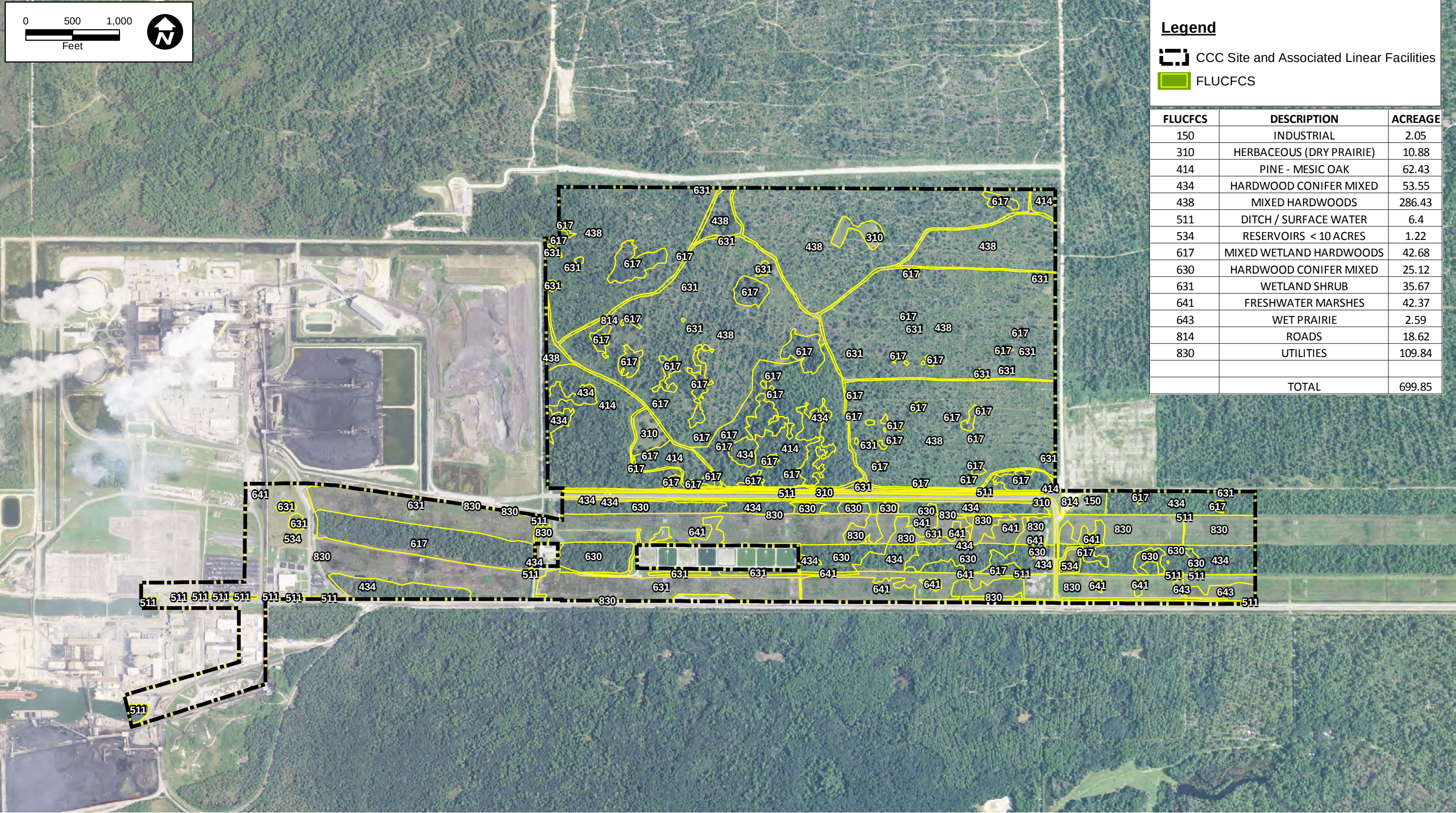


FIGURE 5.

EXISTING LAND USE/COVER TYPES AND VEGETATION COMMUNITIES USING FLUCCS

Sources: NAIP, 2013, SWFWMD, 2011; ECT, 2014.

DUKE

ENERGY

FLORIDA

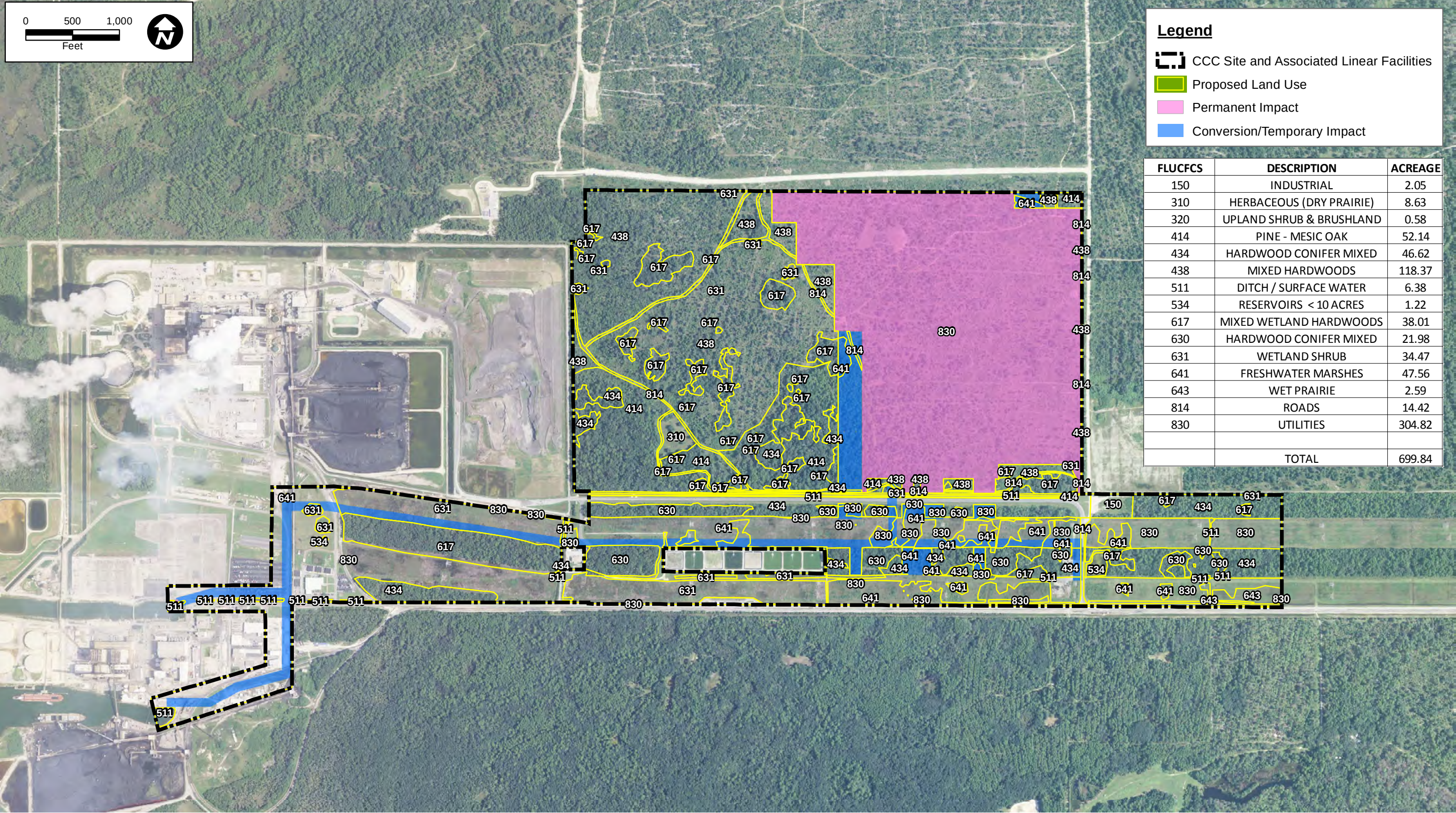


FIGURE 6.
PROPOSED LAND USE/COVER TYPES AND VEGETATION COMMUNITIES USING FLUCCS

Sources: NAIP, 2013; ECT, 2014.



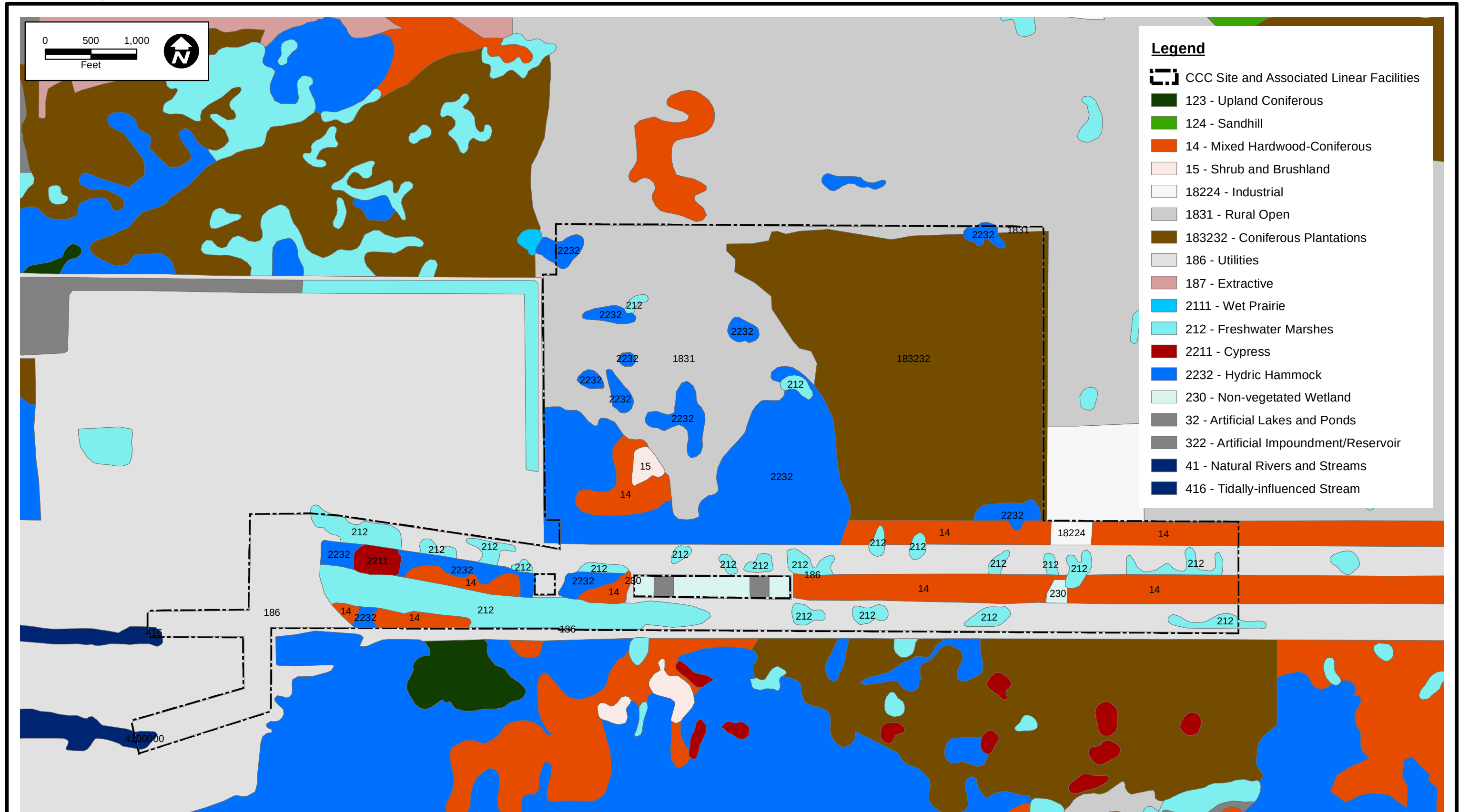


FIGURE 7.
EXISTING VEGETATION COMMUNITY TYPES USING FNAI

Sources: FNAI, 2012; ECT, 2014.



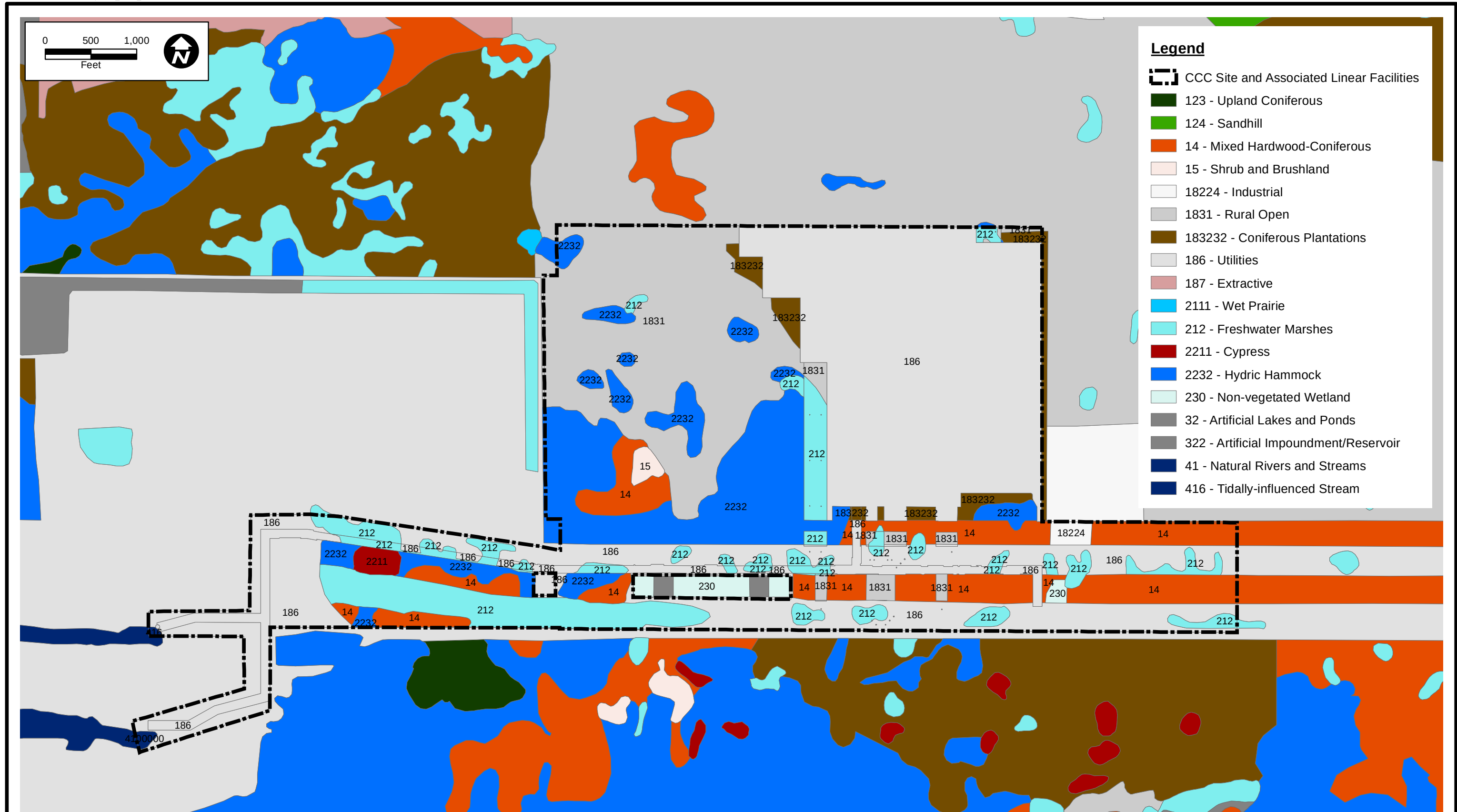


FIGURE 8.
PROPOSED VEGETATION COMMUNITY TYPES USING FNAI

Sources: FNAI, 2012; ECT, 2014.



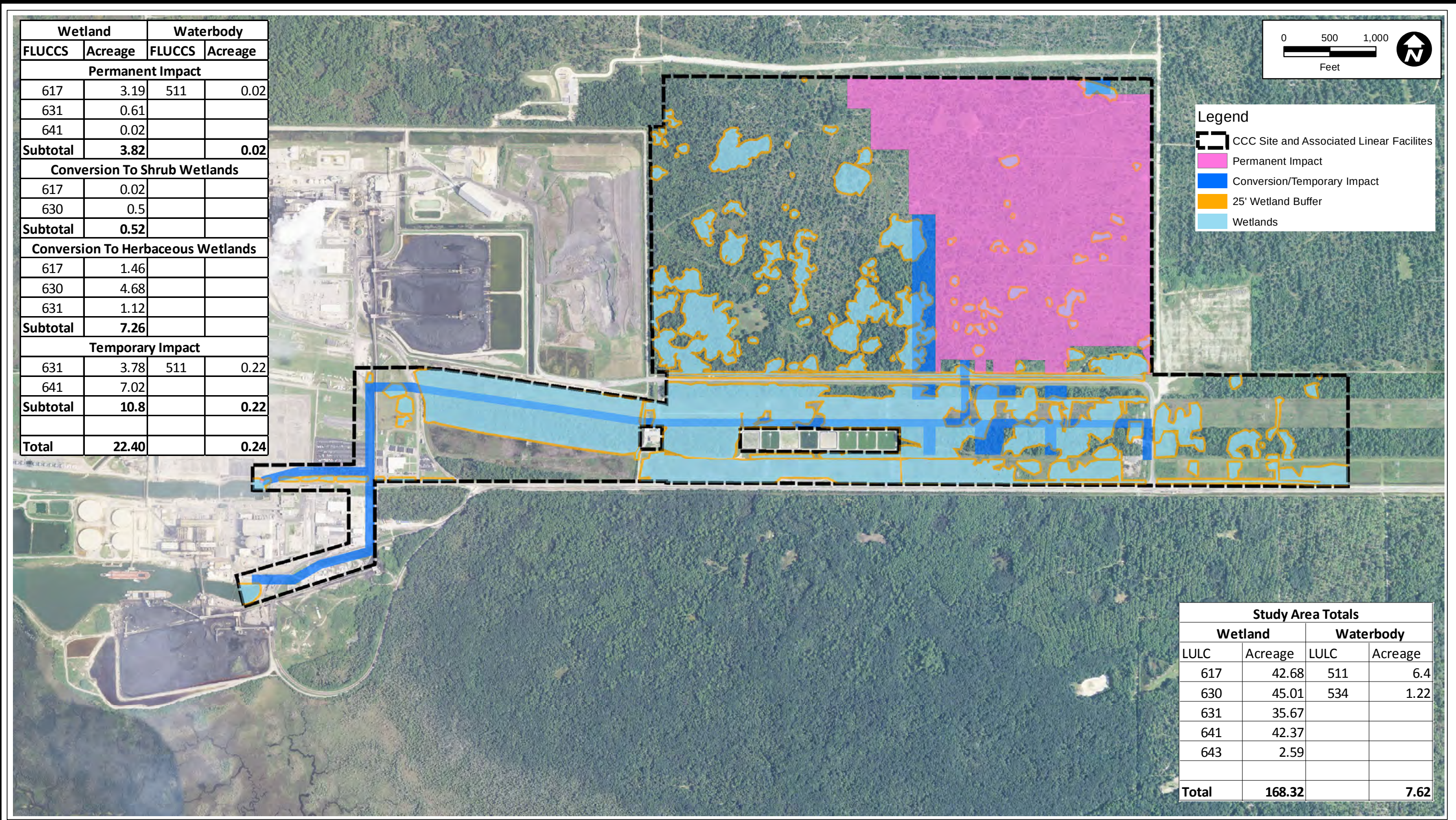


FIGURE 9.
POTENTIAL IMPACTS

Sources: AMEC, 2013; Burns & McDonell, 2014; ECT, 2014.



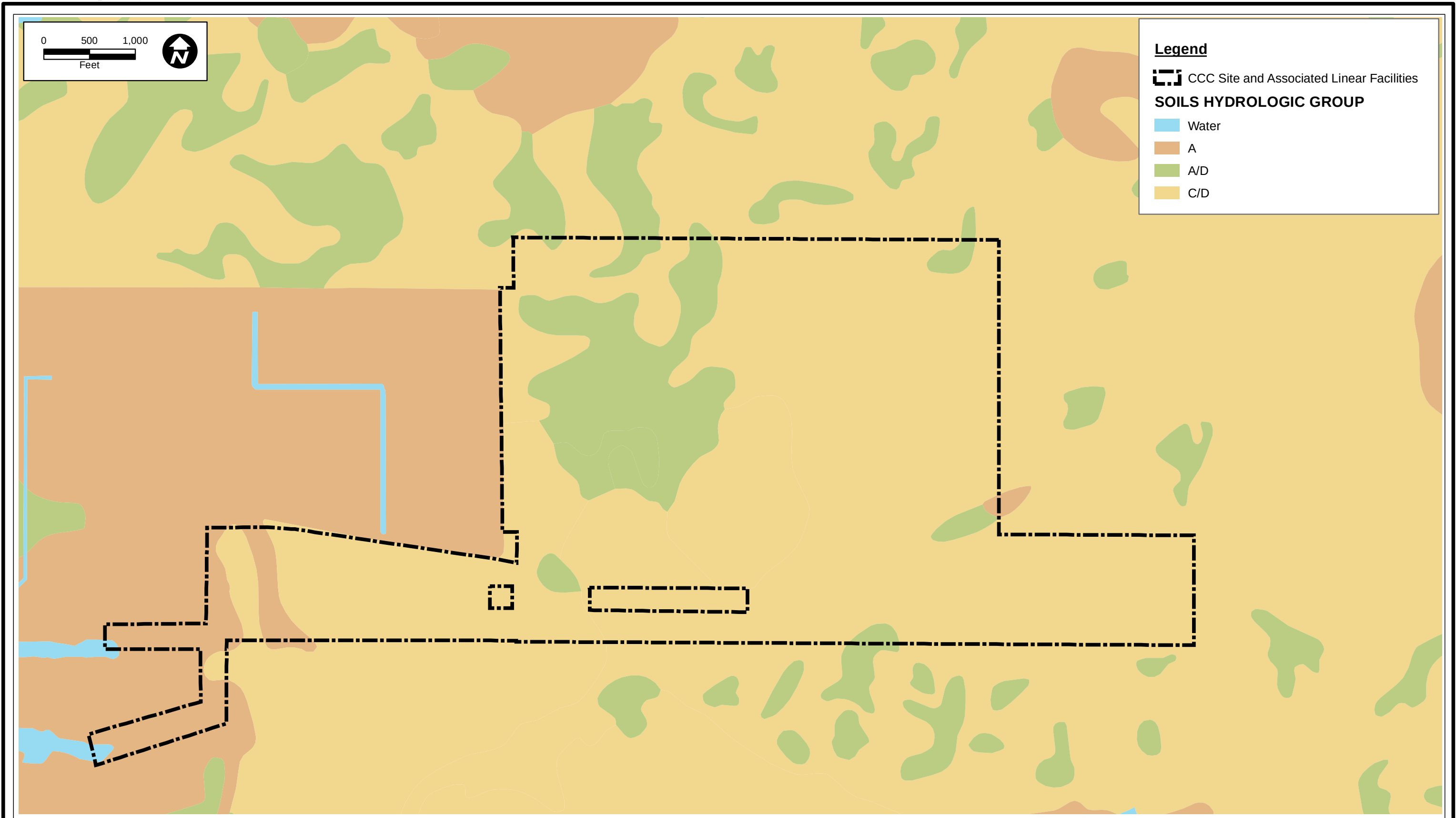


FIGURE 10.
HYDROLOGIC SOIL CLASSIFICATION MAP

Sources: NAIP, 2013; NRCS, 2012; ECT, 2014.

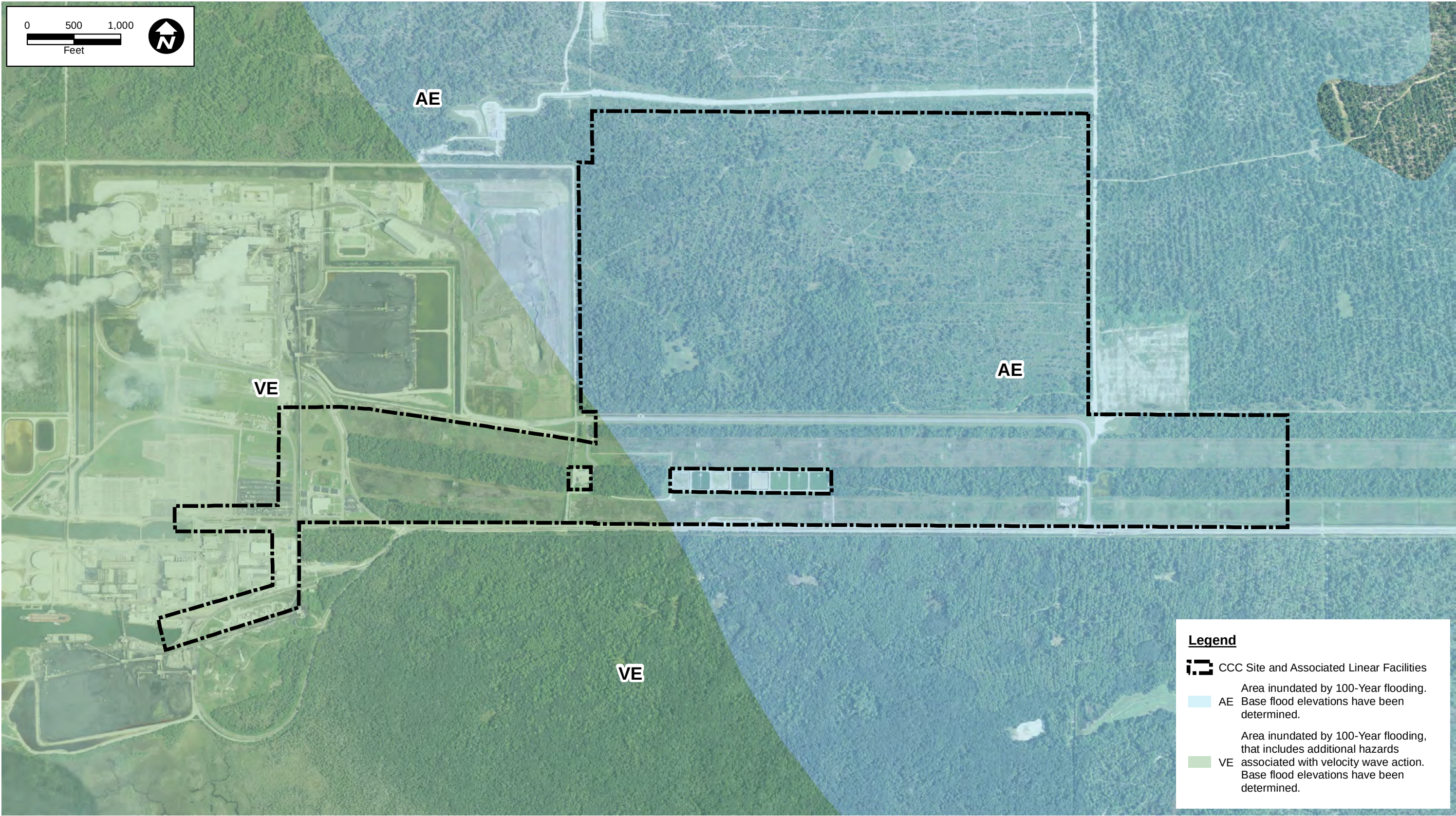


FIGURE 11.
100 YEAR FLOOD ZONES

Sources: FEMA, 2006; NAIP, 2013; ECT, 2014.



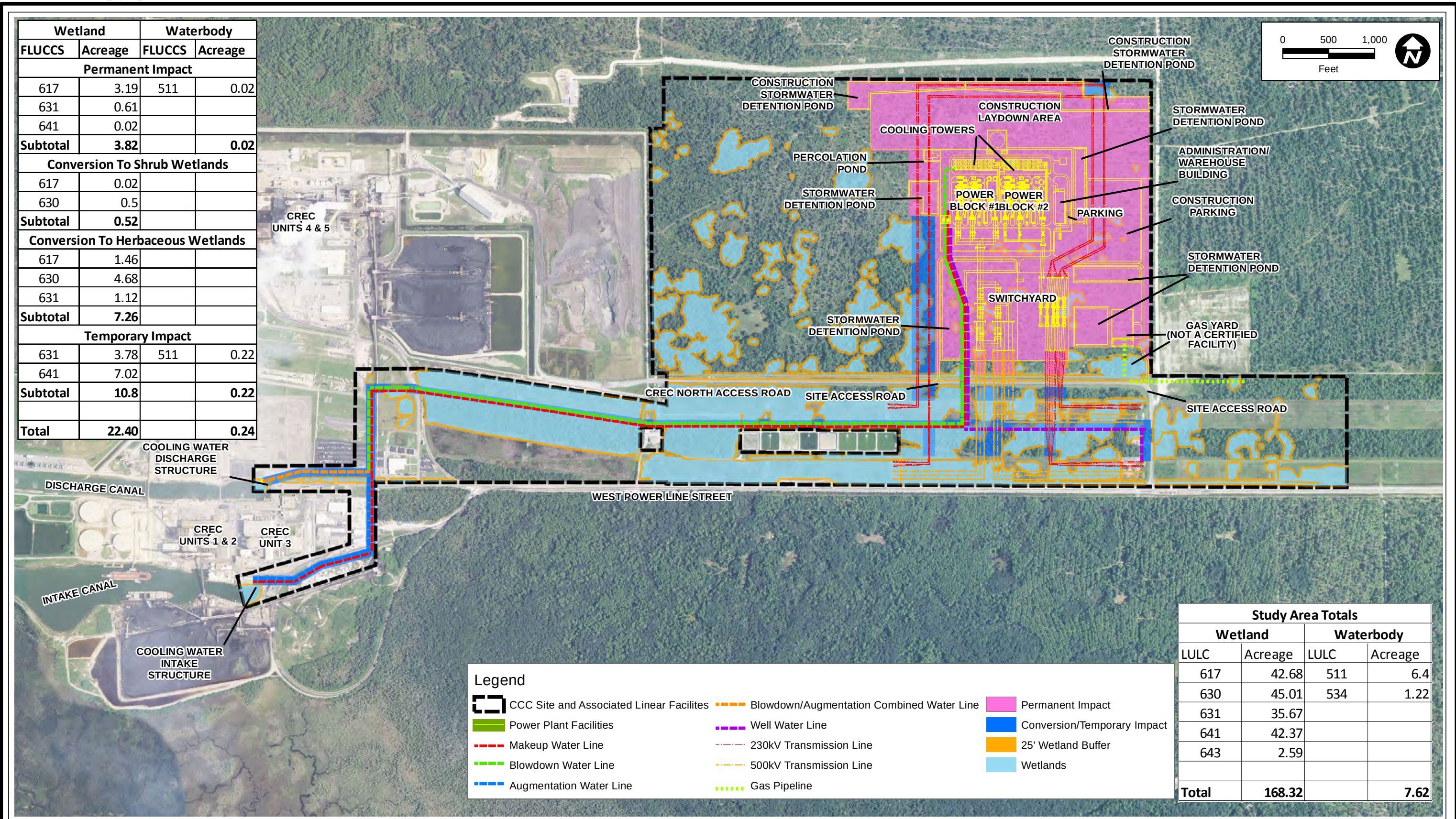


FIGURE 12.
SITE LAYOUT AND ASSOCIATED IMPACTS

Sources: AMEC, 2013; Burns & McDonnell, 2014; ECT, 2014.



ATTACHMENTS

Attachment A. Elimination and Reduction of Impacts

CCC Project Site

Construction of the Duke Energy Florida, Inc. (DEF), Citrus Combined Cycle (CCC) Project will impact approximately 192.59 acres, or approximately one-half of the Project Site. Of this impacted area, approximately 96 percent is comprised of upland vegetation communities. The CCC Project site layout has been designed to avoid and minimize impacts to wetland communities of better quality to the greatest extent possible. However, given the distribution of on-Site wetland communities, it was not possible to entirely avoid wetlands. The Site layout is designed to avoid the larger, higher-quality wetlands and impact those that are smaller, isolated, and of lower quality. Concentration of the Project facilities on the eastern half of the Site, which has been impacted by past silvicultural activities, reduces and eliminates wetland impacts. On the eastern half of the Site, the CCC Site layout was modified a number of times. As a result, the largest wetland on the eastern half of the property, located in the southeast corner, will mostly be avoided and largely remain intact.

Almost all of the wetlands proposed for clearing and/or fill are considered lower quality wetlands using the Florida Department of Environmental Protection (FDEP's) Uniform Mitigation Assessment Methodology (UMAM). Impacts to these wetlands will be fully mitigated through the purchase of credits from an approved off-Site mitigation bank.

Associated Linear Facilities

During the initial siting phase for the selection of the CCC Site, transmission corridors adjacent to the candidate sites were examined, and the potential to develop new right-of-way was considered. The selection of the proposed CCC Site was influenced by its proximity to the existing Crystal River Energy Complex (CREC) transmission corridors. Construction of the associated linear facilities within the existing CREC utilities corridor, within which most wetlands are already disturbed, results in the reduction of impacts to wetlands.

Table 1 summarizes the wetland and water body impacts within the CCC Site and associated linear facilities corridor. Figure 9 depicts the location of the proposed wetland and water body impacts within the CCC Project and associated linear facilities.

Wetland Impacts

Permanent Fill Impacts

Construction of the CCC Project will result in approximately 3.84 acres of permanent fill wetland impacts.

Permanent Conversion Impacts

The CCC Project and associated linear facilities will result in a permanent conversion of 7.78 acres of forested wetland to nonforested wetlands. This will occur in forested wetlands that are located on the 400-acre CCC Site and are within the new proposed transmission lines' 250-foot-wide maintenance rights-of-way and also over the pipeline trench areas. These areas will not be allowed to reestablish as forest after construction, to minimize potential damage to the electrical transmission lines' or pipelines' integrity from woody vegetation. Following construction, these areas will be maintained as emergent wetlands, so there will be no net loss of wetlands, but rather a change of wetland type.

The construction in the pipeline corridor will be restored to its preconstruction contours to avoid long-term impacts to wetland hydrology. In nonsaturated soils, the upper 12 inches of topsoil will be separated from the subsoil and replaced to the soil surface once the water pipes are laid. This will minimize the loss of function provided by hydric soil characteristics, such as organic matter accumulation and biogeochemical processes performed by wetland-specific microbial communities, as well as provide a seed source of preexisting wetland vegetation species. The wetland vegetation will reestablish through natural succession once construction and restoration activities are complete. In emergent wetlands, the herbaceous vegetation is expected to regenerate quickly (typically within one growing season). Each wetland/water body will be restored to its preconstruction contour and stabilized to minimize erosion.

Temporary Construction Impacts

The CCC Project's linear facilities will temporarily impact 11.02 acres of wetlands. These impacts are proposed to nonforested wetlands and water bodies and consist of herbaceous freshwater marshes (641), wetland shrub (631), and manmade ditches (511) associated with transmission line right-of-way. Temporary construction impacts to these wetlands are needed for temporary material storage, work space, and access along the transmission line and pipeline corridor. These areas will be restored to preconstruction conditions.

Elimination or Reduction of Impacts

Impacts to wetlands and water bodies were eliminated or reduced to the extent practicable by using the following standards:

- Conducting an alternatives analysis to identify a site with an existing transmission corridor that will meet the Project objectives, while avoiding and minimizing environmental impacts to the maximum extent practicable.
- Avoiding permanent loss to larger and better quality wetlands by locating the proposed Project facilities on the eastern portion of the CCC Site.
- Collocating all linear facilities within an existing transmission line corridor.
- Locating additional temporary work space within existing utility corridors to the maximum extent practicable or in other upland areas.
- Use of trench boxes to facilitate pipeline construction in wetland areas, which reduces the overall construction impact footprint in the wetland areas.
- Implementing best management practices (BMPs) and effective soil erosion control measures (e.g., silt fence, straw bales).

Attachment B. Fish, Wildlife and Listed Species Resources

Wildlife Species

Wildlife resources on and in the vicinity of the Citrus Combined Cycle (CCC) Site were identified based on literature reviews and on-Site reconnaissance visits conducted by Environmental Consulting & Technology, Inc. (ECT), in 2014 and ESI in 2013. Site reconnaissance activities consisted of habitat characterizations, wetland delineations, and wildlife observations. Direct observations of individuals, as well as signs of wildlife (e.g., tracks, scat), were recorded by ESI during a Site review in 2013 and supplemented by ECT during field visits in the spring of 2014.

The landscape of herbaceous (dry prairie), pine-mesic oak, mixed hardwoods, and wetland communities interspersed within the CCC Site provides for habitat for many common mammal, bird, reptile, and amphibian species. Mammalian species that occur or are likely to occur on the CCC Site are those widespread in the pine-mesic oak landscape mosaic of the area. These would include whitetail deer (*Odocoileus virginianus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), feral hog (*Sus scrofa*), nine-banded armadillo (*Dasypus novemcinctus*), raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), eastern cottontail rabbit (*Sylvilagus floridanus*), and gray squirrel (*Sciurus carolinensis*).

Most of the common mammals likely found on the CCC Site are generalists, in that they are not exclusive to any one habitat type but use various habitats for different purposes.

Common avian species that were observed on the CCC Site or are considered likely to use the Site include northern cardinal (*Cardinalis cardinalis*), eastern kingbird (*Tyrannus tyrannus*), black vulture (*Coragyps atratus*), turkey vulture (*Cathartes aura*), and northern mockingbird (*Mimus polyglottus*). Barred owls (*Strix vammia*), red-shouldered hawks (*Buteo lineatus*), hairy woodpeckers (*Picoides villosus*), and pileated woodpeckers (*Drycopus pileatus*) inhabit the wetter woodlands on-Site. Several common species of wading birds may forage in wetland areas, such as great blue heron (*Ardea herodias*), little blue heron (*Ardea caerulea*), and white ibis (*Eudocimus albus*).

No nesting colonies of wading birds have been recorded, nor is it likely that colonies will become established on the CCC Site due to the absence of the open water habitats preferred by these species. Wading bird nesting colonies are typically located in

tree islands over or near open water, which helps protect the nests from terrestrial predators, such as raccoons and rats.

The Site is situated near the Gulf of Mexico and along the path of the Eastern Atlantic Flyway, which makes it potentially well located as a stopover for migratory birds; although, the proximity of more suitable natural areas such as Goethe State Forest, Crystal River Preserve State Park, or Chassahowitska National Wildlife Refuge may make the CCC Site comparably less desirable to some avifauna. Common migratory bird species likely to occur on the CCC Site may include the American robin (*Turdus migratorius*), yellow-rumped warbler (*Dedroica coronata*), yellow-throated warbler (*Dendroica dominica*), and cedar waxwing (*Bombycilla cedrom*).

Table B-1 contains wildlife species observed on the CCC Site.

Listed Species

Flora

The important flora of the region was researched through a variety of data sources, including but not limited to the Florida Natural Areas Inventory (FNAI) and Websites of the Florida Fish and Wildlife Conservation Commission (FWC), U.S. Fish and Wildlife Service (USFWS), and Florida Department of Agriculture and Consumer Services (FDACS). Specific information on listed plant species is provided in the following paragraphs.

Element occurrence records for the CCC Site and surrounding area are provided by FNAI, FWC, and USFWS list of protected species in Citrus County. Table 3.3.6-2 lists important flora species with the potential to occur on or within 5 miles of the CCC Site (FNAI); out of those species, 2 are federally listed and 17 are state-listed threatened or endangered. Only one of these species, a state-endangered coastal vervain, was observed on the CCC Site during the field surveys. Descriptions of these species, including key identifying characteristics and preferred habitats, are provided in the following paragraphs.

Celestial Lily (*Nemastylis floridana*)

This is a state-endangered perennial herb, which forms a single, tall, and slender stem from a bulb. Its basal leaves are few and grass-like, sometimes more than 2 feet (ft) long; stem leaves are small and scattered along the stem. This lily produces stunning large deep blue flowers, measuring more than 1.5 inches across, with six spreading petals. The flowering time is August through October, with flowers being open in the afternoon. Its fruit is an erect, oval capsule approximately 0.5 inch long. Celestial lily occurs in open sunny wetlands, particularly wet flatwoods, prairies, marshes, and cabbage palm hammock edges. Because the CCC Site supports some of this habitat, this

Table B-1. Wildlife Observed on the DEF CCC Site, 2014

Common Name	Scientific Name
<u>Amphibians</u>	
Bullfrog	<i>Rana catesbeiana</i>
Green treefrog	<i>Hyla cinerea</i>
Squirrel treefrog	<i>Hyla squirella</i>
<u>Reptiles</u>	
Black racer	<i>Coluber constrictor</i>
Eastern fence lizard	<i>Sceloporus undulatus</i>
Five-lined skink	<i>Eumeces fasciatus</i>
Gopher tortoise *	<i>Gopherus polyphemus</i>
Ground skink	<i>Scinella lateralis</i>
<u>Birds</u>	
Bald eagle	<i>Haliaeetus leucocephalus</i>
Black vulture	<i>Coragyps atratus</i>
Blue jay	<i>Cyanocitta cristata</i>
Blue-gray gnatcatcher	<i>Poliophtila caerulea</i>
Carolina chickadee	<i>Parus carolinensis</i>
Carolina wren	<i>Thryothorus ludovicianus</i>
Common bobwhite	<i>Colinus virginianus</i>
Common crow	<i>Corvus brachyrhynchos</i>
Common nighthawk	<i>Chordeiles minor</i>
Eastern phoebe	<i>Sayornis phoebe</i>
Great-crested flycatcher	<i>Myiarchus crinitus</i>
Ground dove	<i>Columbina passerina</i>
Mourning dove	<i>Zenaida macroura</i>
Northern cardinal	<i>Cardinalis cardinalis</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Osprey	<i>Pandion haliaetus</i>
Red-bellied woodpecker	<i>Melanerpes carolinus</i>
Red-shouldered hawk	<i>Buteo lineatus</i>
Red-winged blackbird	<i>Agelaius phoeniceus</i>
Rufous-sided towhee	<i>Pipilo erythrophthalmus</i>
Swallow-tailed kite	<i>Elanoides forficatus</i>
Tufted titmouse	<i>Parus bicolor</i>
Turkey vulture	<i>Cathartes aura</i>
White-eyed vireo	<i>Vireo griseus</i>
<u>Mammals</u>	
Bobcat	<i>Felis rufus</i>
Coyote	<i>Canis latrans</i>
Feral hog	<i>Sus scrofa</i>
Nine-banded armadillo	<i>Dasypus novemcinctus</i>
Opossum	<i>Didelphis virginiana</i>
White-tailed deer	<i>Odocoileus virginianus</i>

*State-listed species.

Source: ECT, 2014.

species has a potential to occur on-Site, although none of the species were observed during the site survey.

Coastal Vervain (*Glandularia maritima*)

The coastal vervain is a state-endangered plant species that has been documented within 5 miles of the proposed Site by the FNAI biodiversity matrix analysis. Known habitat for this species includes dune sand, roadsides, and coastal hammocks. A few populations of this species were observed along the roadside in the northeastern portion of the CCC Site.

Cooley's Water Willow (*Justicia cooleyi*)

This plant species is federally and state-listed as endangered. Cooley's water willow is a short perennial herb, less than 16 inches tall, having upright, quadrangular, stems and leaves up to 2 inches long. Flowers are borne on forked, zigzag branches that are slightly longer than the leaves. The petals are fused into a two-lipped corolla with a slightly longer lower lip, which is mottled lavender and white in color. The rest of the corolla is bright lavender-rose.

Flowering takes place from August to December (Kral, 1983¹; Perkins, 1979²). Although none were observed during the field surveys, this species has the potential to occur within the CCC Site because of its habitat, which includes moist to seasonally wet rocky woods, mesic hardwood, or hardwood pine forests.

Corkwood (*Leitneria floridana*)

This deciduous shrub or small tree is federally- and state-listed as threatened. Corkwood is named for its characteristically light wood. It usually produces large multistemmed colonies or thickets ranging from 5 to 20 ft in height. Although this plant was not observed during the field surveys, it has the potential to occur within the proposed CCC Site because of its preferred habitat of coastal hammocks, sawgrass, and cabbage palm communities.

Florida Spiny-Pod (*Matelea floridana*)

The Florida spiny-pod is a state-endangered milky vine. The leaves are heart shaped and somewhat elongated, opposite, and several inches long. This species is known to occur in Citrus County and has the potential to occur within the CCC Site because of its preferred habitat, which includes riparian mesic forests, open woodlands, sandhills, and open fields.

¹ Kral, R. 1983. A Report on Some Rare, Threatened, or Endangered Forest-Related Vascular Plants of the South, Volume II. U.S. Department of Agriculture Forest Service. Technical Publication R8-TP 2, x+1305 pages. March.

² Perkins, K. 1979. *Justicia cooleyi*. Rare and Endangered Biota of Florida, Volume 5: Plants. Pages 97 and 98. University Presses of Florida, Gainesville.

Giant Orchid (*Pteroglossaspis ecristata*)

This species is a state-threatened perennial orchid. Its leaves are long, narrow, and overlapping and clustered at the base. Its flowers are yellowish-green with dark purple markings and occur on a terminal cluster. The giant orchid flowers from June to September. It occurs in numerous coastal plain habitats and tolerates a wide range of moisture conditions but is most often found in upland areas. Typical habitats include old fields, fire-maintained pine flatwoods, and scrub oak lands. On the CCC Site, marginal habitat for this species is present within the herbaceous dry prairie (310) or along upland forest edges. However, this species was not observed during the Site visits, and the likelihood of occurrence is low.

Godfrey's Swamp Privet (*Forestiera godfreyi*)

This is a state-endangered deciduous shrub to small tree that occurs in uplands. It reaches heights of 16 ft and has main stems that are arching or leaning. Its leaves are 2 to 3 inches long, opposite, simple, oval, toothed above the middle, and hairy beneath. Flowers are tiny and yellow; fruits are waxy and blue. Godfrey's swamp privet flowers between January and February with fruits present through May. It occurs in upland hardwood forests with limestone just beneath the surface, frequently on sloping land above rivers or lakes. This species is known to occur in Citrus County, with suitable habitat for this plant being found on the CCC Site, although it was not observed during the Site visits.

Incised Groove-Bur (*Agrimonia incisa*)

This is a state-threatened perennial herb. It has short, knotty rootstocks with black roots. Stems are thick, measuring approximately 2 to 4 ft tall, with long and short hairs intermixed. It has 12 to 18 leaves per stem, pinnately compound, with small principal leaflets numbering 7 to 9, pubescent on both surfaces and coarsely serrate margins. It occurs in mature pine woods with a weedy hardwood understory. Incised groove-bur has the potential to occur on the property due to some suitable on-Site habitat. However, this species was not observed during the Site visits.

Longspurred Mint (*Dicerandra cornutissima*)

This plant species is federally and state-listed as endangered. It grows up to 1.6 ft tall, with erect, nonwoody flowering shoots coming up from a woody base. The leaves are approximately 0.5 inch long and linear, with entire margins, and covered with conspicuous sunken glands. They are arranged opposite one another on the stems, often with two smaller leaves at each node. Longspurred mint flowers in September and produces fruits in the form of four small nutlets. While its preferred habitat includes open areas in sand pine scrub, oak scrub, and turkey oak communities, it can also colonize the edges of road rights-of-way. This species has a limited and low potential to

occur within the proposed Site. Longspurred mint has not been observed on-Site during field surveys.

Pine Pinweed (*Lechea divaricata*)

This is a state-endangered perennial herb. Pine pinweed has slender, erect flowering stems rising from a dense mat of spreading, older stems. The leaves are less than 0.4 inch long, alternate, narrowly oval with pointed tips, and disappear by flowering time (May to October). Flowers are arranged in tight clusters at the ends of short branches, with three tiny purple or green petals, dropping quickly after opening. Preferred habitat for this species includes scrub and scrubby flatwoods. While there is some potential for this plant to be found in Citrus County, there is a low likelihood of occurrence on the CCC Site, because true scrub and scrubby flatwoods communities are not represented on-Site. This plant species was not observed during the Site visits

Pinewoods Dainties (*Phyllanthus liebmannianus* subsp. *Platylepis*)

Pinewoods dainties is a state-endangered perennial herb. Its leaves are spirally arranged and distributed uniformly on the stem. Its habitat includes moist sandy peat of pine flatwoods roadside, thin soil over limestone, coastal hammock, and moist streamside limestone in hardwood forest. This plant species is not known to occur in Citrus County but has been documented within 5 miles of the proposed Site by the FNAI biodiversity matrix analysis. There is low potential of pinewoods dainties occurring on the CCC Site; it has not been noted during field surveys.

Pinkroot (*Spigelia loganioides*)

Pinkroot gentian is a state-endangered small (1 ft tall) herb, which blooms April to July. Its leaves are opposite and sessile with entire margins. This species is not known to occur in Citrus County, but has the potential to occur within the CCC Site due to its known habitat, which includes floodplain forests and upland or mesic hardwood hammocks over limestone. This species has not been noted the during field surveys.

Pond Spice (*Litsea aestivalis*)

This is a state-endangered shrub or small tree that occurs in wetlands. It reaches heights of 15 ft and has zigzag odorless twigs. Leaves are 0.5 to 1.5 inches long, deciduous, simple, alternate, somewhat leathery, smooth, oblong to lance shape, entire margins, and slightly thickened. Tiny flowers with six yellow sepals are located at the tips of the branches. Fruits are fleshy, red, and round. It flowers in late winter through early spring and fruits throughout the fall. Preferred habitats include edges of baygalls, flatwood ponds, and cypress domes; it may also form thickets around the edges of ponds. This species is known to occur in Citrus County, but the optimal habitat for this plant is lacking on-Site. Therefore, the possibility for the species to occur on-Site is low. Pond spice was not observed during the site surveys.

Sand Butterfly Pea (*Centrosema arenicola*)

This is a state-endangered perennial vine with stems up to 10 ft long. Its leaves are actually three oval- or lance-shaped leaflets about 2 inches long, dark green in color, and somewhat leathery. Flowers are 1.5 inches wide, purplish-blue, sometimes pink or white, twisted so that a large, notched banner petal is the lowest. Known habitat for this species includes sandhill, scrubby flatwoods, and dry upland woods. Therefore, the sand butterfly pea has low potential of occurring on the CCC Site; this species was not observed during the site visits.

Sand-Dune Spurge (*Chamaesyce cumulicola*)

Sand-dune spurge is a state-endangered herb. Its habitat includes high-shaded sand dune, oak scrub, and scrubby flatwoods. While there is a potential for this plant to occur in Citrus County, the probability of this plant occurring on-Site is low, because the CCC Site does not support optimal habitat to harbor this plant, and no sightings of this species were observed during the field surveys.

Tampa Vervain (*Glandularia tampensis*)

This is a state-endangered perennial herb with four-sided, sprawling stems reaching to approximately 2 ft long. Its leaves are 1.5 to 2.5 inches long, margins coarsely toothed, although sometimes entire below the middle; leaf tips are broadly pointed, with the upper leaf surface being dark green, and the lower surface being pale green. This species is known to occur in Citrus County and has been documented within 5 miles of the proposed Site by the FNAI biodiversity matrix analysis. Because known habitat for this species includes disturbed sand areas of live oak-cabbage palm hammocks and pine-palmetto flatwoods, there is potential for this species to occur on the CCC Site. However, this species was not observed during the Site visits.

Variable-Leaved Indian-Plantain (*Arnoglossum diversifolium*)

This is a state-threatened herb. Its stems are proximally ribbed and purplish. The leaves are petiolate, deltate-hastate, with dentate margins. It blooms from mid-May to early July and prefers wet or mucky soils along streams, swamps, woodlands, and mesic hammock. This species is not known to occur in Citrus County and has a low potential to occur within the proposed Site. However, this species was not observed during the Site visits.

Table B-2 presents state- or federally listed plant species potentially occurring within 5 miles of the CCC Site.

Table B-2. Federally and State-Listed Plant Species Potentially Occurring on or Near the CCC Site

Scientific Name	Common Name	Federal Status	State Status	Likelihood of Occurrence	Notes
<i>Nemastylis floridana</i>	Celestial Lily		LE	Moderate	Potential to occur (FNAI biodiversity matrix)
<i>Glandularia maritima</i>	Coastal vervain		LE	Present	Documented within 5 miles of the Site (FNAI biodiversity matrix)
<i>Justicia cooleyi</i>	Cooley's water-willow	LE	LE	Moderate	Potential to occur (FNAI biodiversity matrix)
<i>Leitneria floridana</i>	Corkwood		LT	Moderate	Potential to occur (FNAI biodiversity matrix)
<i>Matelea floridana</i>	Florida spiny-pod		LE	Moderate	Potential to occur (FNAI biodiversity matrix)
<i>Pteroglossaspis ecristata</i>	Giant orchid		LT	Low	Potential to occur (FNAI biodiversity matrix)
<i>Forestiera godfreyi</i>	Godfrey's swampprivet		LE	Moderate	Potential to occur (FNAI biodiversity matrix)
<i>Agrimonia incise</i>	Incised groove-bur		LT	Moderate	Potential to occur (FNAI biodiversity matrix)
<i>Dicerandra cornutissima</i>	Longspurred mint	LE	LE	Low	Potential to occur (FNAI biodiversity matrix)
<i>Lechea divaricata</i>	Pine pinweed		LE	Low	Potential to occur (FNAI biodiversity matrix)
<i>Phyllanthus liebmannianus</i> ssp. <i>Platylepis</i>	Pinewoods dainties		LE	Low	Documented within 5 miles of the Site
<i>Spigelia loganioides</i>	Pinkroot		LE	Moderate	Potential to occur (FNAI biodiversity matrix)
<i>Litsea aestivalis</i>	Pondspice		LE	Low	Potential to occur (FNAI biodiversity matrix)
<i>Centrosema arenicola</i>	Sand butterfly pea		LE	Low	Potential to occur (FNAI biodiversity matrix)
<i>Chamaesyce cumulicola</i>	Sand-dune spurge		LE	Low	Potential to occur (FNAI biodiversity matrix)
<i>Glandularia tampensis</i>	Tampa vervain		LE	Moderate	Documented within 5 miles of the Site
<i>Arnoglossum diversifolium</i>	Variable-leaved Indian-plantain		LT	Low	Potential to occur (FNAI biodiversity matrix)

Note: FL (E) = Florida endangered.
FL (T) = Florida threatened.
LE = federal endangered.
LT = federal threatened.

Sources: FNAI, 2014.
USFWS, 2014.
FDACS, 2014.

Fauna

Based on information extracted from FNAI's biodiversity matrix, several protected species are known to occur in the vicinity of the Site, and the Site has the potential to provide habitat for several additional protected species. Several species, including bald eagle, gopher tortoise, and eastern Indigo snake, were documented during a pedestrian survey of the Site (ESI, 2013³). Other species, including Florida mouse, Hawksbill sea turtle, little blue heron, piping plover, snowy egret, and wood stork, were documented as occurring within 5 miles of the Site (FNAI).

Table B-3 presents state- or federally listed wildlife species potentially occurring within 5 miles of the CCC Site. Also shown in Table B-3 are the species' current status and their likelihood of occurrence on the CCC Site. Species documented on or near the Site or considered likely to occur on the Site based on habitat preferences are discussed in the following paragraphs.

Marine mammals like the manatee and coastal nesting species such as American oystercatcher, black skimmer, brown pelican, least tern, Marian's marsh wren, piping plover, Scott's seaside sparrow, Gulf sturgeon, and several species of sea turtles (green sea turtle, Hawksbill sea turtle, Kemp's Ridley sea turtle, leatherback sea turtle, loggerhead sea turtle) have a low likelihood of occurrence on the CCC Site; however, these species may be affected by the off-Site associated linear facilities (i.e., intake/discharge structures) associated with the Project (see Chapter 9.0 of the SCA).

American Alligator (*Alligator mississippiensis*)

The American alligator is a large, semi-aquatic reptile that is related closely to crocodiles. Due to its similarity in appearance to the endangered American crocodile (*Crododylus acutus*), the American alligator is listed as threatened by both USFWS and FWC. Common in Florida, the American alligator can be found in most types of freshwater bodies in the state, including marshes and swamps such as those in Citrus County, and is therefore considered highly likely to occur on the CCC Site.

Bald Eagle (*Haliaeetus leucocephalus*)

This large raptor has been delisted (2007) under the Endangered Species Act due to successful population recovery efforts; however, it still remains federally protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act. The largest raptor that breeds in Florida, bald eagles are locally common, preferring to live near rivers, lakes, marshes, coastal areas, or inland waterways where fish, their food staple, are plentiful. Bald eagles will also prey on waterfowl, turtles, snakes, rabbits, and other small animals and carrion.

³ Environmental Services, Inc. (ESI). 2013. Wildlife Survey Report. Prepared for Duke Energy Florida, Inc.

Table B-3. Federally and State-Listed Wildlife Species Potentially Occurring on or Near the CCC Site

Scientific Name	Common Name	Federal Status	State Status	Likelihood of Occurrence	Notes
<i>Alligator mississippiensis</i>	American alligator	FT (S/A)	FT (S/A)	High	Known to occur in Citrus County
<i>Haematopus palliatus</i>	American oystercatcher		SSC	Moderate	Coastal
<i>Haliaeetus leucocephalus</i>	Bald eagle			Present	Several active nests documented within 5 miles of the Site (FWC nest locator, accessed 4-15-2014); probable active nest observed onsite during ESI pedestrian survey in fall 2013 and during ECT survey in spring 2014
<i>Rynchops niger</i>	Black skimmer		SSC	Moderate	Coastal
<i>Pelecanus occidentalis</i>	Brown pelican		SSC	Moderate	Coastal
<i>Caracara cheriway</i>	Crested caracara	LT	FT	Low	
<i>Drymarchon couperi</i>	Eastern indigo snake	LT	FT	Present	Observed onsite during pedestrian survey (ESI, 2013)
<i>Ursus americanus floridanus</i>	Florida black bear			Low	Not listed but still protected by FWC
<i>Athene cunicularia floridana</i>	Florida burrowing owl		SSC	Low	
<i>Podomys floridanus</i>	Florida mouse		SSC	Moderate	Documented within 5 miles of the Site
<i>Puma concolor coryi</i>	Florida panther	LE	FE	Unlikely	
<i>Pituophis melanoleucus mugitus</i>	Florida pine snake		SSC	Moderate	
<i>Grus canadensis pratensis</i>	Florida sandhill crane		F	Moderate	Known to occur in Citrus County
<i>Aphelocoma coerulescens</i>	Florida scrub-jay	LT	FT	Low	Unlikely; scrub habitat lacking onsite
<i>Rana capito</i>	Gopher frog		SSC	Moderate	
<i>Gopherus polyphemus</i>	Gopher tortoise		F	Present	Documented occurrence within 5 miles of the Site; several burrows observed during ESI pedestrian survey of property in fall 2013; four active burrows confirmed by ECT in spring 2014
<i>Chelonia mydas</i>	Green sea turtle	LE	FE	Low	Potential for occurrence in coastal area within 5 miles of the Site
<i>Acipenser oxyrinchus desotoi</i>	Gulf sturgeon	LT	FT	Low	Potential for occurrence in coastal area within 5 miles of the Site
<i>Eretmochelys imbricata</i>	Hawksbill sea turtle	LE	FE	Low	Documented occurrence within 5 miles of the Site
<i>Sorex longirostris eionis</i>	Homosassa shrew		SSC	Low	Known to occur in Citrus County
<i>Lepidochelys kempii</i>	Kemp's Ridley sea turtle	LE	FE	Low	Known to occur in Citrus County
<i>Sternula antillarum</i>	Least tern		F	Low	

Table B-3. Federally and State-Listed Wildlife Species Potentially Occurring on or Near the CCC Site (Continued, Page 2 of 2)

Scientific Name	Common Name	Federal Status	State Status	Likelihood of Occurrence	Notes
<i>Dermochelys coriacea</i>	Leatherback sea turtle	LE	FE	Low	Potential for occurrence in coastal area within 5 miles of the Site
<i>Aramus guarana</i>	Limpkin		SSC	Low	Known to occur in Citrus County
<i>Egretta caerulea</i>	Little blue heron		SSC	High	Documentation of occurrence within 5 miles of the Site
<i>Caretta caretta</i>	Loggerhead sea turtle	LT	FT	Low	Potential for occurrence in coastal area within 5 miles of the Site
<i>Trichechus manatus</i>	Manatee	LE	FE	Low	Potential for occurrence in warm waters within 5 miles of the Site; critical habitat (Crystal River) located south of Site
<i>Cistothorus palustris marianae</i>	Marian's marsh wren		SSC	Low	Coastal marshes
<i>Charadrius melodus</i>	Piping plover	LT	FT	Low	Documentation of occurrence within 5 miles of the Site; critical habitat north of Site
<i>Picoides borealis</i>	Red-cockaded woodpecker	LE	FE	Unlikely	Old-age pines not present
<i>Platalea ajaja</i>	Roseate spoonbill		SSC	Low	Known to occur in Citrus County
<i>Ammodramus maritimus peninsulae</i>	Scott's seaside sparrow		SSC	Low	Coastal marshes
<i>Sciurus niger shermani</i>	Sherman's fox squirrel		SSC	Moderate	Some limited habitat exists onsite
<i>Lampropeltis extenuata</i>	Short-tailed snake		F	Low	
<i>Egretta thula</i>	Snowy egret		SSC	High	Documentation of occurrence within 5 miles of the Site
<i>Falco sparverius paulus</i>	Southeastern American kestrel		F	Moderate	Known to occur in Citrus County
<i>Egretta tricolor</i>	Tricolored heron		SSC	High	Known to occur in Citrus County
<i>Eudocimus albus</i>	White ibis		SSC	High	Documentation of occurrence within 5 miles of the Site
<i>Mycteria americana</i>	Wood stork	LE	FE	High	Documentation of occurrence within 5 miles of the Site

Note: FT(S/A) = Federal threatened due to similarity of appearance.
SSC = species of special concern.
FE = Florida endangered.

FT = Florida threatened.
LE = federal endangered.
LT = federal threatened.

Sources: FNAI, 2014.
USFWS, 2014.
FWC, 2014.

Several active bald eagle nests are located within 5 miles of the Site, as recorded in FWC's eagle nest locator accessed by Environmental Consulting & Technology, Inc. (ECT), ecologists on April 15, 2014 (previous survey date, 2011). A probable nest location was identified on the CCC Site during pedestrian surveys in the fall of 2013 (ESI, 2013)⁴ and confirmed by ECT in 2014. Historical and anecdotal evidence further suggests that this particular nest is active.

Crested Caracara (*Caracara cheriway*)

While a member of the falcon family and a strong flier, the caracara spends much of its time on the ground, scraping for insects or hunting around shallow ponds or marshes for snakes, frogs, turtles, or fish. These large, boldly patterned raptors are opportunistic feeders that may be observed along roadways on fence posts or utility poles, where they can scan for carrion. The Caracara is both a federally and state-listed threatened species because of loss of habitat from conversion of native prairies to agriculture and development. While there is some potential for the caracara to be found in Citrus County, there is a low likelihood of occurrence on the CCC Site.

Eastern Indigo Snake (*Drymarchon corais couperi*)

The eastern indigo snake is both federally and state-listed as a threatened species. The longest of North American snakes, it is iridescent black or bluish-black, smooth-scaled, heavy-bodied, and often with red-tinged chin and throat. Eastern indigo snakes inhabit pine habitats and scrub communities, as well as mesic communities such as wet prairies and swamps during warmer months. Common prey animals include fish, frogs, toads, lizards, snakes, birds, and small mammals. The indigo snake frequently uses gopher tortoise burrows for shelter. The indigo snake was observed on the CCC Site during the fall 2013 pedestrian surveys, and its presence is considered likely given the presence of gopher tortoise habitat. Threats to this species include road mortality, habitat loss, and habitat fragmentation.

Florida Black Bear (*Ursus americanus floridanus*)

As of 2012, the Florida black bear is no longer listed as a state-threatened species by FWC; however, this bear continues to be protected under the Florida Black Bear Protection Rule, which makes it illegal to kill or injure a bear or sell its parts. Further protections are covered by the Florida Black Bear Management Plan, which guides bear management. Black bears are the largest land mammals in Florida and are powerful with large canine teeth. In Florida, bears do not have extended hibernation periods. Males and nonpregnant female bears may den-up in dense vegetation for only a few weeks or a month. Because their cubs are born in the den (late January to early February), pregnant female bears will den-up for the entire winter and often select more

⁴ Environmental Services, Inc. (ESI). 2013. Wildlife Survey Report. Prepared for Duke Energy Florida, Inc.

protected sites. Dens may be tree cavities, blown down or fallen trees, or ground nests in dense vegetation.

Because of its large home range and low population density, the Florida black bear is particularly susceptible to habitat loss. While there is some potential for Florida black bear presence in Citrus County, there is a low likelihood of occurrence on the CCC Site.

Florida Burrowing Owl (*Athene cunicularia floridana*)

The Florida burrowing owl can be found throughout much of the state, where its habitat is available. Burrowing owls prefer native prairies and cleared areas with short groundcover, including pastures, fields, airports, golf courses, and vacant lots in residential development areas. Human development has encroached on historical burrowing owl territory. Florida burrowing owls typically dig their own burrows but will also use gopher tortoise or armadillo burrows, which they use year-round. Burrowing owls eat predominantly insects, grasshoppers, and beetles, as well as small lizards, frogs, snakes, birds, and rodents. The causes of population decline are not known but may include absence of suitable nesting sites and increased mortality from vehicle collision. FWC lists the Florida burrowing owl as a species of special concern, protecting the owls, their eggs, and their burrows from harassment and/or disturbance by state law. Burrowing owls are further protected by the federal Migratory Bird Treaty Act. They have a low likelihood of occurrence on the CCC Site.

Florida Mouse (*Peromyscus floridanus*)

The Florida mouse is native to Florida and only occurs in the northern two-thirds of peninsular Florida and is state-listed as a species of special concern. They occupy fire-maintained, xeric upland habitats such as scrub, scrubby flatwoods, and sandhill ecosystems. The Florida mouse has one of the smallest geographic ranges of any species of North American mammals. Because the Florida mouse depends on gopher tortoise burrows as sites for excavation of its own burrows, this commensal species is highly vulnerable to loss or decline of gopher tortoises. The Florida mouse has been documented in Citrus County within 5 miles of the Project Site and has a moderate likelihood of occurrence on the CCC Site because of the presence of gopher tortoise habitat.

Florida Panther (*Puma concolor coryi*)

The Florida panther is a large, slender carnivore that lives in sizeable forested communities and wetlands in South and parts of Central Florida. Because large carnivores require spacious areas to roam, the Florida panther home ranges average 75 to 150 square miles. FWC estimates there are only 100 to 160 Florida panthers left in the wild, and they are protected under federal and state laws as a federally endangered species. Florida panthers were hunted to near extinction in the 1800s and early 1900s, and while genetic restoration efforts are underway, habitat loss and highway collisions

continue to be major threats to the panthers' continued existence. While there is some likelihood of occurrence within 5 miles of the CCC Site, their likelihood of presence on-Site is considered low.

Florida Pine Snake (*Pituophis melanoleucus mugitus*)

The Florida pine snake is a large, nonvenomous snake with dark brown or reddish blotches, typically ranging in length from 48 to 66 inches. Florida pine snakes occupy large areas of fire-maintained, open canopy and dry habitats that include sandhill, old fields, pastures, sand pine scrub, and scrubby flatwoods. In drought conditions the Florida pine snake will seek out open habitats surrounding wetlands. A commensal species, the Florida pine snake uses gopher tortoise burrows, pocket gopher burrows, and stump holes to forage, nest, and escape adverse weather conditions or fire, with 70 to 80 percent of their time being spent underground. Major threats to the Florida pine snake include road mortality, excessive collecting, and habitat loss, resulting in the species' serious decline.

The Florida pine snake is currently listed by FWC as a species of special concern but was recommended to be relisted as threatened by staff after a biological status review was conducted in 2009. When the management plan for this species is approved, the Florida pine snake listing status will become threatened under FWC rule. The Florida pine snake has a moderate likelihood of occurrence on the CCC Site.

Florida Sandhill Crane (*Grus canadensis pratensis*)

Florida sandhill cranes are a nonmigratory species that inhabit freshwater marshes, prairies, and pastures of Central and South Florida. The Florida sandhill crane is protected both by the U.S. Migratory Bird Treaty Act and as a state-designated threatened species by FWC. Threats to the sandhill cranes include degradation or loss of habitat due to wetland drainage and conversion of prairie for development or agricultural use. Known to occur in Citrus County, the Florida sandhill crane has a moderate likelihood of occurrence on the CCC Site.

Florida Scrub-Jay (*Aphelocoma coerulescens*)

The Florida scrub-jay is the only bird species that is unique to Florida. Scrub-jays inhabit sand pine and xeric oak scrub and scrubby flatwoods, old sand dunes along the coasts, and sandy deposits along rivers in the interior of the state. Scrub-jays prefer areas that contain large quantities of oak shrubs. Major threats to scrub-jays include habitat loss and fragmentation as well as fire suppression, which is essential to maintaining scrub-jay habitat. The Florida scrub-jay is protected by the U.S. Migratory Bird Treaty Act as well as being protected as a threatened species by the Federal Endangered Species Act and as a federally-designated threatened species by FWC. Because scrub habitat is lacking on the CCC Site, there is a low likelihood of the species presence on-Site.

Gopher Frog (*Rana capito*)

A commensal species, the gopher frog is known only in habitats that support gopher tortoises. While they occupy a variety of fire-maintained xeric habitats, particularly sandhill, the gopher frog can also be found in pastures and other open disturbed areas where gopher tortoises are found. Historically, the gopher frog has occurred throughout Florida except for the Everglades region. Because the habitat on the CCC Site is known to be conducive to gopher tortoises and their burrows, there is moderate likelihood that the gopher frog would also be found present.

The gopher frog is currently listed as a species of special concern by FWC; however, it was recommended to be delisted by staff after a biological status review was conducted in 2009. When the management plan for this species is approved, the gopher frog will be likely removed from FWC imperiled species lists.

Gopher Tortoise (*Gopherus polyphemus*)

The gopher tortoise is currently classified by FWC as a threatened species, its status having been elevated in 2007 from a Florida species of special concern. Gopher tortoises prefer dry upland habitats such as sandhills, scrub oak, xeric oak, and dry pine flatwoods, as well as disturbed sites such as pastures, old fields, and road shoulders. They are considered a keystone species due to the fact that they excavate burrows that serve as refuge for many other commensal species.

Gopher tortoises and burrow locations were documented on the CCC Site by ESI's fall 2013⁵ pedestrian surveys. Four active burrows were identified by ECT in spring 2014. Several listed species known to coexist in gopher tortoise burrows are considered likely to be found on-Site, including the eastern indigo snake, gopher frog, and Florida mouse.

Homosassa Shrew (*Sorex longirostris eionis*)

The Homosassa shrew is currently protected under FWC's designation of state species of special concern. This shrew has been reported to occur in a wide variety of habitats, including hardwood swamp/mixed wetland forest, hydric and xeric hammocks, industrial/commercial pineland, mixed hardwood-pine forest, natural pineland, and disturbed/transitional habitat ranging from North-Central to South-Central Florida. While known to occur in Citrus County (FNAI), the likelihood of Homosassa shrew presence on the CCC Site is considered low.

Threats to Homosassa shrew populations include human encroachment and degradation and fragmentation of their habitats from agriculture and development. Other

⁵ Environmental Services, Inc. (ESI). 2013. Wildlife Survey Report. Prepared for Duke Energy Florida, Inc.

threats include the increase of predators in their habitat, such as the introduction of domestic cats.

Red-Cockaded Woodpecker (*Picoides borealis*)

The red-cockaded woodpecker is listed as endangered by USFWS and threatened by FWC. This small, nonmigratory woodpecker has a black-and-white-barred back and wings, black cap and nape, and white cheek patches. Its preferred habitat in Florida is open, mature, longleaf pine flatwoods. It forages in forested community types with pines of various ages but only within a small radius from its nest. The red-cockaded woodpecker is a cooperative breeder and habitat specialist that excavates cavities in live, usually mature pine trees. Major threats to the success of the red-cockaded woodpecker include loss or fragmentation of specialized nesting habitat because of commercial silviculture practices. Because the CCC Site does not contain living, old-growth pine trees for cavity-tree clusters, the likelihood of red-cockaded woodpeckers to be found on-Site is considered low.

Sherman's Fox Squirrel (*Sciurus niger shermani*)

The Sherman's fox squirrel is a large, variably-colored rodent inhabiting open, fire-maintained longleaf pine, turkey oak, sandhills, and flatwoods habitats throughout Florida and southern Georgia. Their diet consists of longleaf pine seeds and turkey oak acorns, but they will also forage for fungi, fruit, and tender plant buds. Designated as a state species of special concern and protected by Florida's Endangered and Threatened Species Rule, the main threat to the Sherman's fox squirrel population is habitat loss. They are considered to have a moderate likelihood for occurrence on the CCC Site.

Short-Tailed Snake (*Lampropeltis extenuate*)

Short-tailed snakes are endemic to Florida and can primarily be found burrowed in sandy soils, particularly longleaf pine and xeric oak sandhills, and scrub and xeric hammock habitats from the Suwannee River south to Highlands County. These slender, smooth-scaled snakes prey on other snakes. The short-tailed snake is protected as a state-designated threatened species, and their greatest threat is habitat loss caused by destruction of xeric upland habitats. Adapted to digging and living underground, these snakes are seldom seen. They have a low likelihood of occurrence on the CCC Site.

Southeastern American Kestrel (*Falco sparverius paulus*)

The southeastern American kestrel is protected by the U.S. Migratory Bird Treaty Act and as a state-designated threatened species by FWC. The smallest species of the falcon family to occur in the United States, the southeastern American kestrel is a nonmigratory subspecies that inhabits Florida open woodlands, sandhill, and fire-maintained savannah pine habitats. Their diet consists of grasshoppers, lizards, spi-

ders, and frogs. They have a short life expectancy in the wild, averaging approximately 15 months. The main threats to the southeastern American kestrel are loss of habitat because of development and alteration and decline of fire-maintained pine habitats for nesting and foraging. Kestrels are also vulnerable to pollutants. While known to occur in Citrus County, the southeastern American kestrel has only a moderate likelihood of occurring on the CCC Site.

Wood Stork (*Mycteria americana*)

The wood stork is both federally and state-listed as an endangered species and is also protected by the U.S. Migratory Bird Treaty Act. These birds are large, long-legged, and white-bodied with black-edged wings. The adult birds have gray scaly skin on the upper neck and head instead of feathers. They nest in mixed colonies in tree islands surrounded by water in forested wetlands. Wood storks forage mainly on small fish, preferentially foraging in ditches or shallow marshes, where prey would be concentrated. Threats to wood stork population include fluctuations in hydrology, which affect the timing and success of nesting.

No known nesting colonies have been observed or have been recorded on the CCC Site based on field surveys and according to the Florida Waterbird Colony database. However, there is documentation of wood stork presence within 5 miles of the CCC Site (FNAI); for that reason, the likelihood of occurrence on-Site is considered high for foraging, because they typically feed great distances from colony sites and use any shallow wetlands and ditches. There is a lack of suitable nesting habitat on the CCC Site.

Other Wading Birds

Several species of wading birds, including the tricolored heron, white ibis, snowy egret, little blue heron, roseate spoonbill and limpkin, are known to occur in Citrus County wetland areas. These species are all classified by FWC as species of special concern and are locally common. These species are considered to have a high likelihood of occurrence for foraging on the Site, with the exception of the limpkin.

Aquatic Fauna

Although the CCC Site is located approximately 1.4 miles east of the Gulf of Mexico, federally- and state-listed threatened and endangered aquatic species potentially present in the vicinity of CREC were researched using FNAI's biodiversity matrix. Table B-3 includes species that have some potential to occur within 5 miles of the CCC Project Site, along with their federal and state listing status and habitat requirements. The following provides a discussion of the listed marine species in the area of CREC.

Sea Turtles

Five species of sea turtles may be found in the vicinity of the Site and associated off-site facilities. Four of these species have been observed at or near CREC: Kemp's rid-

ley (*Lepidochelys kempii*), green (*Chelonia mydas*), loggerhead (*Caretta caretta*), and hawksbill (*Eretmochelys imbricata*). The fifth is the leatherback (*Dermochelys coriacea*), which generally inhabits more pelagic waters and has not been observed near CREC. All five species are highly migratory, and none of the five species are considered likely to have individuals present year-round by the National Marine Fisheries Service (NMFS). There are no designated critical habitats for sea turtles in the vicinity of the Site or CREC.

Manatees

Members of the Florida subspecies of the West Indian manatee (*Trichechus manatus latirostris*) have historically inhabited the large natural springs in Crystal River and elsewhere on the west coast of Florida and are sometimes found in the canals at CREC. Crystal Bay, including the intake and discharge canals, is designated as a year-round Manatee Protection Zone under Section 68C-22.011, Florida Administrative Code (F.A.C.). Also, as shown in Figure 3.2.1-2, portions of Crystal River within 5 miles of the Site are designated as critical habitat for manatees because of the natural thermal effects of springs discharging into the river. The CREC cooling water discharge provides for a secondary thermal refuge for the local population but is not considered a primary refuge because of the presence of the springs (Florida Department of Environmental Protection [FDEP], 1995)⁶. FWC stated in 1999, “We do not believe a specific manatee protection plan condition requiring the Crystal River Power Plant to produce warm water during the winter is currently warranted” (FWC, 1999)⁷.

CREC’s Manatee Protection Plan (Florida Power Corporation [FPC], 2001, as amended)⁸ establishes various precautions to minimize hazards to manatees at the intake and outfall areas, such as inspections at the intakes and having observers on board vessels associated with in-water work, operating vessels at no-wake/idle speeds while in the warm water refuge area, and avoiding major in-water work in the discharge canal from November 15 through March 31 unless approved by FWC’s Bureau of Protected Species Management (BPSM). Appendix 10.6.6 contains a copy of the existing manatee protection plan.

Gulf Sturgeon

Gulf sturgeon forage on mud and sand bottoms along the eastern Gulf of Mexico and migrate up tidal rivers to spawn. There are no designated critical habitats for gulf

⁶ Florida Department of Environmental Protection (FDEP). 1995. Bureau of Protected Species Management Comments on Crystal River Florida Power Corporation NPDES Permit. Letter from Mary Duncan, Environmental Specialist III, to Wanda Parker-Garvin, Engineer III, Division of Water Facilities. December 7.

⁷ Florida Fish and Wildlife Conservation Commission (FWC). 1999. Letter from Bradley J. Hartman, Director, Office of Environmental Services, to Kent. D. Hedrick, P.E., Environmental Services Department. August 4.

⁸ Florida Power Corporation (FPC). 2001. FPC Crystal River Power Plant Secondary Warm Water Refuge Manatee Protection Plan. Revised June 22.

sturgeon in the vicinity of CREC. NMFS's 2002 biological opinion for CREC (NMFS, 2002)⁹ included consideration of potential effects from operation of the cooling water intakes on gulf sturgeon. The opinion considered it unlikely that gulf sturgeon would enter the rock-bottomed intake canals and thus be susceptible to impingement or entrainment. Together with this species' absence in impingement and entrainment sampling conducted at the intakes, NMFS concluded that the potential for impacts from the cooling water intakes was "discountable."

Although not included in Table B-3 as potentially occurring near the Site, the smalltooth sawfish (*Pristis pectinata*) was listed as endangered in the United States in 2003. Its habitat range in the United States was historically from North Carolina to Texas; however, its range is currently restricted to southwest Florida. The primary cause of the decline in this species is by-catch in commercial and recreational fisheries; of secondary importance is habitat loss and degradation along the coastline. The smalltooth sawfish's preferred habitat is shallow, coastal waters close to shore over muddy or sandy bottoms. Surveys conducted by NOAA fisheries show a high site fidelity for juveniles and indicate that shallow mudflats lined with mangroves may be important as nursery areas. These surveys supported the September 2009 designation of two critical habitat units in southwest Florida, including the Charlotte Harbor Estuary Unit (221,459 acres) and the Ten Thousand Islands/Everglades Unit (619,013 acres). While mature sawfish may potentially occur in the shallow areas of Crystal Bay during warmer seasons, it is believed that, similar to gulf sturgeon, it is unlikely they would enter the hard-bottom intake or discharge canals and potentially interact with the intake or discharge structures.

Avoidance of Impacts to Fish, Wildlife, and Listed Species

Wildlife Species

The most conspicuous faunal elements observed on the Site are birds. It is unlikely that Site preparation and construction activities will affect regional populations of any bird species. This is due to the fact birds are highly mobile, and similar or better quality habitats are available on the remainder of the Site and in the nearby environs. Although no longer listed, the active bald eagle nest on-Site is located well away from proposed construction activities and falls outside the recommended USFWS/FWC buffer of 660 ft for construction activities.

It is unlikely that Project clearing/construction would impact most of the mammal species found on-Site. The better quality habitats on the Site will not be affected by clearing or construction activities. Certain reptiles and amphibians are not likely to be

⁹ National Marine Fisheries Service (NMFS). 2002. Endangered Species Act, Section 7 Consultation Biological Opinion. Cooling water intake system at Crystal River Energy Complex (F/SER/2001/01080). National Oceanic and Atmospheric Administration, Southeast Regional Office, St. Petersburg, FL. August 8.

affected by the Project construction, because no aquatic habitats will be impacted. Certain less-motile species may be lost during construction but should repopulate suitable remaining habitats after construction. Also, populations of these animals are expected to be minimal in the affected habitats.

Listed Species

Flora

A few populations of state-endangered coastal vervain have been observed along the roadside in the northeastern portion of the Site. Potential impacts associated with construction of the facilities may result in damage or mortality of these plants. However, coastal vervain is known to colonize in open and disturbed sites such as roadsides; therefore, there is a possibility for it to recolonize the areas that are left for revegetation after construction or to establish on the western part of the Site that will be left undisturbed. The CCC Site is owned by DEF; thus, no permitting process for this plant species is required by USFWS.

Fauna

Power plant construction is not expected to significantly impact regional populations of any endangered, threatened, or of special concern species. Of the 39 listed wildlife species confirmed as possibly occurring in Citrus County, only two of those species were confirmed on-Site in surveys conducted in 2013 and 2014: eastern indigo snake and gopher tortoise. The state-listed gopher tortoise does occur in areas scheduled for power plant construction, and, as such, DEF will comply with current FWC gopher tortoise permitting and relocation rules prior to commencing construction. DEF will also comply with USFWS's protection measures for the federally endangered eastern indigo snake (USFWS, 2013)¹⁰. This will include education and instruction to construction workers, placement of educational signage, and the allowance of the snakes to leave the area unharmed if discovered on-Site.

The bald eagle nest, located in the southwestern portion of the CCC Site, will not be affected by proposed development activities. The nest is more than 0.25 mile away from the Project footprint. The construction activities will also be well beyond the currently recommended FWC and USFWS buffers of 330 to 660 ft. In addition, the CCC Project's construction will not reduce any of the eagle's on-Site foraging habitats.

While other listed species may occur in or use the areas to be impacted, these areas do not represent valuable wildlife habitats. Better habitats exist elsewhere on the western half of the Site (which will remain undisturbed) and certainly in the region.

¹⁰ U.S. Fish & Wildlife Service (USFWS). 2013. Standard Protection Measures for the Eastern Indigo Snake. North Florida Ecological Services Office. August 12. Site accessed June 2014.
<http://www.fws.gov/northflorida/indigosnakes/20130812_Eastern_indigo_snake_Standard_Protection_Measures.htm>

Therefore, no significant impacts are expected to occur to regional populations of any listed species.

Attachment C. Public Interest Test

To determine if a project is in the public interest, one undertakes a balancing of seven factors. The Citrus Combined Cycle (CCC) Project is clearly in the public interest, and the seven criteria are discussed in this attachment. For additional discussion, please see Section C of the Joint Application.

First, the CCC Project will not adversely affect the public health, safety, or welfare or the property of others. By building the CCC Project, Duke Energy, Florida, Inc. (DEF), will improve these factors by meeting the public need for additional generating capacity that will: (1) maintain system reliability and integrity, (2) continue to provide adequate electricity at a reasonable cost, and (3) ensure appropriate natural gas fuel supply diversity in DEF's supply-side resource mix.

In addition to providing safe, clean, and reliable power to DEF's customers, as currently planned, certification of the proposed CCC Project would allow DEF to retire Crystal River coal-fired Units 1 and 2 in 2018, in coordination with CCC Project commercial operations. The location of the Site adjacent to the existing Crystal River Energy Complex (CREC) will allow DEF to minimize impacts through use of existing infrastructure, including the existing Crystal River Unit 3 intake structure, CREC intake and discharge canals, access roads, transmission lines, and water wells.

The CCC Project will also provide benefits to Citrus County and the state of Florida in terms of employment and revenues during construction and operation. Major positive impacts will result from increases in the local economy to support Project construction and operation. The addition of jobs during construction, an increased property tax base, and the purchase of various goods and services will all provide the opportunity for significant positive benefits within the local community. For all of the reasons stated in these paragraphs, the CCC Project will be an overall benefit to the public health, safety, or welfare or the property of others.

Second, the CCC Project will not adversely affect the conservation of fish and wildlife, including endangered or threatened species, or their habitats. Wildlife resources in the Project area were evaluated through a literature review, a Site visit in 2013, and additional field visits in 2014. The vast majority of wildlife on the Site is common species rather than threatened or endangered species. However, several listed species are known to occur in the vicinity of the Project area, and the Site has the potential to provide habitat for additional listed species. The western half of the Site, which is not proposed to be impacted, provides a higher quality of habitat for various wildlife species than the eastern half to be impacted, which provides lower quality habitat. Construction will occur beyond the 660-foot buffer around the existing eagle's nest,

and so neither the bald eagle nor any other birds are expected to be impacted due to their mobile nature.

No aquatic resources are expected to be impacted, including manatees and sea turtles. The CCC Project's use of combined cycle generation and closed-cycle cooling substantially reduces water demand and thermal loading to the environment. Surface water intake will be reduced by 93 percent relative to similar steam electric generating plants that use open-cycle cooling. The operation of the CCC Project, in combination with the retirement of Crystal River Unit 3 in 2013 and the planned retirement of Crystal River Units 1 and 2 in conjunction with the CCC Project becoming operational, will result in a net benefit to aquatic resources through reductions in cooling water use and thermal loading.

Nearby areas provide much higher quality habitat for species than the CCC Project area; this factor, in addition to the discussion in the previous paragraphs, supports the conclusion that fish and wildlife and their habitats will not be adversely affected by the proposed Project.

Third, the CCC Project will not adversely affect navigation or the flow of water or cause harmful erosion or shoaling. The flow of water will be improved as the CCC Project will utilize the existing intake canal to withdraw cooling tower makeup water. The intake canal historically supplied water to Crystal River Units 1, 2, and 3, of which Unit 3 is no longer operational and the remaining two units will be retired in coordination with the CCC Project. Therefore, the flow rates from the CCC Project will be lower than the prior units. No adverse impacts to erosion or shoaling are anticipated. The only work associated with the Project with any potential to impact navigation or to cause erosion or shoaling is the in-water work associated with construction of the new discharge structure. This work, however, will be of temporary duration and will be along the edge of the canal at the extreme eastern end. Further, the discharge canal is closed to all public access. Therefore, the Project will not impact navigation. Best management practices (BMPs) will be implemented during the construction of the new discharge structure to prevent erosion and shoaling.

Fourth, the CCC Project will not adversely affect the fishing or recreational values or marine productivity in the vicinity of the activity. The CCC Project crosses no marine or estuarine environments, so fisheries and recreation will not be directly impacted by the Project. The discharge structure will be constructed at the east terminus of the existing discharge canal. There are no fishing or recreational activities within the canal, because the canal is located in the existing CREC beyond the controlled access point. Special construction techniques and BMPs will be used when constructing the discharge structure to minimize any adverse effects on fish. DEF will comply with the best technology available (BTA) standards for both impingement and entrainment for the new CCC Project units through its incorporation of a closed-cycle recirculating cooling system (40 CFR § 125.94(e)(1)).

Fifth, the CCC Project will be of a permanent nature.

Sixth, the CCC Project will not adversely affect significant historical and archaeological resources under the provisions of section 267.061, Florida Statutes. DEF has hired a reputable cultural resources firm that has coordinated an extensive search of available records and field surveys of the CCC Site and the associated linear facility corridor. Based on the cultural resources assessment survey conducted for the Site in May 2014, the construction and operation of the CCC Project is not expected to disturb any archaeological or historical features eligible for the National Register of Historic Places. The Project is not anticipated to have adverse impacts on archaeological or historical resources. A copy of the report has been provided to the Florida Department of State, Division of Historical Resources (DHR). If unanticipated historical or archaeological artifacts or features are discovered at any time, DEF will notify DHR and consult with them to determine any appropriate action to take.

Seventh, the CCC Project will maintain the current condition and relative value of the functions being performed by the Project area. DEF has avoided and minimized impacts to wetlands by focusing the impacts of construction and operation of the Project on the eastern half of the 400-acre Site, thus avoiding impacts to the majority of wetlands on the Site. The entire 400-acre Site is currently permitted for limestone mining. Therefore, construction and operation of the CCC Project will result in substantially fewer on-Site impacts compared to mining on the Site.

All impacts—including temporary impacts and impacts associated with conversion of forested systems to shrub and herbaceous systems—to wetlands and other surface waters on the CCC Project Site and along associated linear facilities will be properly and fully mitigated. DEF will employ BMPs and a sediment control plan to minimize water quality impacts.

ATTACHMENT D

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 1, 21, 30, 31, 32, 48, 49, 53, 79	
FLUCCs code 617		Further classification (optional) FDEP: 617 FNAI: Floodplain Swamp/Basin Swamp SCS: 21-Hardwoods		Impact or Mitigation Site?	
				Assessment Area Size 1=2.31 32=0.36 49=0.22 21=0.56 43=0.88 53=0.01 30=0.38 45=3.44 79=0.13 31=0.12 48=0.05	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Forested wetland systems					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Vertical heterogeneity (3-4 strata); wading bird feeding, roosting, nesting; macro invertebrate habitat; small-medium-large mammal habitat (cover, food, dens); amphibian/reptile cover, breeding, and feeding. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, raccoon, gray & flying squirrels, otter, gray fox, white-tailed deer, bobcat. <u>BIRDS</u> : downy, hairy and pileated woodpeckers, wood duck, turkey, chickadee, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk. <u>REPTILES</u> : green anole, chicken & box turtles, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator. <u>AMPHIBIANS</u> : cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) American alligator (FT, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (FE, foraging, roosting, seasonal), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Passerine bird calls					
Additional relevant factors:					
Assessment conducted by: AGS EN			Assessment date(s): 06/09/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 1, 21, 30, 31, 32, 48, 49, 53, 79
Impact or Mitigation	Assessment conducted by: AGS EN	Assessment date: 06/09/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current with 6	The wetland is surrounded by a forested upland, having all three strata: tree, shrub, and herbaceous, providing cover, nesting/denning, and forage for passerines and small animals. A road is located in close proximity to the wetland. Other than roads,mining and existing power plant activities in the greater vicinity, no impediment to wildlife movement.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 6	Hydroperiod somewhat diminished at time of survey. Understory has unusually high number of cabbage palm indicating dewatering. Appears to have some hydroperiod to support viable fish and wildlife populations.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 7	Wetland supports a moderate diversity of wetland plant species. Canopy species healthy and appropriate. Understory has a higher number of cabbage palm than normal. Ground cover species low in number.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.63	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 2-4, 7-9, 11, 12, 16, 19, 36, 54, 57, 58, 74-77	
FLUCCs code 617	Further classification (optional) FDEP: 617 FNAI: Floodplain Swamp/Basin Swamp SCS: 21-Hardwoods		Impact or Mitigation Site?	Assessment Area Size 2=0.27 11=0.26 57=0.2 3=0.07 12=0.27 58=0.13 4=0.68 16=0.83 74=0.1 7=0.15 19=0.03 75=0.08 8=0.12 36=0.08 76=0.04 9=0.06 54=0.01 77=0.1	
Basin/Watershed Name/Number Crystal River	Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)		
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Isolated forested wetland surrounded by cut over pine/cabbage palm plantation; adjacent properties used for surface mining and energy production					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Vertical heterogeneity (3-4 strata); wading bird feeding, roosting, nesting; macro invertebrate habitat; small-medium-large mammal habitat (cover, food, dens); amphibian/reptile cover, breeding, and feeding. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, raccoon, gray & flying squirrels, otter, gray fox, white-tailed deer, bobcat. <u>BIRDS</u> : downy, hairy and pileated woodpeckers, wood duck, turkey, chickadee, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk. <u>REPTILES</u> : green anole, chicken & box turtles, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator. <u>AMPHIBIANS</u> : cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) American alligator (FT, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (FE, foraging, roosting, seasonal), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Passerine bird calls					
Additional relevant factors:					
Assessment conducted by: AGS EN			Assessment date(s): 06/09/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 2-4, 7-9, 11, 12, 16, 19, 36, 54, 57, 58, 74-77
Impact or Mitigation	Assessment conducted by: AGS EN	Assessment date: 06/09/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current 7 with	Wetland surrounded by regenerating forest, having all three strata: tree, shrub, and herbaceous; providing cover, nesting/denning, and forage for passerines and small animals. Other than roads,mining and existing power plant activities in the greater vicinity, no impediment to wildlife movement.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 5 with	Hydrology is impacted by past silvicultural activities, with significant furrowing through the wetland, but still able to support wetland species. Persimmon is present throughout the wetland; evidence of dewatering.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 6 with	Species diversity is lower than optimal. Invasion of upland species due to furrowing. Native species. Canopy cover is somewhat sparce.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres 0.60	with

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc, CCC Project		Application Number		Assessment Area Name or Number 6, 46, 47, 52, 62, 65, 71, 72	
FLUCCs code 631	Further classification (optional) FDEP: 631 FNAI: Bog, Slough SCS: 22-Shrub Bogs/Bay Swamps		Impact or Mitigation Site?	Assessment Area Size 6=0.21 62=0 46=0.25 65=0.04 47=0.12 71=0 52=0.03 72=0.18	
Basin/Watershed Name/Number Crystal River	Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)		
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Small, Isolated wetland systems					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Macroinvertebrate habitat; wading bird feeding, roosting; small-medium-large mammal habitat; amphibian breeding, cover; vertical heterogeneity (3-4 strata); turtle/snake/lizard breeding; cover; and food. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, southeastern shrew, short-tailed shrew, marsh rabbit gray squirrel, raccoon, bobcat, and deer. <u>BIRDS</u> : wood duck, turkey, great horned owl, barred owl, pileated woodpecker, yellow warbler, red-shouldered hawk, yellow-bellied sapsucker. <u>REPTILES</u> : striped mud turtle, rat snake, ring neck snake, cottonmouth moccasin. <u>AMPHIBIANS</u> : southern dusky salamander, cricket frog.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Little blue heron (SSC, foraging, roosting, incidental), snowy egret (SSC, foraging, roosting, incidental), and tricolored heron (SSC, foraging, roosting, incidental).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Frogs, passerine bird calls.					
Additional relevant factors:					
Assessment conducted by: AGS EN			Assessment date(s): 06/09/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc, CCC Project	Application Number	Assessment Area Name or Number 6, 46, 47, 52, 62, 65, 71, 72
Impact or Mitigation	Assessment conducted by: AGS EN	Assessment date: 06/09/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current 6 with	Isolated shrub wetlands surrounded by regenerating forest, from past pine plantation. Adjacent properties are used for surface mining and energy production. Wildlife have cover, forage, and other resources, but also noise disturbance from nearby roads.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 6 with	The wetlands have furrowing from past silvicultural activities and receive surface water from abutting lands, which may increase the pulse and hydroperiod. Area supports obligate species.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 7 with	The wetland areas are small and compressed mostly of shrub species like buttonbush. Community is native and has an herbaceous component: <i>Saccharum giganteum</i> , <i>Rhynchospora cobriata</i> , <i>Rhynchospora nuciocarpa</i> , among other species.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres 0.63	with

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 5, 10, 18, 59, 64, 70, 73	
FLUCCs code 631		Further classification (optional) FDEP: 631 FNAL: Bog, Slough SCS: 22-Shrub Bogs/Bay Swamps		Impact or Mitigation Site?	
				Assessment Area Size 5=0.05 64=0 10=0.02 70=0 18=0.05 73=0.08 59=0	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Small, sparsely vegetated wetland areas.					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Macroinvertebrate habitat; wading bird feeding, roosting; small-medium-large mammal habitat; amphibian breeding, cover; vertical heterogeneity (3-4 strata); turtle/snake/lizard breeding; cover; and food. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, southeastern shrew, short-tailed shrew, marsh rabbit gray squirrel, raccoon, bobcat, and deer. <u>BIRDS</u> : wood duck, turkey, great horned owl, barred owl, pileated woodpecker, yellow warbler, red-shouldered hawk, yellow-bellied sapsucker. <u>REPTILES</u> : striped mud turtle, rat snake, ring neck snake, cottonmouth moccasin. <u>AMPHIBIANS</u> : southern dusky salamander, cricket frog.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Little blue heron (SSC, foraging, roosting, incidental), snowy egret (SSC, foraging, roosting, incidental), and tricolored heron (SSC, foraging, roosting, incidental).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): None observed. Probably used by frogs and other amphibians.					
Additional relevant factors:					
Assessment conducted by: CEV			Assessment date(s): 06/09/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 5, 10, 18, 59, 64, 70, 73
Impact or Mitigation	Assessment conducted by: CEV	Assessment date: 06/09/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current ☐ 7 ☐ with	The wetland is surrounded by regenerating forest, having all three strata: tree, shrub, and herbaceous, providing cover, nesting/denning, and forage for passerines and small animals. Other than roads,mining and existing power plant activities in the greater vicinity there are no impediments to wildlife movement.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current ☐ 6 ☐ with	Area appears to be a small depression but is sufficiently stable to support wetland species. Wetland appears to drain through the bedrock and contributes to groundwater.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current ☐ 6 ☐ with	Community structure is generally healthy and in good condition, lacking exotics, but has low diversity.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres ☐ 0.63 ☐ with

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 23, 38, 39, 50	
FLUCCs code 630		Further classification (optional) FDEP: 630 FNAI: Floodplain Swamp/Basin Swamp SCS: None		Impact or Mitigation Site?	
				Assessment Area Size 23=4.28 39=1.16 38=8.93 50=1.78	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Forested wetlands located near roads, but immediately surrounded by mature forests.					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Vertical heterogeneity (3-4 strata); wading bird feeding, roosting, nesting; macroinvertebrate habitat; small-medium-large mammal habitat (cover, food, dens); amphibian/reptile cover, breeding, and feeding. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : Bobcat, deer, gray squirrel, otter, raccoon, opossum flying squirrel, gray fox, white-tailed deer. <u>BIRDS</u> : barred owl, pileated woodpecker, turkey, wood duck, chickadee, titmouse, yellow-billed cuckoo, chicken turtle, limpkin, Carolina wren, red-shouldered hawk, ruby-throated hummingbird, hermit thrush, yellow-throated warbler, hairy woodpecker, yellow-crowned night heron, and cardinal. <u>REPTILES</u> : five-lined skink, box turtle, ring neck snake, gray rate snake, eastern king snake, cottonmouth.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Bald eagle, American alligator, limpkin, wood stork, tricolored heron, snowy egret, little blue heron, and eastern indigo snake.		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):					
Additional relevant factors:					
Assessment conducted by: MRS AGS			Assessment date(s): 06/11/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 23, 38, 39, 50
Impact or Mitigation	Assessment conducted by: MRS AGS	Assessment date: 06/11/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current 6 with	The wetland is surrounded by mature hardwood forest, having a well developed strata: tree, shrub, and herbaceous, which provides cover, nesting/denning, and forage for passerines and small animals. A road is located in close proximity to the wetland. Other than roads,mining and existing power plant activities in the greater vicinity, no impediment to wildlife movement.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 8 with	Hydrology supports wetland plant species in all three strata. Water levels and indicators are present, distinct and consistent.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 8 with	Age and distribution is typical of mixed hardwood swamp. All three strata have appropriate/desirable plant species. Diversity is slightly lower than optimal.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres 0.73 with

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida CCC Project		Application Number		Assessment Area Name or Number 22, 24, 25, 26, 27, 51	
FLUCCs code 617		Further classification (optional) FDEP: 617 FNAI: Floodplain Swamp/Basin Swamp SCS: 21-Hardwoods		Impact or Mitigation Site?	
				Assessment Area Size 22=0.40 26=0 09 24=0.02 27=2 93 25=0.12 51=0 04	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Isolated wetlands surrounded by forested uplands.					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Vertical heterogeneity (3-4 strata); wading bird feeding, roosting, nesting; macro invertebrate habitat; small-medium-large mammal habitat (cover, food, dens); amphibian/reptile cover, breeding, and feeding. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, raccoon, gray & flying squirrels, otter, gray fox, white-tailed deer, bobcat. <u>BIRDS</u> : downy, hairy and pileated woodpeckers, wood duck, turkey, chickadee, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk. <u>REPTILES</u> : green anole, chicken & box turtles, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator. <u>AMPHIBIANS</u> : cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) American alligator (FT, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (FE, foraging, roosting, seasonal), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Tree frog calls, passerine birds					
Additional relevant factors:					
Assessment conducted by: CEV EN			Assessment date(s): 06/11/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida CCC Project	Application Number	Assessment Area Name or Number 22, 24, 25, 26, 27, 51
Impact or Mitigation	Assessment conducted by: CEV EN	Assessment date: 06/11/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current 7 with	The wetland is surrounded by a mature forested upland, having all three strata: tree, shrub, and herbaceous; thus providing cover, nesting/denning, and forage for passerines and small animals. Other than roads,mining and existing power plant activities in the greater vicinity,there is no impediment to wildlife movement.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 7 with	The water environment supports a diversity of hydric plant species. Hydrologic indicators are evident throughout. Wetland is saturated to inundated on a seasonal basis.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 6 with	Canopy is dominated by laural oaks. All three strata have appropriate/desirable plant species, although community diversity is low.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres 0.67	with

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 20, 28, 29, 33, 34, 35, 37, 40, 41, 42, 43, 44, 45	
FLUCCs code 617		Further classification (optional) FDEP: 617 FNAI: Floodplain Swamp/Basin Swamp SCS: 21-Hardwoods		Impact or Mitigation Site?	
				Assessment Area Size 20=0 01 34=1 91 41=1 01 28=0 07 35=2.05 42=1.27 29=0 05 37=0.06 44=0.32	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Isolated wetlands surrounded by forested uplands.					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Vertical heterogeneity (3-4 strata); wading bird feeding, roosting, nesting; macro invertebrate habitat; small-medium-large mammal habitat (cover, food, dens); amphibian/reptile cover, breeding, and feeding. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, raccoon, gray & flying squirrels, otter, gray fox, white-tailed deer, bobcat. <u>BIRDS</u> : downy, hairy and pileated woodpeckers, wood duck, turkey, chickadee, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk. <u>REPTILES</u> : green anole, chicken & box turtles, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator. <u>AMPHIBIANS</u> : cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) American alligator (FT, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (FE, foraging, roosting, seasonal), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Tree frog calls, passerine birds					
Additional relevant factors:					
Assessment conducted by: CEV EN			Assessment date(s): 06/11/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 20, 28, 29, 33, 34, 35, 37, 40, 41, 42, 43, 44, 45
Impact or Mitigation	Assessment conducted by: CEV EN	Assessment date: 06/11/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current 7 with	The wetland is surrounded by a forested upland, having all three strata: tree, shrub, and herbaceous; thus providing cover, nesting/denning, and forage for passerines and small animals. Other than roads,mining and existing power plant activities in the greater vicinity,there is no impediment to wildlife movement.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 7 with	The water environment supports a diversity of hydric plant species. Water lines and hummocking are evident throughout. Wetland is saturated to inundated on a seasonal basis. Water lines on trees in some wetland areas indicate 12+ inundation. (Approximately 6 inches in isolated puddles at time of inspection.)
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 7 with	Age and distr bution is typical of mixed hardwood swamp. All three strata have appropriate/desirable plant species. Diversity is slightly lower than expected for a mature community.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.70	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 13, 55	
FLUCCs code 617		Further classification (optional) FDEP: 617 FNAI: Floodplain Swamp/Basin Swamp SCS: 21-Hardwoods		Impact or Mitigation Site?	
				Assessment Area Size 13 = 0.02 55 = 0.07	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Vertical heterogeneity (3-4 strata); wading bird feeding, roosting, nesting; macro invertebrate habitat; small-medium-large mammal habitat (cover, food, dens); amphibian/reptile cover, breeding, and feeding. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, raccoon, gray & flying squirrels, otter, gray fox, white-tailed deer, bobcat. <u>BIRDS</u> : downy, hairy and pileated woodpeckers, wood duck, turkey, chickadee, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk. <u>REPTILES</u> : green anole, chicken & box turtles, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator. <u>AMPHIBIANS</u> : cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) American alligator (FT, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (FE, foraging, roosting, seasonal), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Carolina wren					
Additional relevant factors:					
Assessment conducted by: MRS			Assessment date(s): 06/09/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 13, 55
Impact or Mitigation	Assessment conducted by: MRS	Assessment date: 06/09/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current with 7	The wetland provides moderate support to wildlife, other than roads,mining and existing power plant activities in the greater vicinity, no impediment to wildlife movement in the immediate vicinity. Some indistinct road noise can be heard.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 6	Hydrology is somewhat impactd by postsilvicultural activities (furrowing is evident), but able to support wetland species.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 7	Majority of plant species are appropriate and desirable, with minimal exotics/nuisance vegetation (<i>Mikania scandens</i>). Offers a diversity of plant species, and has large boulders to provide denning for small animals.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.67	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 14	
FLUCCs code 617		Further classification (optional) FDEP: 617 FNAI: Floodplain Swamp/Basin Swamp SCS: 21-Hardwoods		Impact or Mitigation Site? Assessment Area Size 0.03	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Area has a few willows and wax myrtles with a ground cover of wetland sedges and forbs.					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Vertical heterogeneity (3-4 strata); wading bird feeding, roosting, nesting; macro invertebrate habitat; small-medium-large mammal habitat (cover, food, dens); amphibian/reptile cover, breeding, and feeding. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, raccoon, gray & flying squirrels, otter, gray fox, white-tailed deer, bobcat. <u>BIRDS</u> : downy, hairy and pileated woodpeckers, wood duck, turkey, chickadee, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk. <u>REPTILES</u> : green anole, chicken & box turtles, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator. <u>AMPHIBIANS</u> : cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) American alligator (FT, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (FE, foraging, roosting, seasonal), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):					
Additional relevant factors:					
Assessment conducted by: CEV MRS			Assessment date(s): 06/10/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 14
Impact or Mitigation	Assessment conducted by: CEV MRS	Assessment date: 06/10/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current with 7	Area is surrounded by regenerating forest following clearing for logging. Area has dense shrub/sapling layers that provide cover and other resources for passerines and other small animals. Area drains through the soils and contr butes to groundwater.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 6	Area is a small depressions that stands with water during seasonal rainfall. Evidence of past silvicultural activities (furrowing) through the wetland.Supports wetland species.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 6	Area has some shrub and tree cover and has recruited native wetland sedges, grasses, and forbs, yet diversity is low. Brush pile (dead fall) provides cover for small animals.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.63	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 15	
FLUCCs code 617		Further classification (optional) FDEP: 617 FNAI: Floodplain Swamp/Basin Swamp SCS: 21-Hardwoods		Impact or Mitigation Site? Assessment Area Size 34	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Vertical heterogeneity (3-4 strata); wading bird feeding, roosting, nesting; macro invertebrate habitat; small-medium-large mammal habitat (cover, food, dens); amphibian/reptile cover, breeding, and feeding. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, raccoon, gray & flying squirrels, otter, gray fox, white-tailed deer, bobcat. <u>BIRDS</u> : downy, hairy and pileated woodpeckers, wood duck, turkey, chickadee, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk. <u>REPTILES</u> : green anole, chicken & box turtles, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator. <u>AMPHIBIANS</u> : cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) American alligator (FT, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (FE, foraging, roosting, seasonal), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):					
Additional relevant factors:					
Assessment conducted by: MRS			Assessment date(s): 06/10/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 15
Impact or Mitigation	Assessment conducted by: MRS	Assessment date: 06/10/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current 7 with	The wetland is surrounded by regenerating forest, having all three strata: tree, shrub, and herbaceous; thus providing adequate cover, nesting/denning, and forage for passerines and small animals. Other than roads,mining and existing power plant activities in the greater vicinity, no impediment to wildlife movement.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 7 with	The water environment supports a diversity of hydric plant species. Water lines and humocking are evident throughout. Some effects of past silvicultural activieis (furlowing) are evident.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 6 with	Supports a moderate diversity of wetland plant species. Has a healthy herbaceous component. The canopy is of low diversity, consisting mostly of laurel oak.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres 0.67 with

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 17	
FLUCCs code 617		Further classification (optional) FDEP: 617 FNAI: Floodplain Swamp/Basin Swamp SCS: 21-Hardwoods		Impact or Mitigation Site? Assessment Area Size 3.76	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Area is a mixed hardwood swamp with moderate diversity					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Vertical heterogeneity (3-4 strata); wading bird feeding, roosting, nesting; macro invertebrate habitat; small-medium-large mammal habitat (cover, food, dens); amphibian/reptile cover, breeding, and feeding. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, raccoon, gray & flying squirrels, otter, gray fox, white-tailed deer, bobcat. <u>BIRDS</u> : downy, hairy and pileated woodpeckers, wood duck, turkey, chickadee, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk. <u>REPTILES</u> : green anole, chicken & box turtles, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator. <u>AMPHIBIANS</u> : cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) American alligator (FT, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (FE, foraging, roosting, seasonal), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Frog calls, passerines, small fish					
Additional relevant factors: 					
Assessment conducted by: CEV			Assessment date(s): 06/11/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 17
Impact or Mitigation	Assessment conducted by: CEV	Assessment date: 06/11/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current with 6	Area is situated in a mature forest system with upland and swamp forests in proximity, but a heavy-haul road abuts the south end. Wildlife have considerable resources. Wetyland probably contr butes some benefits to downstream areas, but culverts and ditching may detract from benefits.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 7	Surface water at least 1 foot deep in central portion. Hydroperiod reduced by connection to roadside ditch on the south side. Water marks indicate periods of high water. Karst solution channels connect to groundwater.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 7	Wetland supports a moderate diversity of wetland plant species. Plant species are generally healthy, appropriate and native. Canopy mature and diverse. Ground cover slightly lacking in diversity.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres with
0.67

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 56	
FLUCCs code 631		Further classification (optional) FDEP: 631 FNAI: Bog, Slough SCS: 22-Shrub Bogs/Bay Swamps		Impact or Mitigation Site? Assessment Area Size 0.04	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Area is regenerating from previous clearing.					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Macroinvertebrate habitat; wading bird feeding, roosting; small-medium-large mammal habitat; amphibian breeding, cover; vertical heterogeneity (3-4 strata); turtle/snake/lizard breeding; cover; and food. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, southeastern shrew, short-tailed shrew, marsh rabbit gray squirrel, raccoon, bobcat, and deer. <u>BIRDS</u> : wood duck, turkey, great horned owl, barred owl, pileated woodpecker, yellow warbler, red-shouldered hawk, yellow-bellied sapsucker. <u>REPTILES</u> : striped mud turtle, rat snake, ring neck snake, cottonmouth moccasin. <u>AMPHIBIANS</u> : southern dusky salamander, cricket frog.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Little blue heron (SSC, foraging, roosting, incidental), snowy egret (SSC, foraging, roosting, incidental), and tricolored heron (SSC, foraging, roosting, incidental).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Eastern towhee, white-eyed vireo, unidentified warblers, greater flycatcher, small game trails.					
Additional relevant factors: 					
Assessment conducted by: CEV			Assessment date(s): 06/09/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 56
Impact or Mitigation	Assessment conducted by: CEV	Assessment date: 06/09/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current 7 with	Area is surrounded by regenerating forest with considerable tree, shrub, and herbaceous zonation, which provides cover, nesting/denning, and forage for passerines and small animals. Other than roads,mining and existing power plant activities in the greater vicinity,there is no impediment to wildlife movement.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 6 with	Area is moist to wet and apparently sits over a karst with a high water table. Water level in solution hole approximately 34 inches below grade. Area supports a mix of FACW and obligates. Some effects of past silvicultural activieis (furrowing) are evident.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 7 with	Area is regenerating from clearing and has thickets of trees/shrubs and open herbaceous areas. Although poorly defined, zonation provides micro-habitats and is composed of native species.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres 0.67 with

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 60	
FLUCCs code 617		Further classification (optional) FDEP: 617 FNAI: Floodplain Swamp/Basin Swamp SCS: 21-Hardwoods		Impact or Mitigation Site? Assessment Area Size 0.02	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Sparsely vegetated wetland area					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Vertical heterogeneity (3-4 strata); wading bird feeding, roosting, nesting; macro invertebrate habitat; small-medium-large mammal habitat (cover, food, dens); amphibian/reptile cover, breeding, and feeding. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, raccoon, gray & flying squirrels, otter, gray fox, white-tailed deer, bobcat. <u>BIRDS</u> : downy, hairy and pileated woodpeckers, wood duck, turkey, chickadee, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk. <u>REPTILES</u> : green anole, chicken & box turtles, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator. <u>AMPHIBIANS</u> : cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) American alligator (FT, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (FE, foraging, roosting, seasonal), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Deer tracks					
Additional relevant factors: 					
Assessment conducted by: CEV			Assessment date(s): 06/09/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 60
Impact or Mitigation	Assessment conducted by: CEV	Assessment date: 06/09/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current 7 with	Area is surrounded by regenerating forest, which provides cover, nesting/denning, and foreage opportunities for passerines and small animals. No artificial barriers to wildlife movement in the immediate vicinity. Roads,mining and existing power plant activities in the greater vicinity impede wildlife movement.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 5 with	Water pools to area and stands enough to support a marginal wetland community.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 5 with	Area has sparse cover, probably due to shading. Native vegetation community, but of very low diversity.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres 0.57 with

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 61	
FLUCCs code 631		Further classification (optional) FDEP: 631 FNAI: Bog, Slough SCS: 22-Shrub Bogs/Bay Swamps		Impact or Mitigation Site? Assessment Area Size 0.14	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Macroinvertebrate habitat; wading bird feeding, roosting; small-medium-large mammal habitat; amphibian breeding, cover; vertical heterogeneity (3-4 strata); turtle/snake/lizard breeding; cover; and food. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, southeastern shrew, short-tailed shrew, marsh rabbit gray squirrel, raccoon, bobcat, and deer. <u>BIRDS</u> : wood duck, turkey, great horned owl, barred owl, pileated woodpecker, yellow warbler, red-shouldered hawk, yellow-bellied sapsucker. <u>REPTILES</u> : striped mud turtle, rat snake, ring neck snake, cottonmouth moccasin. <u>AMPHIBIANS</u> : southern dusky salamander, cricket frog.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Little blue heron (SSC, foraging, roosting, incidental), snowy egret (SSC, foraging, roosting, incidental), and tricolored heron (SSC, foraging, roosting, incidental).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Rufus-sided towhee, tufted titmouse and fence lizard.					
Additional relevant factors:					
Assessment conducted by: MRS			Assessment date(s): 06/09/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 61
Impact or Mitigation	Assessment conducted by: MRS	Assessment date: 06/09/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support The wetland and surrounding area provide moderate support to wildlife. No artificial barriers to wildlife movement in the immediate vicinity. Roads,mining and existing power plant activities in the greater vicinity impede wildlife movement. w/o pres or current with 7	
.500(6)(b)Water Environment (n/a for uplands) Hydrology is impacted by past silvicultural activities, with significant furrowing through the wetland, but still able to support wetland species. Percimmon is present throughout the wetland; evidence of dewatering. w/o pres or current with 5	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community Species diversity is lower than optimal. Invasion of upland species due to furrowing, lacking defined zonation (button bush scattered throughout different zones). w/o pres or current with 6	

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.60	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 63	
FLUCCs code 617		Further classification (optional) FDEP: 617 FNAI: Floodplain Swamp/Basin Swamp SCS: 21-Hardwoods		Impact or Mitigation Site? Assessment Area Size 0.03	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Sparsely vegetated small wetland area					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Common		
Functions <u>BIOLOGICAL</u> : Vertical heterogeneity (3-4 strata); wading bird feeding, roosting, nesting; macro invertebrate habitat; small-medium-large mammal habitat (cover, food, dens); amphibian/reptile cover, breeding, and feeding. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, raccoon, gray & flying squirrels, otter, gray fox, white-tailed deer, bobcat. <u>BIRDS</u> : downy, hairy and pileated woodpeckers, wood duck, turkey, chickadee, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk. <u>REPTILES</u> : green anole, chicken & box turtles, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator. <u>AMPHIBIANS</u> : cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) American alligator (FT, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (FE, foraging, roosting, seasonal), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Deer tracks					
Additional relevant factors: 					
Assessment conducted by: CEV			Assessment date(s): 06/10/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 63
Impact or Mitigation	Assessment conducted by: CEV	Assessment date: 06/10/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current with 7	Area is surrounded by regenerating forest following clearing for logging. Area has dense shrub/sapling layers that provide cover and other resources for passerines and other small animals. Area drains through the soils and contr butes to groundwater.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 6	Area is a small depressions that stands with water during seasonal rainfall.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 4	Area is a shallow, sparsely vegetated wetland. A few willows, some panic grass, and <i>Buchemia</i> and <i>Ampelopsis</i> compose most of sparse community.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.57	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 66, 67	
FLUCCs code 631		Further classification (optional) FDEP: 631 FNAL: Bog, Slough SCS: 22-Shrub Bogs/Bay Swamps		Impact or Mitigation Site? Assessment Area Size 66 = 0.12 67 = 0.37	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated; may connect via surface flow during heavy seasonal rains.					
Assessment area description					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Macroinvertebrate habitat; wading bird feeding, roosting; small-medium-large mammal habitat; amphibian breeding, cover; vertical heterogeneity (3-4 strata); turtle/snake/lizard breeding; cover; and food. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, southeastern shrew, short-tailed shrew, marsh rabbit gray squirrel, raccoon, bobcat, and deer. <u>BIRDS</u> : wood duck, turkey, great horned owl, barred owl, pileated woodpecker, yellow warbler, red-shouldered hawk, yellow-bellied sapsucker. <u>REPTILES</u> : striped mud turtle, rat snake, ring neck snake, cottonmouth moccasin. <u>AMPHIBIANS</u> : southern dusky salamander, cricket frog.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Little blue heron (SSC, foraging, roosting, incidental), snowy egret (SSC, foraging, roosting, incidental), and tricolored heron (SSC, foraging, roosting, incidental).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):					
Additional relevant factors:					
Assessment conducted by: MRS			Assessment date(s): 06/11/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 66, 67
Impact or Mitigation	Assessment conducted by: MRS	Assessment date: 06/11/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current with 7	The wetland is surrounded by regenerating and mature forests. No major impediments to wildlife movement in the immediate vicinity. Roads,mining and existing power plant activities in the greater vicinity restrict wildlife movement.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 5	Area has disturbance from past silvicultural activities with significant furrowing throughout wetland area and woody debris. Water environment sufficient to support hydric plant species.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 6	No exotics, yet the specieds composition is not highly diverse. This area was historically a wet prairie and, due to disturbance (silviculture, fire suppression), some trees saplings, like laurel oak, and shrubs, like persimmon and wax myrtle, have intruded.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.60	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 68	
FLUCCs code 631		Further classification (optional) FDEP: 631 FNAI: Bog, Slough SCS: 22-Shrub Bogs/Bay Swamps		Impact or Mitigation Site? Assessment Area Size 0.08	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Small isolated wetland surrounded by upland forest					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Macroinvertebrate habitat; wading bird feeding, roosting; small-medium-large mammal habitat; amphibian breeding, cover; vertical heterogeneity (3-4 strata); turtle/snake/lizard breeding; cover; and food. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, southeastern shrew, short-tailed shrew, marsh rabbit gray squirrel, raccoon, bobcat, and deer. <u>BIRDS</u> : wood duck, turkey, great horned owl, barred owl, pileated woodpecker, yellow warbler, red-shouldered hawk, yellow-bellied sapsucker. <u>REPTILES</u> : striped mud turtle, rat snake, ring neck snake, cottonmouth moccasin. <u>AMPHIBIANS</u> : southern dusky salamander, cricket frog.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Little blue heron (SSC, foraging, roosting, incidental), snowy egret (SSC, foraging, roosting, incidental), and tricolored heron (SSC, foraging, roosting, incidental).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): 					
Additional relevant factors: 					
Assessment conducted by: AGS MRS			Assessment date(s): 06/11/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 68
Impact or Mitigation	Assessment conducted by: AGS MRS	Assessment date: 06/11/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support The wetland is surrounded by a forested upland, having all three strata: tree, shrub, and herbaceous, providing cover, nesting/denning, and forage for passerines and small animals. Other than roads,mining and existing power plant activities in the greater vicinity, no impediment to wildlife movement. w/o pres or current with 7	
.500(6)(b)Water Environment (n/a for uplands) Adequate hydrology to support wetland plant species. w/o pres or current with 7	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community Community structure appropriate for a shrub wetland, herbaceous layer somewhat sparse; otherwise species are appropriate. w/o pres or current with 7	

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.70	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 69	
FLUCCs code 617		Further classification (optional) FDEP: 617 FNAI: Floodplain Swamp/Basin Swamp SCS: 21-Hardwoods		Impact or Mitigation Site? Assessment Area Size 0.02	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Small, isolated wetland surrounded by upland forest.					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Vertical heterogeneity (3-4 strata); wading bird feeding, roosting, nesting; macro invertebrate habitat; small-medium-large mammal habitat (cover, food, dens); amphibian/reptile cover, breeding, and feeding. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, raccoon, gray & flying squirrels, otter, gray fox, white-tailed deer, bobcat. <u>BIRDS</u> : downy, hairy and pileated woodpeckers, wood duck, turkey, chickadee, titmouse, Carolina wren, cardinal, ruby-throated hummingbird, yellow-throated & prothonotary warblers, hermit thrush, yellow-billed cuckoo, barred owl, limpkin, yellow-crowned night heron, wood stork, swallow-tailed and Mississippi kites, red-shouldered hawk. <u>REPTILES</u> : green anole, chicken & box turtles, five-lined skink, ring-neck snake, gray rat snake, eastern king snake, water moccasin, alligator. <u>AMPHIBIANS</u> : cricket frog, marbled, mole, three-lined, slimy and southern dusky salamanders.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) American alligator (FT, habitat, long-term), limpkin (SSC, foraging, frequent), wood stork (FE, foraging, roosting, seasonal), tricolored heron (SSC, foraging, roosting, nesting, seasonal), snowy egret (SSC, roosting, nesting, seasonal), little blue heron (SSC, roosting, nesting, seasonal).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):					
Additional relevant factors:					
Assessment conducted by: MRS AGS			Assessment date(s): 06/11/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 69
Impact or Mitigation	Assessment conducted by: MRS AGS	Assessment date: 06/11/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current 7 with	The wetland and surrounding area provide moderate support to wildlife. No artificial barriers to wildlife movement in the immediate vicinity. Roads,mining and existing power plant activities in the greater vicinity impede wildlife movement.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 7 with	Adequate hydrology to support wetland plant species.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 6 with	Low diversity. No shrub layer present. Herbaceous layer just consists of panicum and dichromena.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres 0.67 with

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 78	
FLUCCs code 631		Further classification (optional) FDEP: 631 FNAI: Bog, Slough SCS: 22-Shrub Bogs/Bay Swamps		Impact or Mitigation Site? Assessment Area Size 0.01	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated					
Assessment area description Small, sparsely vegetated wetland					
Significant nearby features Holcim mine and Crystal River Power Plant in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : Macroinvertebrate habitat; wading bird feeding, roosting; small-medium-large mammal habitat; amphibian breeding, cover; vertical heterogeneity (3-4 strata); turtle/snake/lizard breeding; cover; and food. <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; sediment/erosion control; recharge/discharge; detrital export; flood retention/detention.			Mitigation for previous permit/other historic use No		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>MAMMALS</u> : opossum, southeastern shrew, short-tailed shrew, marsh rabbit gray squirrel, raccoon, bobcat, and deer. <u>BIRDS</u> : wood duck, turkey, great horned owl, barred owl, pileated woodpecker, yellow warbler, red-shouldered hawk, yellow-bellied sapsucker. <u>REPTILES</u> : striped mud turtle, rat snake, ring neck snake, cottonmouth moccasin. <u>AMPHIBIANS</u> : southern dusky salamander, cricket frog.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Little blue heron (SSC, foraging, roosting, incidental), snowy egret (SSC, foraging, roosting, incidental), and tricolored heron (SSC, foraging, roosting, incidental).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): None observed. Probably used by frogs and other amphibians.					
Additional relevant factors:					
Assessment conducted by: CEV			Assessment date(s): 06/09/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 78
Impact or Mitigation	Assessment conducted by: CEV	Assessment date: 06/09/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current with 6	The wetland is surrounded by regenerating forest, having all three strata: tree, shrub, and herbaceous, providing cover, nesting/denning, and forage for passerines and small animals. A road is located in close proximity to the wetland. Other than roads,mining and existing power plant activities in the greater vicinity there are no impediment to wildlife movement.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 6	Area appears to be a small depression but is sufficiently stable to support wetland species. Wetland appears to drain through the bedrock and contributes to groundwater.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 6	Community structure is generally healthy and in good condition, lacking exotics, but has low diversity.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.60	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project		Application Number		Assessment Area Name or Number 80,81	
FLUCCs code 511-Ditches		Further classification (optional) FDEP: FNAI: SCS:		Impact or Mitigation Site?	
				Assessment Area Size 80=1.25 81=0.82	
Basin/Watershed Name/Number Crystal River		Affected Waterbody (Class)		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Connected to Crystal River					
Assessment area description Canal surrounded by an existing power plant site, which connects to Crystal River.					
Significant nearby features Crystal River Power Plant and Holcim mine in the greater vicinity.			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions <u>BIOLOGICAL</u> : wading bird feeding; macro invertebrate habitat; <u>PHYSICAL/CHEMICAL</u> : Water quality treatment; flood retention/detention.			Mitigation for previous permit/other historic use		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) <u>BIRDS</u> : dlimpkin, yellow-crowned night heron. <u>REPTILES</u> : water moccasin, alligator.			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) American alligator (FT, habitat, long-term), limpkin (SSC, foraging), tricolored heron (SSC, foraging,seasonal), snowy egret (SSC, roosting, seasonal), little blue heron (SSC, seasonal).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):					
Additional relevant factors:					
Assessment conducted by: MS			Assessment date(s): 04/29/14		

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Duke Energy Florida, Inc., CCC Project	Application Number	Assessment Area Name or Number 80,81
Impact or Mitigation	Assessment conducted by: MS	Assessment date: 04/29/14

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support The wetland/waterbody is surrounded by a power plant site; hence access is limited to terrestrial wildlife. Aquatic wildlife may be present, but is limited by the width of the canal/ditch. w/o pres or current with 4	
.500(6)(b)Water Environment (n/a for uplands) The water environment score is reduced due to artifical hydroperiod resulting from excavation of drainage ditches within surrounding disturbed landscape. w/o pres or current with 4	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community The community structure variable is reduced due to artificial nature of drainage ditches, recruitment impacted by surrounding development and diminished hydroperiod; some impact due to system maintenance. w/o pres or current with 4	

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.40	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

**PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)**

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line		Application Number		Assessment Area Name or Number FLUCFCS 511 - Wetlands 17, 20/21, AA, AB, AO, AQ, BA, BD, BH, CS T, ZE	
FLUCCs code 511 - Ditches		Further classification (optional)		Impact or Mitigation Site?	Assessment Area Size 14.68 acres (17=0.14, 20/21=2.35, AA=0.32, AB=4.39, AO=0.27, AQ=6.6, BA=0.03, BD=0.10, BH=0.22, CS T=0.19, ZE=0.07)
Basin/Watershed Name/Number Crystal River to St. Pete/03100207		Affected Waterbody (Class)		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Hydrologically connected to other wetlands/surface waters outside the transmission line ROW. Surrounded by upland and wetland forest, pasture, and cleared transmission line ROW					
Assessment area description Ditches within existing transmission line ROW vegetated with a mixture of nuisance/exotic species such as cattail (<i>Typha latifolia</i>), primrose willow (<i>Ludwigia peruviana</i>), and torpedo grass (<i>Panicum repens</i>), as well as native species such as whitetop sedge (<i>Dichromena</i> sp.), sedges (<i>Carex</i> sp., <i>Cyperus</i> spp.), rushes (<i>Juncus</i> sp.), sawgrass (<i>Cladium jamaicense</i>), wax myrtle (<i>Myrica cerifera</i>), sweetgum (<i>Liquidambar styraciflua</i>), coinwort (<i>Centella asiatica</i>), smartweed (<i>Polygonum punctatum</i>), musky bushmint (<i>Hyptis alata</i>), dogfennel (<i>Eupatorium capillifolium</i>), bushy broomsedge (<i>Andropogon glomeratus</i>), capeweed (<i>Phyla nodiflora</i>), goldenrod (<i>Solidago canadensis</i>), finger grass (<i>Eustachys glauca</i>), coastal plain willow (<i>Salix caroliniana</i>), beakrushes (<i>Rhynchospora</i> spp.), dwarf umbrella sedge (<i>Fuirena pumila</i>), and sugarcane plumegrass (<i>Erianthus giganteus</i>).					
Significant nearby features Existing transmission line ROW, Crystal River Energy Center, roadways		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Wildlife habitat, water conveyance, flood attenuation, aquifer recharge		Mitigation for previous permit/other historic use N/A			
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading birds, raccoon, fish, armadillo, various amphibians and herpetofauna		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Potential occasional use by wading birds such as white ibis (SSC), little blue heron (SSC), snowy egret (SSC), tricolored heron (SSC), sandhill crane (T), and wood stork (E).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): wood stork					
Additional relevant factors:					
Assessment conducted by: M. Arrants, C. Cunningham, B. Meinecke, S. Rizzo, K. Bullock		Assessment date(s): 10/13/2009 through 11/06/2009			

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 511 - Wetlands 17, 20/21, AA, AB, AO, AQ, BA, BD, BH, CS T, ZE
Impact or Mitigation	Assessment conducted by: M. Arrants, C. Cunningham, B. Meinecke, S. Rizzo, K. Bullock	Assessment date: 10/13/09 through 11/06/09

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current 6 with	Location and landscape support variable is reduced due to location of excavated ditches within surrounding cleared transmission line ROW. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, somewhat reduced due to location within cleared transmission line ROW; b) Invasive exotic species = 6, moderate coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding developed areas; d) functions that benefit fish & wildlife downstream-distance or barriers = 5, moderate benefit, artificial drainageways; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, reduced due to surrounding development and clearing of native habitat; f) Hydrologically connected areas downstream of assessment area = 6, artificial drainage features connect to adjacent areas; g) Dependency of downstream areas on assessment area = 5, moderate benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 5 with	The water environment score is reduced due to artifical hydroperiod resulting from excavation of drainage ditches within surrounding disturbed landscape. Individual parameter scores: a) water levels and flows = 5, artificial nature of excavated ditches; b) water level indicators = 5, altered hydroperiod due to to excavated ditches; c) soil moisture = 6, consistent with expected; d) soil erosion or deposition = 4, erosion from ROW clearance, roadways, adjacent landuses; e) evidence of fire history = N/A; f) vegetation community zonation = 3, artificial system, significant upland species encroachment; g) hydrologic stress on vegetation = 6, upland and transitional species prevalent; h) use by animal species with specific hydrological requirements = 5, due to surrounding altered landscape/altered hydrology; i) vegetative species tolerant of and associated with water quality degradation = 4, some indication of high nutrients, cattails and algae; j) direct observation of water quality = 4, some elevated nutrients likely due to algal growth and nuisance/exotic vegetation; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 5 with	The community structure variable is reduced due to moderate coverage of exotic/nuisance species and excavated, artificial nature of drainage ditches. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 5, maintenance typically removes shrub/canopy stratum, non-desirable wetland species prevalent; b) invasive exotics or other invasive plant species = 6, moderate coverage of exotic/nuisance species; c) regeneration and recruitment = 4, artificial system, recruitment impacted by surrounding development and diminished hydroperiod; d) age & size distribution = 5, typical of artificial drainage ditch, some impact due to maintenance; e) density and quality of coarse woody debris, snag, den, and cavity = N/A; f) plant condition = 6, reduced due to maintenance and herbicide; g) land management practices = 5, due to alteration of community structure by routine maintenance; h) topographic features = 5, excavated system; i) siltation or algal growth in submerged aquatic plant communities = N/A

Score = sum of above scores/30 (if uplands, divide by 20) current or w/o pres 0.53 with

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line		Application Number		Assessment Area Name or Number FLUCFCS 511 - Wetlands Y, Z, AP, AU, CS M, ZDA	
FLUCCs code 511 - Ditches		Further classification (optional)		Impact or Mitigation Site?	Assessment Area Size 3.1 acres (Y=0.22, Z=0.20, AP=1.3, AU=1.18, CS M=0.19, ZDA=0.01)
Basin/Watershed Name/Number Crystal River to St. Pete/03100207		Affected Waterbody (Class)		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Hydrologically connected to other wetlands/surface waters outside the transmission line ROW. Surrounded by upland and wetland forest, pasture, and cleared transmission line ROW					
Assessment area description Ditches within existing transmission line ROW vegetated with a mixture of nuisance/exotic species such as cattail (<i>Typha latifolia</i>) and and torpedo grass (<i>Panicum repens</i>), as well as native species such as sugarcane plume grass (<i>Eriarthus giganteus</i>), whitetop sedge (<i>Dichromena</i> sp.), sawgrass (<i>Cladium jamaicense</i>), musky bushmint (<i>Hyptis alata</i>), smartweed (<i>Polygonum punctatum</i>), dogfennel (<i>Eupatorium capillifolium</i>), bushy broomsedge (<i>Andropogon glomeratus</i>), arrowhead (<i>Sagittaria lancifolia</i>), muhly grass (<i>Muhlenbergia capillaris</i>), goldenrod (<i>Solidago canadensis</i>), and coastal plain willow (<i>Salix caroliniana</i>).					
Significant nearby features Cleared transmission line ROW, US 19		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Wildlife habitat, water conveyance, flood attenuation, aquifer recharge		Mitigation for previous permit/other historic use N/A			
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading birds, raccoon, white tailed deer, armadillo, various amphibians and herpetofauna		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Potential occasional use by wading birds such as white ibis (SSC), little blue heron (SSC), snowy egret (SSC), tricolored heron (SSC), sandhill crane (T), and wood stork (E).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): mosquitofish, leopard frog, white-tailed deer, alligator, florida gar, mourning dove, blue jay					
Additional relevant factors:					
Assessment conducted by: M. Arrants, C. Cunningham, S. Rizzo, A. Davanzo, B. Meinecke, K. Bullock		Assessment date(s): 10/13/2009 through 11/06/2009			

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 511 - Wetlands Y, Z, AP, AU, CS M, ZDA
Impact or Mitigation	Assessment conducted by: M. Arrants, C. Cunningham, S. Rizzo, A. Davanzo, B. Meinecke, K. Bullock	Assessment date: 10/13/09 through 11/06/09

Scoring Guidance
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed

Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current with 6	Location and landscape support variable is somewhat reduced due to location within transmission line ROW. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, reduced due to disturbance from surrounding development; b) Invasive exotic species = 7, minimal coverage of wild taro and paragrass; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding cleared landscape; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, areas adjacent to other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, somewhat reduced due to surrounding cleared transmission line ROW; f) Hydrologically connected areas downstream of assessment area = 7; g) Dependency of downstream areas on assessment area = 6, moderate benefit to adjacent areas.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 5	The water environment score is reduced somewhat due to surrounding cleared transmission line ROW. Individual parameter scores: a) water levels and flows = 8, typical of assessment area, slightly reduced due to adjacent development; b) water level indicators = 7; c) soil moisture = 8, consistent with expected; d) soil erosion or deposition = 6, erosion noted; e) evidence of fire history = N/A; f) vegetation community zonation = 6, typical of assessment area; g) hydrologic stress on vegetation = 7, minimal; h) use by animal species with specific hydrological requirements = 6, foraging habitat; i) vegetative species tolerant of and associated with water quality degradation = 6, some indication of high nutrients, exotic species; j) direct observation of water quality = 7, somewhat elevated nutrients evident due to algal growth and nuisance/exotic vegetation; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 6	The community structure variable is slightly reduced due to presence of exotic/nuisance species. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 7, transmission line maintenance typically removes shrub/canopy stratum, non-desirable wetland species present; b) invasive exotics or other invasive plant species = 7, moderate coverage of paragrass, wild taro, rattlebox; c) regeneration and recruitment = 7, area within transmission line ROW is maintained; d) age & size distribution = 6, altered due to ROW maintenance; e) density and quality of coarse woody debris, snag, den, and cavity = N/A; f) plant condition = 7, typical of assessment area, somewhat reduced due to maintenance; g) land management practices = 7, due to alteration of community structure by routine maintenance; h) topographic features = 7, typical of system, altered due to ROW clearing; i) siltation or algal growth in submerged aquatic plant communities = N/A

Score = sum of above scores/30 (if uplands, divide by 20) current or w/o pres with 0.57

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line		Application Number		Assessment Area Name or Number FLUCFCS 534 - Wetland AM	
FLUCCs code 534 - Reservoirs < 10 acres		Further classification (optional)		Impact or Mitigation Site? Assessment Area Size 0.18 acres	
Basin/Watershed Name/Number Direct Runoff to Gulf/03100207		Affected Waterbody (Class)		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Located within the Crystal River Energy Complex property, north and west of the existing substation. No hydrologic connection to other wetlands or surface waters.					
Assessment area description Wetlands AI and AM are isolated retention areas that retain runoff water from the adjacent car wash and roadways. Vegetation consists of herbaceous species including Peruvian primrosewillow (<i>Ludwigia peruviana</i>), anglestem primrosewillow (<i>Ludwigia leptocarpa</i>), flatsedges (<i>Cyperus</i> spp.), bristlegass (<i>Setaria</i> spp.), annual saltmarsh aster (<i>Symphyotrichum subulatum</i>), Virginia buttonweed (<i>Diodia virginiana</i>), sawgrass (<i>Cladium jamaicense</i>), spotflower (<i>Acmella</i> spp.), marsh mermaidweed (<i>Proserpinaca palustris</i>), and lizard's tail (<i>Saururus cernuus</i>).					
Significant nearby features Crystal River Energy Complex, Gulf of Mexico		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Water storage, foraging habitat for wading birds		Mitigation for previous permit/other historic use N/A			
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading birds, various amph bians and herpetofauna		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Potential foraging by wading birds such as white ibis (SSC), little blue heron (SSC), snowy egret (SSC), tricolored heron (SSC), sandhill crane (T), limpkin (SSC), wood stork (E).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): none					
Additional relevant factors:					
Assessment conducted by: S. Rizzo, T. Davanzo		Assessment date(s): 10/29/2009			

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 534 - Wetland AM
Impact or Mitigation	Assessment conducted by: S. Rizzo, T. Davanzo	Assessment date: 10/28/09, 10/29/09

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current with 4	Location and landscape support variable is reduced due to location of wetlands within Crystal River Energy Complex. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 4, reduced due to location within plant; b) Invasive exotic species = 4, Peruvian primrosewillow dominant; c) Wildlife access to and from outside = 4, decreased due to limitations imposed by plant; d) functions that benefit fish & wildlife downstream-distance or barriers = 4, areas isolated; e) Impacts to wildlife listed in Part 1 by outside land uses = 4, reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 4, isolated; g) Dependency of downstream areas on assessment area = 4, areas isolated and provide no benefit.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 4	The water environment score is reduced due to isolation from other wetlands, location within plant, and land clearing associated with the existing plant. Individual parameter scores: a) water levels and flows = 4, altered due to surrounding plant; b) water level indicators = 4, not consistent with expected; c) soil moisture = 4, drier than expected; d) soil erosion or deposition = 8, minimal erosion; e) evidence of fire history = N/A; f) vegetation community zonation = 8, mostly consistent with expected; g) hydrologic stress on vegetation = 4, apparent; h) use by animal species with specific hydrological requirements = 4, potential wading bird habitat, but no wading birds observed; i) vegetative species tolerant of and associated with water quality degradation = 4, community generally consists of typical species; j) direct observation of water quality = N/A, no water present; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 4	The vegetative community structure is dominated by herbaceous wetland species, and is reduced due to presence of invasive species. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 4, dominated by some undesirable wetland species; b) invasive exotics or other invasive plant species = 4, moderate coverage; c) regeneration and recruitment = 4, impacted by application of herbicides and mowing; d) age & size distribution = 4, impacted by application of herbicides and mowing; e) density and quality of coarse woody debris, snag, den, and cavity = N/A; f) plant condition = 4, impacted by application of herbicides and mowing; g) land management practices = 4, impacted by application of herbicides and mowing; h) topographic features = 4, man made except for Wetland AC; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres with
0.40

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

**PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)**

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line		Application Number		Assessment Area Name or Number FLUCFCS 534 - Wetlands 1, AY, CS U	
FLUCCs code 534 - Reservoirs < 10 acres		Further classification (optional) Stormwater Ponds, Reservoirs		Impact or Mitigation Site? Assessment Area Size 1.35 acres (1=0.12, AY=1.04, CS-U=0.19)	
Basin/Watershed Name/Number Crystal River to St. Pete/03100207		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated stormwater ponds/man-made reservoirs. Surrounded by existing transmission line ROW.					
Assessment area description Stormwater ponds/reservoirs surrounded by transmission line ROW. Vegetative community dominated by a mixture of nuisance/exotic and native species, including coastal plain willow (<i>Salix caroliniana</i>), cattail (<i>Typha latifolia</i>), rushes (<i>Juncus</i> sp.), bushy broomsedge (<i>Andropogon glomeratus</i>), broomsedge bluestem (<i>Andropogon virginicus</i>), coinwort (<i>Centella asiatica</i>), climbing aster (<i>Aster carolinianum</i>), buttonweed (<i>Diodia virginiana</i>), and water hyssop (<i>Bacopa monnieri</i>).					
Significant nearby features Existing transmission line ROW		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Water storage, wildlife habitat		Mitigation for previous permit/other historic use N/A			
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading birds, raccoon, various amphibians and herpetofauna		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Potential occasional use by wading birds such as white ibis (SSC), little blue heron (SSC), snowy egret (SSC), and tricolored heron (SSC).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): six-lined racerunner, apple snails					
Additional relevant factors:					
Assessment conducted by: M. Arrants, C. Cunningham, S. Rizzo, A. Davanzo, K. Bullock		Assessment date(s): 10/15/2009 through 11/5/2009			

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 534 - Wetlands 1, AY, CS U
Impact or Mitigation	Assessment conducted by: M. Arrants, C. Cunningham, S. Rizzo, A. Davanzo, K. Bullock	Assessment date: 10/15/09 through 11/5/09

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current with 5	Location and landscape support variable is reduced due to location of excavated ponds within surrounding cleared ROW and roadways. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 5, reduced due to disturbance from maintenance mowing/herbicide, surrounding development; b) Invasive exotic species = 5, moderate coverage of cattail; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding developed areas and lack of hydrologic connection; d) functions that benefit fish & wildlife downstream-distance or barriers = 1, areas isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, reduced due to surrounding development and clearing of native habitat; f) Hydrologically connected areas downstream of assessment area = 1, no hydrologic connection; g) Dependency of downstream areas on assessment area = 1, minimal benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 5	The water environment score is reduced due to artificial hydroperiod resulting from excavation of ponds/reservoirs within surrounding cleared, impacted areas. Individual parameter scores: a) water levels and flows = 5, artificial nature of excavated ponds; b) water level indicators = 4, upland excavated ponds; c) soil moisture = 7, consistent with expected; d) soil erosion or deposition = 7, limited erosion noted; e) evidence of fire history = N/A; f) vegetation community zonation = 5, artificial system, reduced littoral zone; g) hydrologic stress on vegetation = 6, areas of deeper water reduce extent of expected emergent vegetation; h) use by animal species with specific hydrological requirements = 7, foraging noted, although lack of hydrologic connection reduces utilization; i) vegetative species tolerant of and associated with water quality degradation = 5, some indication of high nutrients, cattails and exotic species; j) direct observation of water quality = 5, elevated nutrients evident due to algal growth and nuisance/exotic vegetation; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 5	The community structure variable is reduced due to presence of exotic/nuisance species and excavated, artificial nature of ponds/reservoirs. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 5, maintenance typically removes shrub/canopy stratum, non-desirable wetland species prevalent; b) invasive exotics or other invasive plant species = 6, moderate coverage of cattail; c) regeneration and recruitment = 4, artificial system, recruitment impacted by surrounding development and diminished hydroperiod; d) age & size distribution = 4, typical of artificial stormwater pond system; e) density and quality of coarse woody debris, snag, den, and cavity = N/A; f) plant condition = 6, reduced due to maintenance and herbicide; g) land management practices = 5, due to alteration of community structure by routine maintenance; h) topographic features = 4, artificial excavated system; i) siltation or algal growth in submerged aquatic plant communities = N/A

Score = sum of above scores/30 (if uplands, divide by 20)
current with
or w/o pres with
0.50

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line		Application Number		Assessment Area Name or Number FLUCFCS 617 - Wetlands 3&24, 8, 11, 12, 16, 18, 19, 22, AN, AQ, AW	
FLUCCs code 617 - Mixed Wetland Hardwoods		Further classification (optional)		Impact or Mitigation Site?	Assessment Area Size 29.97 acres (3&24=0.89, 8=0.3, 11=0.24, 12=0.14, 16=0.25, 18=0.26, 19=1.1, 22=5.84, AN=17.87, AQ=2.5, AW=0.58)
Basin/Watershed Name/Number Crystal River to St. Pete/03100207		Affected Waterbody (Class)		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Isolated forested wetlands adjacent to cleared transmission line ROW and upland forest.					
Assessment area description Forested wetlands vegetated with mixture of native wetland species including laurel oak (<i>Quercus laurifolia</i>), dahoon holly (<i>Ilex cassine</i>), cabbage palm (<i>Sabal palmetto</i>), red maple (<i>Acer rubrum</i>), blackgum (<i>Nyssa sylvatica</i>), pop ash (<i>Fraxinus caroliniana</i>), swamp bay (<i>Persea palustris</i>), red cedar (<i>Juniperus virginianus</i>), and sweet bay (<i>Magnolia virginiana</i>). Shrub species include wax myrtle (<i>Myrica cerifera</i>), coastal plain willow (<i>Salix caroliniana</i>), and walter's viburnum (<i>Viburnum obovatum</i>). Groundcover species include whitetop sedge (<i>Dichromena</i> sp.), muhly grass (<i>Muhlenbergia capillaris</i>), marsh fleabane (<i>Pluchea odorata</i>), pickerelweed (<i>Pontederia cordata</i>), blackberry (<i>Rubus</i> sp.), muscadine (<i>Vitis rotundifolia</i>), and dogfennel (<i>Eupatorium capillifolium</i>).					
Significant nearby features Existing transmission line ROW, roadways		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Wildlife habitat, water storage, aquifer recharge		Mitigation for previous permit/other historic use N/A			
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading birds, raccoon, various amph bians and herpetofauna		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Potential occasional use by wading birds such as white bis (SSC), little blue heron (SSC), snowy egret (SSC), tricolored heron (SSC), sandhill crane (T), and wood stork (E).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): mourning dove, blue jay					
Additional relevant factors:					
Assessment conducted by: B. Meinecke, S. Rizzo, A. Davanzo, K. Bullock		Assessment date(s): 11/2/09 through 11/5/09			

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 617 - Wetlands 3&24, 8, 11, 12, 16, 18, 19, 22, AN, AQ, AW
Impact or Mitigation	Assessment conducted by: B. Meinecke, S. Rizzo, A. Davanzo, K. Bullock	Assessment date: 11/2/09 - 11/5/09

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current 7 with	Location and landscape support variable is reduced somewhat due to location of wetland adjacent to transmission line and golf course. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, slightly reduced due to adjacent cleared landscape; b) Invasive exotic species = 9, minimal coverage; c) Wildlife access to and from outside = 7, decreased due to limitations imposed by surrounding agricultural areas and lack of hydrologic connection; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, moderate barriers due to adjacent cleared landscape; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 5, no direct hydrologic connections; g) Dependency of downstream areas on assessment area = 5, no connection to downstream areas.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 8 with	The water environment score is slightly reduced due to impacts from historical landclearing and development. Individual parameter scores: a) water levels and flows = 8, slight alterations in water level due to surrounding clearing and development; b) water level indicators = 8, consistent with expected; c) soil moisture = 8, consistent with expected; d) soil erosion or deposition = 8, minimal erosion; e) evidence of fire history = N/A; f) vegetation community zonation = 8, typical of assessment area; g) hydrologic stress on vegetation = 8, minimal; h) use by animal species with specific hydrological requirements = 7, wading bird foraging habitat; i) vegetative species tolerant of and associated with water quality degradation = 8, community consists of typical species; j) direct observation of water quality = 8, none noted; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 9 with	The community structure variable reflects dominance by desirable native wetland canopy species. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 9, dominated by desirable native wetland species; b) invasive exotics or other invasive plant species = 9, minimal coverage; c) regeneration and recruitment = 8, minor impact due to adjacent transmission line maintenance; d) age & size distribution = 9, typical of system; e) density and quality of coarse woody debris, snag, den, and cavity = N/A; f) plant condition = 10; g) land management practices = 7, due to alteration of community structure by clearing of adjacent native uplands; h) topographic features = 9, typical for assessment area; i) siltation or algal growth in submerged aquatic plant communities = N/A

Score = sum of above scores/30 (if uplands, divide by 20) current or w/o pres 0.80 with

If preservation as mitigation, Preservation adjustment factor = Adjusted mitigation delta =

For impact assessment areas FL = delta x acres =

Delta = [with-current]

If mitigation Time lag (t-factor) = Risk factor =

For mitigation assessment areas RFG = delta/(t-factor x risk) =
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PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 617 - Wetlands 3&24, 8, 11, 12, 16, 18, 19, 22, AN, AQ, AW
Impact or Mitigation	Assessment conducted by: B. Meinecke, S. Rizzo, A. Davanzo, K. Bullock	Assessment date: 11/2/09 - 11/5/09

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current 7 with	Loss of canopy species associated with clearing the transmission line ROW would reduce the location and landscape support variable for wetland forests through loss of contiguous forested parcels and conversion to a freshwater marsh/wetland scrub community. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 4, reduced due to clearing impacts; b) Invasive exotic species = 6, potential encroachment of exotics associated with disturbance; c) Wildlife access to and from outside = 4, reduced due to clearing impacts; d) functions that benefit fish & wildlife downstream-distance or barriers = 4, limited benefit; e) Impacts to wildlife listed in Part 1 by outside land uses = 4, reduced due to habitat loss; f) Hydrologically connected areas downstream of assessment area = 4, reduced due to clearing impacts; g) Dependency of downstream areas on assessment area = 4, reduced benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 8 with	Clearing the canopy will impact the water environment variable, converting the forested system to a freshwater marsh/wetland scrub habitat; silt fencing will reduce temporary turbidity impacts to adjacent wetlands. Canopy clearing will impact the water environment score due to erosion, sedimentation, and soil compaction. Individual parameter scores: a) water levels and flows = 4, altered due to clearing impacts related to use of heavy machinery, erosion/sedimentation, and soil compaction; b) water level indicators = 4, altered from clearing impacts; c) soil moisture = 4, altered from soil compaction; d) soil erosion or deposition = 4, temporary erosion from clearing impacts; e) evidence of fire history = N/A; f) vegetation community zonation = 4, altered due to removal of canopy stratum; g) hydrologic stress on vegetation = 6, some stress from soil compaction; h) use by animal species with specific hydrological requirements = 6, decreased use due to clearing; i) vegetative species tolerant of and associated with water quality degradation = 6, may have potential encroachment of nuisance/exotic species; j) direct observation of water quality = N/A; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 9 with	Clearing the canopy will convert the system to a freshwater marsh/wetland scrub community with significant loss of functional value compared to the existing forested system. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 4, canopy stratum removed; b) invasive exotics or other invasive plant species = 6, potential encroachment of exotics associated with disturbance; c) regeneration and recruitment = 6, the herbaceous and shrub stratum species will eventually regenerate and recruit; d) age & size distribution = 4, impacted from clearing; e) density and quality of coarse woody debris, snag, den, and cavity = 4, reduced due to clearing impacts; f) plant condition = 4, reduced due to clearing impacts; g) land management practices = 4, due to alteration of community structure by clearing; h) topographic features = 4, atypical for assessment area; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20) current or w/o pres 0.80 with

If preservation as mitigation, Preservation adjustment factor = Adjusted mitigation delta =

For impact assessment areas FL = delta x acres =

Delta = [with-current]

If mitigation Time lag (t-factor) = Risk factor =

For mitigation assessment areas RFG = delta/(t-factor x risk) =
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PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line		Application Number		Assessment Area Name or Number FLUCFCS 630 - Wetlands AT, AZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH	
FLUCCs code 630 - Mixed Hardwood/Conifer Wetland		Further classification (optional)		Impact or Mitigation Site?	Assessment Area Size 25.5 acres (AT=22.94, AZ=0.28, ZA=1.29, ZB=0.01, ZC=0.10, ZD=0.45, ZE=0.15, ZF=0.09, ZG=0.11, ZH=0.08)
Basin/Watershed Name/Number Crystal River to St. Pete/03100207		Affected Waterbody (Class)		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Primarily isolated forested wetlands, some hydrologically connected to other wetlands within the transmission line ROW. Surrounded by cleared transmission line ROW and upland forest, adjacent to Crystal River Energy Center.					
Assessment area description Forested wetlands vegetated with mixture of native wetland hardwood and conifer species including laurel oak (<i>Quercus laurifolia</i>), dahoon holly (<i>Ilex cassine</i>), cabbage palm (<i>Sabal palmetto</i>), red maple (<i>Acer rubrum</i>), ironwood (<i>Carpinus caroliniana</i>), sweetgum (<i>Liquidambar styraciflua</i>), American elm (<i>Ulmus americana</i>), slash pine (<i>Pinus elliottii</i>), blackgum (<i>Nyssa sylvatica</i>), pop ash (<i>Fraxinus caroliniana</i>), swamp bay (<i>Persea palustris</i>), red cedar (<i>Juniperus virginianus</i>), persimmon (<i>Diospyros virginianus</i>), and sweet bay (<i>Magnolia virginiana</i>). Shrub species include wax myrtle (<i>Myrica cerifera</i>), coastal plain willow (<i>Salix caroliniana</i>), and walter's viburnum (<i>Viburnum obovatum</i>). Groundcover species include maidenfern (<i>Thelypteris</i> sp.) and saw palmetto (<i>Serenoa repens</i>).					
Significant nearby features Cleared transmission line ROW, roadways		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Wildlife habitat, water storage, aquifer recharge		Mitigation for previous permit/other historic use N/A			
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading birds, raccoon, various amphibians and herpetofauna		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Potential occasional use by wading birds such as white ibis (SSC), little blue heron (SSC), snowy egret (SSC), tricolored heron (SSC), sandhill crane (T), and wood stork (E).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): blue jay					
Additional relevant factors:					
Assessment conducted by: S. Rizzo, A. Davanzo, K. Bullock		Assessment date(s): 10/13/2009 through 11/06/2009			

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 630 - Wetlands AT, AZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH
Impact or Mitigation	Assessment conducted by: S. Rizzo, A. Davanzo, K. Bullock	Assessment date: 10/29/09 - 11/6/09

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current 7 with	Location and landscape support variable is reduced due to location adjacent to cleared transmission line. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, slightly reduced due to surrounding development; b) Invasive exotic species = 9, minimal coverage; c) Wildlife access to and from outside = 7, slightly decreased due to limitations imposed by surrounding agricultural areas and lack of hydrologic connection; d) functions that benefit fish & wildlife downstream-distance or barriers = 7, moderate barriers due to surrounding development; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 5, minimal hydrologic connections; g) Dependency of downstream areas on assessment area = 7, moderate benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 8 with	The water environment score is slightly reduced due to adjacent clearing and roadways. Individual parameter scores: a) water levels and flows = 8, slightly altered due to surrounding landclearing; b) water level indicators = 8, consistent with expected; c) soil moisture = 8, consistent with expected; d) soil erosion or deposition = 8, minimal erosion from surrounding clearing; e) evidence of fire history = N/A; f) vegetation community zonation = 9, typical for assessment area type; g) hydrologic stress on vegetation = 7, some edge effect, reduced hydroperiod, upland encroachment; h) use by animal species with specific hydrological requirements = 7, potential wading bird foraging habitat; i) vegetative species tolerant of and associated with water quality degradation = 8, community consists of typical species; j) direct observation of water quality = 8, none noted; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 9 with	The community structure variable score reflects a high quality mixture of native wetland species. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 9, dominated by desirable native wetland species; b) invasive exotics or other invasive plant species = 9, minimal coverage; c) regeneration and recruitment = 8, typical for assessment area, slightly reduced due to transmission line maintenance; d) age & size distribution = 8, typical of system; e) density and quality of coarse woody debris, snag, den, and cavity = 9; f) plant condition = 9; g) land management practices = 7, due to alteration of community structure by clearing of adjacent native uplands; h) topographic features = 8, typical for assessment area; i) siltation or algal growth in submerged aquatic plant communities = N/A

Score = sum of above scores/30 (if uplands, divide by 20) current or w/o pres 0.80 with

If preservation as mitigation, Preservation adjustment factor = Adjusted mitigation delta =

For impact assessment areas FL = delta x acres =

Delta = [with-current]

If mitigation Time lag (t-factor) = Risk factor =

For mitigation assessment areas RFG = delta/(t-factor x risk) =
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PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 630 - Wetlands AT, AZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH
Impact or Mitigation	Assessment conducted by: S. Rizzo, A. Davanzo, K. Bullock	Assessment date: 10/29/09 - 11/6/09

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support	w/o pres or current	7	with	Loss of canopy species associated with clearing the transmission line ROW would reduce the location and landscape support variable for wetland forests through loss of contiguous forested parcels and conversion to a freshwater marsh/wetland scrub community. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 4, reduced due to clearing impacts; b) Invasive exotic species = 6, potential encroachment of exotics associated with disturbance; c) Wildlife access to and from outside = 4, reduced due to clearing impacts; d) functions that benefit fish & wildlife downstream-distance or barriers = 4, limited benefit; e) Impacts to wildlife listed in Part 1 by outside land uses = 4, reduced due to habitat loss; f) Hydrologically connected areas downstream of assessment area = 4, reduced due to clearing impacts; g) Dependency of downstream areas on assessment area = 4, reduced benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current	8	with	Clearing the canopy will impact the water environment variable, converting the forested system to a freshwater marsh/wetland scrub habitat; silt fencing will reduce temporary turbidity impacts to adjacent wetlands. Canopy clearing will impact the water environment score due to erosion, sedimentation, and soil compaction. Individual parameter scores: a) water levels and flows = 4, altered due to clearing impacts related to use of heavy machinery, erosion/sedimentation, and soil compaction; b) water level indicators = 4, altered from clearing impacts; c) soil moisture = 4, altered from soil compaction; d) soil erosion or deposition = 4, temporary erosion from clearing impacts; e) evidence of fire history = N/A; f) vegetation community zonation = 4, altered due to removal of canopy stratum; g) hydrologic stress on vegetation = 6, some stress from soil compaction; h) use by animal species with specific hydrological requirements = 6, decreased use due to clearing; i) vegetative species tolerant of and associated with water quality degradation = 6, may have potential encroachment of nuisance/exotic species; j) direct observation of water quality = N/A; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current	9	with	Clearing the canopy will convert the system to a freshwater marsh/wetland scrub community with significant loss of functional value compared to the existing forested system. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 4, canopy stratum removed; b) invasive exotics or other invasive plant species = 6, potential encroachment of exotics associated with disturbance; c) regeneration and recruitment = 6, the herbaceous and shrub stratum species will eventually regenerate and recruit; d) age & size distribution = 4, impacted from clearing; e) density and quality of coarse woody debris, snag, den, and cavity = 4, reduced due to clearing impacts; f) plant condition = 4, reduced due to clearing impacts; g) land management practices = 4, due to alteration of community structure by clearing; h) topographic features = 4, atypical for assessment area; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)		
current		with
0.80		

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line		Application Number		Assessment Area Name or Number FLUCFCS 631 - Wetlands AK and AL	
FLUCCs code 631 - Wetland Scrub		Further classification (optional)		Impact or Mitigation Site?	Assessment Area Size 1 acre (AK=0.47; AL=0.53)
Basin/Watershed Name/Number Direct Runoff to Gulf/03100207		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Located within the Crystal River Energy Complex property, west of the existing substation. No hydrologic connection to other wetlands or surface waters.					
Assessment area description Wetlands AK and AL are shrub wetlands that appear to have been previously forested but are now logged, due to presence of logs, branches and similar debris within the wetlands. Vegetation consists of a mixture of shrub and herbaceous species including Carolina willow (<i>Salix caroliniana</i>), cabbage palm (<i>Sabal palmetto</i>), common buttonbush (<i>Cephalanthus occidentalis</i>), Carolina ash (<i>Fraxinus caroliniana</i>), cattail (<i>Typha</i> spp.), arrowhead (<i>Sagittaria</i> spp.), sweetscent (<i>Pluchea odorata</i>), flatsedges (<i>Cyperus</i> spp.), Virginia buttonweed (<i>Diodia virginiana</i>), spotflower (<i>Acmella</i> spp.), Peruvian primrosewillow (<i>Ludwigia peruviana</i>), lateflowering thoroughwort (<i>Eupatorium serotinum</i>), sawgrass (<i>Cladium jamaicense</i>), groundsel tree (<i>Baccharis halimifolia</i>), and plume grass (<i>Erianthus</i> spp.).					
Significant nearby features Crystal River Energy Complex, Gulf of Mexico		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Water storage, foraging habitat for wading birds		Mitigation for previous permit/other historic use N/A			
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading birds, various amphibians and herpetofauna		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Potential foraging by wading birds such as white ibis (SSC), little blue heron (SSC), snowy egret (SSC), tricolored heron (SSC), sandhill crane (T), limpkin (SSC), wood stork (E).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): none					
Additional relevant factors:					
Assessment conducted by: S. Rizzo, T. Davanzo		Assessment date(s): 10/29/2009			

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 631 - Wetlands AK and AL
Impact or Mitigation	Assessment conducted by: S. Rizzo, T. Davanzo	Assessment date: 10/29/2009

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current with 4	Location and landscape support variable is reduced due to location of wetlands within Crystal River Energy Complex. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 4, reduced due to location within plant; b) Invasive exotic species = 6, Peruvian primrosewillow present; c) Wildlife access to and from outside = 4, decreased due to limitations imposed by plant; d) functions that benefit fish & wildlife downstream-distance or barriers = 4, areas isolated; e) Impacts to wildlife listed in Part 1 by outside land uses = 4, reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 4, isolated; g) Dependency of downstream areas on assessment area = 4, areas isolated and provide no benefit.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 4	The water environment score is reduced due to isolation from other wetlands, location within plant, and land clearing/logging. Individual parameter scores: a) water levels and flows = 4, altered due to surrounding plant; b) water level indicators = 4, not consistent with expected; c) soil moisture = 4, drier than expected; d) soil erosion or deposition = 8, minimal erosion; e) evidence of fire history = N/A; f) vegetation community zonation = 4, altered due to previous logging; g) hydrologic stress on vegetation = 4, apparent; h) use by animal species with specific hydrological requirements = 4, potential wading bird habitat, but no wading birds observed; i) vegetative species tolerant of and associated with water quality degradation = 4, community generally consists of typical species; j) direct observation of water quality = N/A, no water present; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 4	The vegetative community structure is reduced due to presence of exotic species Peruvian primrosewillow and land clearing/logging. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 4, impacted by logging; b) invasive exotics or other invasive plant species = 6, moderate coverage; c) regeneration and recruitment = 4, impacted by logging; d) age & size distribution = 4, impacted by logging; e) density and quality of coarse woody debris, snag, den, and cavity = N/A; f) plant condition = 4, impacted by logging; g) land management practices = 4, impacted by logging; h) topographic features = 6, mostly consistent with expected; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres with
0.40

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line		Application Number		Assessment Area Name or Number FLUCFCS 631 - Wetlands 3&24, AN, AP, AR, AS, AV	
FLUCCs code 631 - Wetland Scrub		Further classification (optional)		Impact or Mitigation Site?	Assessment Area Size 33.42 acres (3&24=2.78, AN=15.32, AP=13.77, AR=0.47, AS=0.98, AV=0.10)
Basin/Watershed Name/Number Crystal River to St. Pete/03100207		Affected Waterbody (Class)		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Primarily isolated systems within existing cleared transmission line ROW; some connections to adjacent wetlands within the ROW.					
Assessment area description Scrub wetlands dominated by a mixture of desirable and nuisance wetland shrubs and small trees such as coastal plain willow (<i>Salix caroliniana</i>), groundsel tree (<i>Baccharis halimifolia</i>), wax myrtle (<i>Myrica cerifera</i>), dahoon holly (<i>Ilex cassine</i>), slash pine (<i>Pinus elliottii</i>), red cedar (<i>Juniperus virginiana</i>), laurel oak (<i>Quercus laurifolia</i>), cabbage palm (<i>Sabal palmetto</i>), swamp bay (<i>Persea palustris</i>), red maple (<i>Acer rubrum</i>), persimmon (<i>Diospyros virginiana</i>), pop ash (<i>Fraxinus caroliniana</i>), and buttonbush (<i>Cephalanthus occidentalis</i>). Groundcover species include nuisance/exotic species cattail (<i>Typha latifolia</i>), torpedo grass (<i>Panicum repens</i>), and cogon grass (<i>Imperata cylindrica</i>), as well as native species such as sawgrass (<i>Cladium jamaicense</i>), sugarcane plume grass (<i>Eriarthus giganteus</i>), bushy broomsedge (<i>Andropogon glomeratus</i>), goldenrod (<i>Solidago</i> sp.), yellowtops (<i>Flaveria</i> sp.), and lobelia (<i>Lobelia</i> sp.).					
Significant nearby features Cleared transmission line ROW, Crystal River Energy Center, roadways		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Wildlife habitat, water storage, aquifer recharge		Mitigation for previous permit/other historic use N/A			
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading birds, raccoon, various amphibians and herpetofauna		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Potential occasional use by wading birds such as white ibis (SSC), little blue heron (SSC), snowy egret (SSC), tricolored heron (SSC), sandhill crane (T), and wood stork (E).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): mourning dove, leopard frog					
Additional relevant factors:					
Assessment conducted by: B. Meinecke, S. Rizzo, A. Davanzo, K. Bullock		Assessment date(s): 10/29/09 - 11/5/09			

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 631 - Wetlands 3&24, AN, AP, AR, AS, AV
Impact or Mitigation	Assessment conducted by: B. Meinecke, S. Rizzo, A. Davanzo, K. Bullock	Assessment date: 10/29/09 - 11/5/09

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current with 6	Location and landscape support variable is reduced due to location within cleared transmission line ROW. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, reduced due to surrounding clearing; b) Invasive exotic species = 4, significant coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding land clearing; d) functions that benefit fish & wildlife downstream-distance or barriers = 2, areas isolated from other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 2, no hydrologic connection; g) Dependency of downstream areas on assessment area = 2, little benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 6	The water environment score is reduced due to impacts from landclearing, adjacent industrial landuses, and roadways. Individual parameter scores: a) water levels and flows = 6, altered due to clearing, ditching, roadways; b) water level indicators = 6, typical of assessment area; c) soil moisture = 6, typical of assessment area; d) soil erosion or deposition = 6, moderate erosion from adjacent landuses; e) evidence of fire history = N/A; f) vegetation community zonation = 6, moderate upland species encroachment; g) hydrologic stress on vegetation = 6; h) use by animal species with specific hydrological requirements = 5, poor wildlife habitat; i) vegetative species tolerant of and associated with water quality degradation = 6, some species indicative of high nutrients, eg. cattail; j) direct observation of water quality = N/A; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 6	The community structure variable is reduced due to periodic disturbance and nuisance species. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 6, prevalence of nuisance/exotic species, routine ROW maintenance; b) invasive exotics or other invasive plant species = 5, significant coverage; c) regeneration and recruitment = 6, impacted by mowing; d) age & size distribution = 5, altered due to ROW maintenance of ROW; e) density and quality of coarse woody debris, snag, den, and cavity = N/A; f) plant condition = 6, reduced due to ROW maintenance; g) land management practices = 6, due to alteration of community structure by clearing of adjacent native uplands; h) topographic features = 6, typical for assessment area; i) siltation or algal growth in submerged aquatic plant communities = N/A

Score = sum of above scores/30 (if uplands, divide by 20) current or w/o pres with 0.60

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line		Application Number		Assessment Area Name or Number FLUCFCS 631 - Wetlands 15 and 23	
FLUCCs code 631 - Wetland Scrub		Further classification (optional)		Impact or Mitigation Site?	
				Assessment Area Size 1.41 acres (15=0.01, 23=1.40)	
Basin/Watershed Name/Number Crystal River to St. Pete/03100207		Affected Waterbody (Class)		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands					
Isolated systems within existing cleared transmission line ROW					
Assessment area description Scrub wetlands dominated by a mixture of native wetland shrubs and small trees including coastal plain willow (<i>Salix caroliniana</i>), wax myrtle (<i>Myrica cerifera</i>), dahoon holly (<i>Ilex cassine</i>), laurel oak (<i>Quercus laurifolia</i>), cabbage palm (<i>Sabal palmetto</i>), pop ash (<i>Fraxinus caroliniana</i>), and buttonbush (<i>Cephalanthus occidentalis</i>). Groundcover species include creeping primrose willow (<i>Ludwigia repens</i>), sawgrass (<i>Cladium jamaicense</i>), dogfennel (<i>Eupatorium capillifolium</i>), whitetop sedge (<i>Dichromena</i> sp.), and marsh fleabane (<i>Pluchea odorata</i>).					
Significant nearby features Existing transmission line ROW, roadways		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Wildlife habitat, water storage, aquifer recharge		Mitigation for previous permit/other historic use N/A			
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) raccoon, various amphibians and herpetofauna		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Potential but unlikely use by wading birds such as white ibis (SSC), little blue heron (SSC), snowy egret (SSC), tricolored heron (SSC), sandhill crane (T), and wood stork (E).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): none observed					
Additional relevant factors:					
Assessment conducted by: B. Meinecke, K. Bullock		Assessment date(s): 11/4-5/2009			

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 631 - Wetlands 15 and 23
Impact or Mitigation	Assessment conducted by: B. Meinecke, K. Bullock	Assessment date: 11/4-5/09

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current with 7	Location and landscape support variable is reduced due to location adjacent to roads and cleared transmission line. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, reduced due to surrounding development; b) Invasive exotic species = 8, minimal coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding cleared landscape, industrial uses; d) functions that benefit fish & wildlife downstream-distance or barriers = 4, no connection to other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 3, no hydrologic connections; g) Dependency of downstream areas on assessment area = 3, little benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 6	The water environment score is reduced due to impacts from landclearing, ditching, and ROW maintenance. Individual parameter scores: a) water levels and flows = 6, altered due to clearing, ditching; b) water level indicators = 7, typical of assessment area; c) soil moisture = 7, typical of assessment area; d) soil erosion or deposition = 7, erosion from adjacent landuses; e) evidence of fire history = N/A; f) vegetation community zonation = 6, moderate upland species encroachment; g) hydrologic stress on vegetation = 6; h) use by animal species with specific hydrological requirements = 5, poor wildlife habitat; i) vegetative species tolerant of and associated with water quality degradation = 6, willow; j) direct observation of water quality = N/A; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 7	The community structure variable is slightly reduced due to limited species diversity, dominance by coastal plain willow, and routine ROW maintenance. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 7, dominance by native species, limited diversity; b) invasive exotics or other invasive plant species = 8, minimal coverage; c) regeneration and recruitment = 8, somewhat impacted by ROW maintenance, ditching; d) age & size distribution = 7, typical of system, reduced due to ROW maintenance; e) density and quality of coarse woody debris, snag, den, and cavity = 8; f) plant condition = 6, extent and health of native species impacted somewhat by ROW maintenance; g) land management practices = 6, clearing of adjacent native uplands; h) topographic features = 7, typical of assessment area; i) siltation or algal growth in submerged aquatic plant communities = N/A

Score = sum of above scores/30 (if uplands, divide by 20) current or w/o pres with 0.67

If preservation as mitigation, Preservation adjustment factor = Adjusted mitigation delta =

For impact assessment areas FL = delta x acres =

Delta = [with-current]

If mitigation Time lag (t-factor) = Risk factor =

For mitigation assessment areas RFG = delta/(t-factor x risk) =
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PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line		Application Number		Assessment Area Name or Number FLUCFCS 641 - Wetland AJ	
FLUCCs code 641 - Freshwater Marshes		Further classification (optional)		Impact or Mitigation Site?	Assessment Area Size 0.05 acres
Basin/Watershed Name/Number Direct Runoff to Gulf/03100207		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Located within the Crystal River Energy Complex property, north of the existing substation. No hydrologic connection to other wetlands or surface waters.					
Assessment area description Wetland AC is an isolated depressional freshwater marsh sprayed with herbicides, and Wetlands AH and AJ are isolated stormwater retention areas that retain water from surrounding parking lots. Vegetation consists of herbaceous species including torpedograss (<i>Panicum repens</i>), sawgrass (<i>Cladium jamaicense</i>), flatsedges (<i>Cyperus</i> spp.), creeping primrosewillow (<i>Ludwigia repens</i>), manyflower marshpennywort (<i>Hydrocotyle umbellata</i>), Virginia buttonweed (<i>Diodia virginiana</i>), ticktrefoil (<i>Desmodium</i> spp.), bedstraw (<i>Galium</i> spp.), and smartweed (<i>Polygonum</i> spp.).					
Significant nearby features Crystal River Energy Complex, Gulf of Mexico		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Water storage, foraging habitat for wading birds		Mitigation for previous permit/other historic use N/A			
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading birds, various amphibians and herpetofauna		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Potential foraging by wading birds such as white ibis (SSC), little blue heron (SSC), snowy egret (SSC), tricolored heron (SSC), sandhill crane (T), limpkin (SSC), wood stork (E).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): chipping sparrow					
Additional relevant factors:					
Assessment conducted by: S. Rizzo, T. Davanzo		Assessment date(s): 10/28/09, 10/29/09			

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 641 - Wetland AJ
Impact or Mitigation	Assessment conducted by: S. Rizzo, T. Davanzo	Assessment date: 10/28/09, 10/29/09

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current with 4	Location and landscape support variable is reduced due to location of wetlands within Crystal River Energy Complex. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 4, reduced due to location within plant; b) Invasive exotic species = 4, torpedograss dominant; c) Wildlife access to and from outside = 4, decreased due to limitations imposed by plant; d) functions that benefit fish & wildlife downstream-distance or barriers = 4, areas isolated; e) Impacts to wildlife listed in Part 1 by outside land uses = 4, reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 4, isolated; g) Dependency of downstream areas on assessment area = 4, areas isolated and provide no benefit.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 4	The water environment score is reduced due to isolation from other wetlands, location within plant, and land clearing associated with the existing plant. Individual parameter scores: a) water levels and flows = 4, altered due to surrounding plant; b) water level indicators = 4, not consistent with expected; c) soil moisture = 4, drier than expected; d) soil erosion or deposition = 8, minimal erosion; e) evidence of fire history = N/A; f) vegetation community zonation = 4, altered due to application of herbicides and mowing; g) hydrologic stress on vegetation = 4, apparent; h) use by animal species with specific hydrological requirements = 4, potential wading bird habitat, but no wading birds observed; i) vegetative species tolerant of and associated with water quality degradation = 4, community generally consists of typical species; j) direct observation of water quality = N/A, no water present; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 4	The vegetative community structure is dominated by herbaceous wetland species, and is reduced due to presence of exotic species torpedograss. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 4, dominated by some undesirable wetland species; b) invasive exotics or other invasive plant species = 4, moderate coverage; c) regeneration and recruitment = 4, impacted by application of herbicides and mowing; d) age & size distribution = 4, impacted by application of herbicides and mowing; e) density and quality of coarse woody debris, snag, den, and cavity = N/A; f) plant condition = 4, impacted by application of herbicides and mowing; g) land management practices = 4, impacted by application of herbicides and mowing; h) topographic features = 4, man made except for Wetland AC; i) siltation or algal growth in submerged aquatic plant communities = N/A.

Score = sum of above scores/30 (if uplands, divide by 20)
current with
or w/o pres
0.40

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line		Application Number		Assessment Area Name or Number FLUCFCS 641 - Wetlands 2, 19, Z, AU, AX, AZ, BB, BC, BE, BF, BG, CS W	
FLUCCs code 641 - Freshwater Marshes		Further classification (optional)		Impact or Mitigation Site?	Assessment Area Size 17.52 acres (2=2.86, 19=1.97, Z=0.65, AU=9.5, AX=0.44, AZ=0.18, BB=0.21, BC=0.37, BE=0.37, BF=0.64, BG=0.05, CS W=0.28)
Basin/Watershed Name/Number Crystal River to St. Pete/03100207		Affected Waterbody (Class)		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Primarily isolated wetlands within cleared transmission line ROW. Wetland AU connects to ditch adjacent to Powerline Road.					
Assessment area description Freshwater marsh wetlands within transmission line ROW, impacted by routing ROW maintenance/mowing. Vegetated with mixture of predominantly native wetland species including a sparse canopy/shrub layer comprised of a mixture of dahoon holly (<i>Ilex cassine</i>), laurel oak (<i>Quercus laurifolia</i>), sweetgum (<i>Liquidambar styraciflua</i>), cabbage palm (<i>Sabal palmetto</i>), groundsel tree (<i>Baccharis halimifolia</i>), persimmon (<i>Diospyros virginiana</i>), buttonbush (<i>Cephalanthus occidentalis</i>), and coastal plain willow (<i>Salix caroliniana</i>). Dominant groundcover species include sawgrass (<i>Cladium jamaicense</i>), cattail (<i>Typha latifolia</i>), muhly grass (<i>Muhlenbergia capillaris</i>), dogfennel (<i>Eupatorium capillifolium</i>), sugarcane plumegrass (<i>Eriarthus giganteus</i>), whitetop sedge (<i>Dichromena</i> sp.), spotflower (<i>Spilanthes</i> sp.), sedges (<i>Cyperus</i> sp.), bushy broomsedge (<i>Andropogon glomeratus</i>), finger grass (<i>Eustachys glauca</i>), marsh pennywort (<i>Hydrocotyle umbellata</i>), dwarf umbrella grass (<i>Fuirena scirpoides</i>), coinwort (<i>Centella asiatica</i>), redtop panicum (<i>Panicum rigidulum</i>), erylgo (<i>Eryngium</i> sp.), goldenrod (<i>Solidago</i> sp.), capeweed (<i>Phyla nodiflora</i>), signalgrass (<i>Urochloa</i> sp.), and musky mint (<i>Hyptis alata</i>).					
Significant nearby features Cleared transmission line ROW, roadways, Crystal River Energy Center		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Wildlife habitat, water storage, aquifer recharge		Mitigation for previous permit/other historic use N/A			
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading birds, raccoon, various amphibians and herpetofauna		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Potential occasional use by wading birds such as white ibis (SSC), little blue heron (SSC), snowy egret (SSC), tricolored heron (SSC), sandhill crane (T), and wood stork (E).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): mourning dove					
Additional relevant factors:					
Assessment conducted by: M. Arrants, B. Meinecke, S. Rizzo, K. Bullock		Assessment date(s): 10/15/2009 - 11/4/2009			

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 641 - Wetlands 2, 19, Z, AU, AX, AZ, BB, BC, BE, BF, BG, CS W
Impact or Mitigation	Assessment conducted by: M. Arrants, B. Meinecke, S. Rizzo, K. Bullock	Assessment date: 10/15/09 - 11/4/09

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current with 6	Location and landscape support variable is reduced due to location of wetland within cleared transmission line ROW. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, reduced due to surrounding development; b) Invasive exotic species = 6, moderate coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding cleared ROW, industrial landuses; d) functions that benefit fish & wildlife downstream-distance or barriers = 5, limited connection to other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 4, limited hydrologic connections; g) Dependency of downstream areas on assessment area = 4, little benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 6	The water environment score is reduced due to impacts from landclearing, ditching, adjacent industrial landuses, and roadways. Individual parameter scores: a) water levels and flows = 6, altered due to clearing, ditching; b) water level indicators = 7, typical of assessment area; c) soil moisture = 7, typical of assessment area; d) soil erosion or deposition = 6, erosion from clearing, adjacent landuses; e) evidence of fire history = N/A; f) vegetation community zonation = 6, moderate upland species encroachment; g) hydrologic stress on vegetation = 6; h) use by animal species with specific hydrological requirements = 6, marginal wildlife habitat; i) vegetative species tolerant of and associated with water quality degradation = 7, moderate coverage of willow; j) direct observation of water quality = N/A; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 6	The community structure variable is reduced due to routine ROW maintenance. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 6; b) invasive exotics or other invasive plant species = 8, minimal coverage; c) regeneration and recruitment = 6, impacted by ROW maintenance, ditching; d) age & size distribution = 6, typical of system, reduced due to ROW maintenance; e) density and quality of coarse woody debris, snag, den, and cavity = 6; f) plant condition = 6, extent and health of native species impacted by ROW maintenance; g) land management practices = 6, clearing of adjacent native uplands; h) topographic features = 6, reduced compared to typical assessment area; i) siltation or algal growth in submerged aquatic plant communities = N/A

Score = sum of above scores/30 (if uplands, divide by 20) current or w/o pres with 0.60

If preservation as mitigation, Preservation adjustment factor = Adjusted mitigation delta =

For impact assessment areas FL = delta x acres =

Delta = [with-current]

If mitigation Time lag (t-factor) = Risk factor =

For mitigation assessment areas RFG = delta/(t-factor x risk) =
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PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line		Application Number		Assessment Area Name or Number FLUCFCS 641 - Wetlands 4, 5, 6, 7, 9, 10, 13, 14, AT	
FLUCCs code 641 - Freshwater Marshes		Further classification (optional)		Impact or Mitigation Site? Assessment Area Size 31.44 acres (4=0.01, 5=0.03, 6=0.42, 7=0.01, 9=0.22, 10=0.14, 13=0.64, 14=0.14, AT=29.83)	
Basin/Watershed Name/Number Crystal River to St. Pete/03100207		Affected Waterbody (Class)		Special Classification (i.e. OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Hydrologically connected to other wetlands/surface waters outside the transmission line ROW. Surrounded by upland and wetland forest, roadways, and cleared transmission line ROW Assessment area description Freshwater marsh wetlands within transmission line ROW, impacted by routing ROW maintenance/mowing. Dominant vegetative species include sawgrass (<i>Cladium jamaicense</i>), muhly grass (<i>Muhlenbergia capillaris</i>), sugarcane plume grass (<i>Erianthus giganteus</i>), whitetop sedge (<i>Dichromena</i> sp.), bushy broomsedge (<i>Andropogon glomeratus</i>), arrowhead (<i>Sagittaria lancifolia</i>), yellowtops (<i>Flaveria</i> sp.), dwarf umbrella grass (<i>Fuirena scirpoides</i>), coinwort (<i>Centella asiatica</i>), redbud panicum (<i>Panicum rigidulum</i>), dogfennel (<i>Eupatorium capillifolium</i>), goldenrod (<i>Solidago</i> sp.), blue maidencane (<i>Amphicarpum muhlenbergianum</i>), and sedges (<i>Cyperus</i> sp., <i>Carex</i> sp.). Common shrub species include coastal plain willow (<i>Salix caroliniana</i>), wax myrtle (<i>Myrica cerifera</i>), and buttonbush (<i>Cephalanthus occidentalis</i>).					
Significant nearby features Existing transmission line ROW, roadways, Crystal River Energy Center				Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique	
Functions Wildlife habitat, water storage, aquifer recharge				Mitigation for previous permit/other historic use N/A	
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading birds, raccoon, various amphibians and herpetofauna				Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Potential occasional use by wading birds such as white ibis (SSC), little blue heron (SSC), snowy egret (SSC), tricolored heron (SSC), sandhill crane (T), and wood stork (E).	
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): black vulture, red tailed hawk, blue jay					
Additional relevant factors:					
Assessment conducted by: B. Meinecke, S. Rizzo, A. Davanzo, K. Bullock				Assessment date(s): 11/2-4/09	

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 641 - Wetlands 4, 5, 6, 7, 9, 10, 13, 14, AT
Impact or Mitigation	Assessment conducted by: B. Meinecke, S. Rizzo, A. Davanzo, K. Bullock	Assessment date: 11/2-4/09

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current with 7	Location and landscape support variable is slightly reduced due to location of wetlands within transmission line ROW. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 7, reduced due to cleared ROW; b) Invasive exotic species = 7, minimal coverage; c) Wildlife access to and from outside = 7, decreased due to limitations imposed by clearing, roadways, development; d) functions that benefit fish & wildlife downstream-distance or barriers = 7; e) Impacts to wildlife listed in Part 1 by outside land uses = 7, slightly reduced due to clearing, roadways; f) Hydrologically connected areas downstream of assessment area = 3, typically isolated systems; g) Dependency of downstream areas on assessment area = 3, minimal benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 6	The water environment score is reduced due to impacts from landclearing, adjacent industrial landuses, and roadways. Individual parameter scores: a) water levels and flows = 6, altered due to clearing, ditching; b) water level indicators = 7, typical of assessment area; c) soil moisture = 7, typical of assessment area; d) soil erosion or deposition = 6, erosion from adjacent landuses; e) evidence of fire history = N/A; f) vegetation community zonation = 6, moderate upland species encroachment; g) hydrologic stress on vegetation = 6; h) use by animal species with specific hydrological requirements = 5, poor wildlife habitat; i) vegetative species tolerant of and associated with water quality degradation = 7, some species indicative of high nutrients, eg. willow; j) direct observation of water quality = N/A; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 7	These freshwater marshes support a diverse community of native wetland vegetation, although routine ROW maintenance reduces the community structure variable. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 7, dominated by desirable native wetland species, ROW maintenance reduces extent of canopy species; b) invasive exotics or other invasive plant species = 6, moderate coverage; c) regeneration and recruitment = 7, somewhat impacted by ROW maintenance; d) age & size distr bution = 8, typical of system; e) density and quality of coarse woody debris, snag, den, and cavity = 7; f) plant condition = 8; g) land management practices = 7, due to alteration of community structure by clearing of adjacent native uplands; h) topographic features = 7; typical for assessment area; i) siltation or algal growth in submerged aquatic plant communities = N/A

Score = sum of above scores/30 (if uplands, divide by 20) current or w/o pres with 0.67

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres =

Delta = [with-current]

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line		Application Number		Assessment Area Name or Number FLUCFCS 643 - Wetlands X, AB, CS L, CS S, CS V	
FLUCCs code 643 - Wet Prairie		Further classification (optional)		Impact or Mitigation Site?	Assessment Area Size 7.88 acres (X=0.43, AB=7.00, CS L=0.03, CS S=0.32, CS V=0.10)
Basin/Watershed Name/Number Crystal River to St. Pete/03100207		Affected Waterbody (Class)		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Primarily isolated wet prairie wetlands within cleared transmission line ROW. Wetland AB connects to drainage ditch adjacent to Powerline Road.					
Assessment area description Wet prairie wetlands, infrequently inundated, located within transmission line ROW, impacted by routine maintenance/mowing. Dominant groundcover species include sugarcane plume grass (<i>Erianthus giganteus</i>), signalgrass (<i>Urochloa</i> sp.), maidencane (<i>Panicum hemitomon</i>), muhly grass (<i>Muhlenbergianum</i> sp.), musky mint (<i>Hyptis alata</i>), bushy broomsedge (<i>Andropogon glomeratus</i>), capeweed (<i>Phyla nodiflora</i>), and marsh fleabane (<i>Pluchea odorata</i>). Sparse shrub layer includes saw palmetto (<i>Sereona repens</i>) and wax myrtle (<i>Myrica cerifera</i>).					
Significant nearby features Cleared transmission line ROW, roadways		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Wildlife habitat, water storage, aquifer recharge		Mitigation for previous permit/other historic use N/A			
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Wading birds, raccoon, various amphibians and herpetofauna		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Potential occasional use by wading birds such as white ibis (SSC), little blue heron (SSC), snowy egret (SSC), tricolored heron (SSC), sandhill crane (T), and wood stork (E).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): apple snails, catbird, gopher tortoise burrow within Wetland CS-S					
Additional relevant factors: 					
Assessment conducted by: M. Arrants, C. Cunningham, S. Rizzo, A. Davanzo, K. Bullock		Assessment date(s): 10/14-28/09			

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name Progress Energy Florida, Inc./Levy Baseload Transmission Program/LCR Transmission Line	Application Number	Assessment Area Name or Number FLUCFCS 643 - Wetlands X, AB, CS L, CS S, CS V
Impact or Mitigation	Assessment conducted by: M. Arrants, C. Cunningham, S. Rizzo, A. Davanzo, K. Bullock	Assessment date: 10/14-28/09

Scoring Guidance The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Optimal (10) Condition is optimal and fully supports wetland/surface water functions	Moderate(7) Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal (4) Minimal level of support of wetland/surface water functions	Not Present (0) Condition is insufficient to provide wetland/surface water functions
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.500(6)(a) Location and Landscape Support w/o pres or current 6 with	Location and landscape support variable is reduced due to location within cleared transmission line and adjacent industrial landuses. Individual parameter scores: a) Support to wildlife listed in Part 1 by outside habitats = 6, reduced due to surrounding development; b) Invasive exotic species = 7, moderate coverage; c) Wildlife access to and from outside = 6, decreased due to limitations imposed by surrounding roadways and industrial areas; d) functions that benefit fish & wildlife downstream-distance or barriers = 5, limited connection to other habitats; e) Impacts to wildlife listed in Part 1 by outside land uses = 6, reduced due to surrounding habitat loss; f) Hydrologically connected areas downstream of assessment area = 2, limited hydrologic connections, typically isolated; g) Dependency of downstream areas on assessment area = 2, little benefit to downstream areas.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 6 with	The water environment score is reduced due to marginal hydroperiod and impacts from landclearing, ditching, adjacent industrial landuses, and roadways. Individual parameter scores: a) water levels and flows = 6, altered due to clearing, ditching; b) water level indicators = 5, less than typical of assessment area; c) soil moisture = 6, reduced due to ditching; d) soil erosion or deposition = 7, minimal erosion from surrounding landuse; e) evidence of fire history = N/A; f) vegetation community zonation = 6, moderate upland species encroachment; g) hydrologic stress on vegetation = 6; h) use by animal species with specific hydrological requirements = 5, poor wildlife habitat; i) vegetative species tolerant of and associated with water quality degradation = 8, none noted; j) direct observation of water quality = N/A; K) existing water quality data = N/A; l) water depth wave, wave energy, currents and light penetration = N/A.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 6 with	The community structure variable is reduced due to marginal hydroperiod, mowing, and ditching. Individual parameter scores: a) plant community species in the canopy, shrub, or ground stratum = 6, limited diversity, significant coverage of facultative species; b) invasive exotics or other invasive plant species = 8, minimal coverage; c) regeneration and recruitment = 6, impacted by mowing; d) age & size distribution = 6, altered due to maintenance of ROW; e) density and quality of coarse woody debris, snag, den, and cavity = N/A; f) plant condition = 6, reduced due to ROW maintenance; g) land management practices = 6, due to alteration of community structure by clearing of adjacent native uplands; h) topographic features = 5, less than typical for assessment area; i) siltation or algal growth in submerged aquatic plant communities = N/A

Score = sum of above scores/30 (if uplands, divide by 20) current or w/o pres 0.60 with

If preservation as mitigation, Preservation adjustment factor = Adjusted mitigation delta =

For impact assessment areas FL = delta x acres =

Delta = [with-current]

If mitigation Time lag (t-factor) = Risk factor =

For mitigation assessment areas RFG = delta/(t-factor x risk) =
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WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 9, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: Wetland 1, 21, 30, 31, 32, 48, 49, 53, 79
 Investigator(s): AGS EN Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): 3
 Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: NAD 83

Lat:	Long:	Lat:	Long?
1 28° 57' 46.084" N	82° 40' 9.084" W	48 28° 58' 11.118" N	82° 41' 5.424" W
21 28° 57' 45.967" N	82° 40' 41.753" W	49 28° 58' 12.446" N	82° 41' 4.578" W
30 28° 57' 45.814" N	82° 40' 51.660" W	53 28° 57' 46.234" N	82° 40' 15.856" W
31 28° 57' 45.740" N	82° 40' 49.234" W	79 28° 58' 9.164" N	82° 41' 2.875" W
32 28° 57' 46.078" N	82° 40' 47.179" W		

Soil Map Unit Name: Boca Find Sand (depressional) NWI Classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☒ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required) ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Dark staining at base		

VEGETATION (Four Strata) - Use scientific names of plants.

Wetland 1, 21, 30, 31,
Sampling Point 32, 48, 49, 53, 79

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Sabal palmetto (Palm, cabbage)</u>	25	Y		Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Nyssa biflora (Tupelo, swamp)</u>	15	Y	FACW	
3. <u>Acer rubrum (Maple, red)</u>	5		FAC	
4. <u>Quercus laurifolia (Oak, laurel)</u>	5		FACW	
5. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
6. _____				
7. _____				
8. _____				
50 % of total cover: <u>25</u>		20 % of total cover: <u>10</u>		
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Diospyros virginiana (Persimmon, common)</u>	50	Y	FAC	Hydrophytic Vegetation Indicators: <u>1</u> – Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> – Dominance Test is > 50% <u>3</u> – Prevalence Test is ≤ 3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Sabal palmetto (Palm, cabbage)</u>	50	Y		
3. <u>Myrica cerifera (Bayberry, southern)</u>	5		FAC	
4. <u>Cephalanthus occidentalis (Buttonbush, common)</u>	1		OBL	
5. _____				Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
6. _____				
7. _____				
8. _____				
50 % of total cover: <u>53</u>		20 % of total cover: <u>21.2</u>		
Herb Stratum (Plot size: _____)				
1. <u>Rhynchospora miliacea (Beakrush, millet)</u>	5	Y	OBL	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
2. <u>Hydrocotyle verticillata (Penny-wort, world)</u>	1		OBL	
3. <u>Panicum rigidulum (Grass, red-top panic)</u>	1		FACW	
4. <u>Pluchea foetida (Camphor-weed, stinking)</u>	1		OBL	
5. _____				
6. _____				
7. _____				
8. _____				
50 % of total cover: <u>4</u>		20 % of total cover: <u>1.6</u>		
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
50 % of total cover: <u>0</u>		20 % of total cover: <u>0</u>		

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

 Sampling Point: Wetland 1, 21, 30, 31, 32, 48, 49, 53, 79
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
1	10YR2/1	100			N/A	N/A	Muck	Mucky sand
12	10YR2/2	100			N/A	N/A	Clay	Clayey sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☒ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☒ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Clay
 Depth (inches): 10

 Hydric Soil Present? Yes X No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 9, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: Upland 1, 21, 30, 31, 32, 48, 49, 53, 79
 Investigator(s): AGS EN Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): Road side slope Local relief (concave, convex, none): Convex Slope (%): 3
 Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: NAD 83

Lat:	Long:	Lat:	Long:
1 28° 57' 46.084" N	82° 40' 9.084" W	48 28° 58' 11.118" N	82° 41' 5.424" W
21 28° 57' 45.967" N	82° 40' 41.753" W	49 28° 58' 12.446" N	82° 41' 4.578" W
30 28° 57' 45.814" N	82° 40' 51.660" W	53 28° 57' 46.234" N	82° 40' 15.856" W
31 28° 57' 45.740" N	82° 40' 49.234" W	79 28° 58' 9.164" N	82° 41' 2.875" W
32 28° 57' 46.078" N	82° 40' 47.179" W		

Soil Map Unit Name: Boca fine sand NWI Classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point Upland 1, 21, 30, 31,
32, 48, 49, 53, 79

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Quercus laurifolia (Oak, laurel)</u>	10	Y	FACW	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
	10	= Total Cover		
50 % of total cover: <u>5</u>		20 % of total cover: <u>2</u>		
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Quercus laurifolia (Oak, laurel)</u>	25	Y	FACW	
2. <u>Baccharis glomeruliflora (Tree, groundsel)</u>	10	Y		
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
	35	= Total Cover		
17.5		20 % of total cover: <u>7</u>		
Herb Stratum (Plot size: _____)				
1. <u>Eustachys petraea (Grass, pinewoods finger)</u>	25	Y	NI	
2. <u>Eryngium baldwinii (Coyote-thistle, baldwin's)</u>	15	Y		
3. <u>Campanula floridana (Bellflower, florida)</u>	2			
4. <u>Phyla nodiflora (Frog-fruit, common)</u>	1		FACW	
5. <u>Polypremum procumbens (Juniper-leaf)</u>	1		UPL	
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
	44	= Total Cover		
50 % of total cover: <u>22</u>		20 % of total cover: <u>8.8</u>		
Woody Vine Stratum (Plot size: _____)				
1. <u>Vitis rotundifolia (Grape, muscadine)</u>	15	Y	FAC	
2. _____				
3. _____				
4. _____				
5. _____				
	15	= Total Cover		
50 % of total cover: <u>7.5</u>		20 % of total cover: <u>3</u>		
Remarks: (Include photo numbers here or on a separate sheet.)				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

 1 – Rapid Test for Hydrophytic Vegetation

 2 – Dominance Test is > 50%

 3 – Prevalence Test is ≤ 3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes X No

SOIL

Sampling Point: Upland 1, 21, 30, 31,
32, 48, 49, 53, 79**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	5YR4/4	100			N/A	N/A	Sandy Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☐ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
 (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes _____ No X**Remarks:**

Small pieces of limestone throughout roadside fill

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 9, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: Wetland 2, 3, 4, 7, 8, 9, 11, 12, 16, 19, 22, 24-27, 36, 51, 54, 57, 58, 74, 75, 76, 77
 Investigator(s): AGS EN Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: NAD 83

Lat:	Long:	Lat:	Long?
2 28° 57' 47.222" N	82° 40' 14.861" W	25 28° 57' 56.895" N	82° 40' 39.828" W
3 28° 57' 50.504" N	82° 40' 15.107" W	26 28° 57' 56.153" N	82° 40' 40.623" W
4 28° 57' 52.777" N	82° 40' 15.455" W	27 28° 57' 59.683" N	82° 40' 35.707" W
7 28° 57' 47.638" N	82° 40' 26.663" W	36 28° 57' 47.570" N	82° 40' 56.108" W
8 28° 57' 49.855" N	82° 40' 26.402" W	51 28° 57' 55.779" N	82° 40' 39.637" W
9 28° 57' 50.210" N	82° 40' 24.922" W	54 28° 58' 9.644" N	82° 40' 50.174" W
11 28° 57' 52.103" N	82° 40' 25.364" W	57 28° 57' 59.927" N	82° 40' 11.823" W
12 28° 57' 53.916" N	82° 40' 22.111" W	58 28° 58' 1.766" N	82° 40' 9.762" W
16 28° 58' 15.746" N	82° 40' 12.254" W	74 28° 57' 52.204" N	82° 40' 27.818" W
19 28° 57' 52.854" N	82° 40' 29.679" W	75 28° 57' 55.088" N	82° 40' 29.617" W
22 28° 57' 48.087" N	82° 40' 39.839" W	76 28° 57' 52.881" N	82° 40' 18.023" W
24 28° 57' 55.259" N	82° 40' 39.282" W	77 28° 57' 45.824" N	82° 40' 21.598" W

Soil Map Unit Name: Boca Find Sand (depressional) NWI Classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☒ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☒ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) - Use scientific names of plants.

Wetland 2, 3, 4, 7, 8, 9, 11,
12, 16, 19, 22, 24-27, 36, 51,
Sampling Point 54, 57, 58, 74, 75, 76, 77

Tree Stratum (Plot size: 25' x 25')				Dominance Test worksheet:	
1. <i>Quercus laurifolia</i> (Oak, laurel)	95	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
	95	= Total Cover		Total Number of Dominant Species Across All Strata: <u>3</u> (B)	
50 % of total cover: <u>47.5</u>		20 % of total cover: <u>19</u>		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
Sapling/Shrub Stratum (Plot size: 25' x 25')				Prevalence Index worksheet:	
1. <i>Cephalanthus occidentalis</i> (Buttonbush, common)	25	Y	OBL	Total % Cover of: _____	Multiply by: _____
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
	25	= Total Cover		OBL species _____ x 1 = _____	
25' x 25' <u>12.5</u>		20 % of total cover: <u>5</u>		FACW species _____ X 2 = _____	
				FAC species _____ X 3 = _____	
				FACU species _____ X 4 = _____	
				UPL species _____ X 5 = _____	
				Column Totals: _____ (A) _____ (B)	
				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: _____)					
1. <i>Rhynchospora miliacea</i> (Beakrush, millet)	60	Y	OBL	Hydrophytic Vegetation Indicators:	
2. <i>Centella asiatica</i> (Coinleaf, asian)	5		FACW	____ 1 – Rapid Test for Hydrophytic Vegetation	
3. <i>Panicum rigidulum</i> (Grass, red-top panic)	5		FACW	☒ 2 – Dominance Test is > 50%	
4. <i>Ludwigia palustris</i> (Seedbox, marsh)	1		OBL	____ 3 – Prevalence Test is ≤ 3.0 ¹	
5. <i>Saccharum giganteum</i> (Sugarcane plume grass)	1		FACW	____ Problematic Hydrophytic Vegetation ¹ (Explain)	
6. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____				Definitions of Vegetation Strata:	
8. _____				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
9. _____				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
10. _____				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
11. _____				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
12. _____				Woody vine – All woody vines, regardless of height.	
	72	= Total Cover			
50 % of total cover: <u>36</u>		20 % of total cover: <u>14.4</u>			
Woody Vine Stratum (Plot size: _____)					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
	0	= Total Cover			
50 % of total cover: <u>0</u>		20 % of total cover: <u>0</u>			
Remarks: (Include photo numbers here or on a separate sheet.)					

SOIL

Wetland 2, 3, 4, 7, 8, 9, 11,
12, 16, 19, 22, 24-27, 36, 51,
Sampling Point: 54, 57, 58, 74, 75, 76, 77

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR2/2	5		3	C	M	Sandy Clay	
	10YR4/2	95			N/A	N/A	Sandy Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☒ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☒ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
 (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present?Yes ☒ No ☐**Remarks:**

1-inch duff layer on top of sandy clay layer Redox throughout sandy clay layer

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 9, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: Upland 2, 3, 4, 7, 8, 9, 11, 12, 16, 19, 22, 24-27, 36, 51, 54, 57, 58, 74, 75, 76, 77
 Investigator(s): AGS EN Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.) Slight slope Local relief (concave, convex, none): Convex Slope (%): 2
 Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: NAD 83

Lat:	Long:	Lat:	Long?
2 28° 57' 47.222" N	82° 40' 14.861" W	25 28° 57' 56.895" N	82° 40' 39.828" W
3 28° 57' 50.504" N	82° 40' 15.107" W	26 28° 57' 56.153" N	82° 40' 40.623" W
4 28° 57' 52.777" N	82° 40' 15.455" W	27 28° 57' 59.683" N	82° 40' 35.707" W
7 28° 57' 47.638" N	82° 40' 26.663" W	36 28° 57' 47.570" N	82° 40' 56.108" W
8 28° 57' 49.855" N	82° 40' 26.402" W	51 28° 57' 55.779" N	82° 40' 39.637" W
9 28° 57' 50.210" N	82° 40' 24.922" W	54 28° 58' 9.644" N	82° 40' 50.174" W
11 28° 57' 52.103" N	82° 40' 25.364" W	57 28° 57' 59.927" N	82° 40' 11.823" W
12 28° 57' 53.916" N	82° 40' 22.111" W	58 28° 58' 1.766" N	82° 40' 9.762" W
16 28° 58' 15.746" N	82° 40' 12.254" W	74 28° 57' 52.204" N	82° 40' 27.818" W
19 28° 57' 52.854" N	82° 40' 29.679" W	75 28° 57' 55.088" N	82° 40' 29.617" W
22 28° 57' 48.087" N	82° 40' 39.839" W	76 28° 57' 52.881" N	82° 40' 18.023" W
24 28° 57' 55.259" N	82° 40' 39.282" W	77 28° 57' 45.824" N	82° 40' 21.598" W

Soil Map Unit Name: Boca Fine Sand NWI Classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

SOIL

Upland 2, 3, 4, 7, 8, 9, 11, 12,
16, 19, 22, 24-27, 36, 51, 54,
Sampling Point: 57, 58, 74, 75, 76, 77

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	10YR3/2	100			N/A	N/A	Sandy	Fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
☐ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P, T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Gleyed Matrix (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Ochric (F11) **(MLRA 151)**
☐ Iron Manganese Masses (F12) **(LRR O, P, T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Ochric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20)
(MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Resistant to shovel below 1 inch Mostly pieces of limestone with fine sand

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 9, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: Wetland 6, 14, 46, 47, 52, 62, 65, 68, 71, 72
 Investigator(s): AGS EN Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): 20
 Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: NAD 83

Lat:	Long:	Lat:	Long?
6 28° 57' 45.403" N	82° 40' 28.600" W	62 28° 57' 59.790" N	82° 40' 8.919" W
14 28° 57' 58.541" N	82° 40' 21.474" W	65 28° 58' 7.519" N	82° 40' 7.401" W
46 28° 58' 6.494" N	28° 58' 8.903" N	68 28° 58' 2.195" N	82° 40' 49.249" W
47 28° 58' 10.281" N	82° 41' 6.101" W	71 28° 58' 8.448" N	82° 41' 3.687" W
52 28° 58' 9.736" N	82° 41' 5.155" W	72 28° 57' 48.570" N	82° 40' 6.291" W

Soil Map Unit Name: Broward find sand NWI Classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
☒ Surface Water (A1)	☐ Aquatic Fauna (B13)	☐ Surface Soil Cracks (B6)
☐ High Water Table (A2)	☐ Marl Deposits (B15) (LRR U)	☐ Sparsely Vegetated Concave Surface (B8)
☒ Saturation (A3)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☒ Water Marks (B1)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Moss Trim Lines (B16)
☐ Sediment Deposits (B2)	☐ Presence of Reduced Iron (C4)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Crayfish Burrows (C8)
☐ Algal Mat or Crust (B4)	☐ Thin Muck Surface (C7)	☐ Saturation Visible on Aerial Imagery (C9)
☒ Iron Deposits (B5)	☐ Other (Explain in Remarks)	☒ Geomorphic Position (D2)
☐ Inundation Visible on Aerial Imagery (B7)		☐ Shallow Aquitard (D3)
☒ Water-Stained Leaves (B9)		☒ FAC-Neutral Test (D5)
		☐ Sphagnum moss (D8) (LRR T, U)
Field Observations:		Wetland Hydrology Present? Yes <u>X</u> No _____
Surface Water Present? Yes <u>X</u> No _____ Depth (inches): _____		
Water Table Present? Yes <u>X</u> No _____ Depth (inches): _____		
Saturation Present? Yes <u>X</u> No _____ Depth (inches): _____ (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Iron deposited on dead branches and leaves Shrub swamp in Karst depression		

Wetland 6, 14, 46, 47, 52,
Sampling Point 62, 65, 68, 71, 72

				Dominance Test worksheet:	
Tree Stratum (Plot size: 25' x 25')				Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)	
1. Quercus laurifolia (Oak,laurel)	Absolute % Cover	Dominant Species?	Indicator Status	Total Number of Dominant Species Across All Strata: 4 (B)	
2. Acer rubrum (Maple,red)	20	Y	FACW	Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)	
3.	5	Y	FAC		
4.					
5.					
6.					
7.					
8.					
50 % of total cover: 12.5				Prevalence Index worksheet:	
25 = Total Cover				Total % Cover of: Multiply by:	
20 % of total cover: 5				OBL species x 1 =	
				FACW species X 2 =	
				FAC species X 3 =	
				FACU species X 4 =	
				UPL species X 5 =	
				Column Totals: (A) (B)	
				Prevalence Index = B/A =	
Sapling/Shrub Stratum (Plot size:)				Hydrophytic Vegetation Indicators:	
1. Cephalanthus occidentalis (Buttonbush,common)	40	Y	OBL	1 – Rapid Test for Hydrophytic Vegetation	
2. Sabal palmetto (Palm,cabbage)	5			X 2 – Dominance Test is > 50%	
3. Cornus foemina (Dogwood,stiff)	1		FAC	3 – Prevalence Test is ≤ 3.0 ¹	
4.				Problematic Hydrophytic Vegetation ¹ (Explain)	
5.					
6.					
7.					
8.					
46 = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
23				Definitions of Vegetation Strata:	
20 % of total cover: 9.2				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
				Woody vine – All woody vines, regardless of height.	
Herb Stratum (Plot size:)					
1. Polygonum setaceum (Smartweed,swamp)	30	Y	OBL		
2. Hydrocotyle verticillata (Penny-wort,world)	1		OBL		
3. Ludwigia palustris (Seedbox,marsh)	1		OBL		
4. Pontederia cordata (Weed,pickerel)	1		OBL		
5. Scirpus cyperinus (Wool-grass)	1		FACW		
6.					
7.					
8.					
9.					
10.					
11.					
12.					
34 = Total Cover					
50 % of total cover: 17					
20 % of total cover: 6.8					
Woody Vine Stratum (Plot size:)					
1.					
2.					
3.					
4.					
5.					
0 = Total Cover					
50 % of total cover: 0					
20 % of total cover: 0					
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes X No	

SOIL

Wetland 6, 14, 46, 47, 52,
Sampling Point: 62, 65, 68, 71, 72

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-0.5					N/A	N/A	N/A	Plant debris
0.5-12	10YR1/1				N/A	N/A	Muck	Mucky mineral

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☒ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☒ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☒ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☒ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Below 12 inches limestone

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 9, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: Upland 6, 14, 46, 47, 52, 62, 65, 68, 71, 72
 Investigator(s): AGS EN Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.) Slightly undulating topography Local relief (concave, convex, none): Convex Slope (%): 1
 Subregion (LRR or MLRA): LRR U Lat: Long: Datum: NAD 83

Lat:	Long:	Lat:	Long?
6 28° 57' 45.403" N	82° 40' 28.600" W	62 28° 57' 59.790" N	82° 40' 8.919" W
14 28° 57' 58.541" N	82° 40' 21.474" W	65 28° 58' 7.519" N	82° 40' 7.401" W
46 28° 58' 6.494" N	28° 58' 8.903" N	68 28° 58' 2.195" N	82° 40' 49.249" W
47 28° 58' 10.281" N	82° 41' 6.101" W	71 28° 58' 8.448" N	82° 41' 3.687" W
52 28° 58' 9.736" N	82° 41' 5.155" W	72 28° 57' 48.570" N	82° 40' 6.291" W

Soil Map Unit Name: NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? No Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u></u>	Is the Sampled Area within a Wetland? Yes <u></u> No <u></u>
Hydric Soil Present? Yes <u>X</u> No <u></u>	
Wetland Hydrology Present? Yes <u>X</u> No <u></u>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<u>X</u> Surface Water (A1)	<u></u> Aquatic Fauna (B13)	<u></u> Surface Soil Cracks (B6)
<u></u> High Water Table (A2)	<u></u> Marl Deposits (B15) (LRR U)	<u></u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u></u> Hydrogen Sulfide Odor (C1)	<u></u> Drainage Patterns (B10)
<u>X</u> Water Marks (B1)	<u></u> Oxidized Rhizospheres on Living Roots (C3)	<u></u> Moss Trim Lines (B16)
<u></u> Sediment Deposits (B2)	<u></u> Presence of Reduced Iron (C4)	<u></u> Dry-Season Water Table (C2)
<u></u> Drift Deposits (B3)	<u></u> Recent Iron Reduction in Tilled Soils (C6)	<u></u> Crayfish Burrows (C8)
<u></u> Algal Mat or Crust (B4)	<u></u> Thin Muck Surface (C7)	<u></u> Saturation Visible on Aerial Imagery (C9)
<u>X</u> Iron Deposits (B5)	<u></u> Other (Explain in Remarks)	<u>X</u> Geomorphic Position (D2)
<u></u> Inundation Visible on Aerial Imagery (B7)		<u></u> Shallow Aquitard (D3)
<u>X</u> Water-Stained Leaves (B9)		<u>X</u> FAC-Neutral Test (D5)
		<u></u> Sphagnum moss (D8) (LRR T, U)
Field Observations:		
Surface Water Present? Yes <u>X</u> No <u></u> Depth (inches): <u></u>	Wetland Hydrology Present? Yes <u>X</u> No <u></u>	
Water Table Present? Yes <u>X</u> No <u></u> Depth (inches): <u></u>		
Saturation Present? Yes <u>X</u> No <u></u> Depth (inches): <u></u> (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) - Use scientific names of plants.

Sampling Point Upland 6, 14, 46, 47, 52, 62, 65, 68, 71, 72

Tree Stratum (Plot size: <u>25' x 25'</u>)				Dominance Test worksheet:	
1. <u>Quercus laurifolia (Oak, laurel)</u>	75	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	
2. <u>Sabal palmetto (Palm, cabbage)</u>	10			Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
85 = Total Cover					
50 % of total cover: <u>42.5</u>				20 % of total cover: <u>17</u>	
Sapling/Shrub Stratum (Plot size: <u>25' x 25'</u>)				Prevalence Index worksheet:	
1. <u>Sabal palmetto (Palm, cabbage)</u>	40	Y		Total % Cover of: _____	Multiply by: _____
2. <u>Myrica cerifera (Bayberry, southern)</u>	10		FAC	OBL species _____	x 1 = _____
3. <u>Rubus pensilvanicus (Pennsylvania blackberry)</u>	2			FACW species _____	x 2 = _____
4. _____				FAC species _____	x 3 = _____
5. _____				FACU species _____	x 4 = _____
6. _____				UPL species _____	x 5 = _____
7. _____				Column Totals: _____	(A) _____ (B) _____
8. _____				Prevalence Index = B/A = _____	
52 = Total Cover					
25' x 25' <u>26</u>				20 % of total cover: <u>10.4</u>	
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. _____				<u> </u> 1 – Rapid Test for Hydrophytic Vegetation	
2. _____				<u>X</u> 2 – Dominance Test is > 50%	
3. _____				<u> </u> 3 – Prevalence Test is ≤ 3.0 ¹	
4. _____				<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
5. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
6. _____				Definitions of Vegetation Strata:	
7. _____				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
8. _____				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
9. _____				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
10. _____				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
11. _____				Woody vine – All woody vines, regardless of height.	
12. _____					
0 = Total Cover					
50 % of total cover: <u>0</u>				20 % of total cover: <u>0</u>	
Woody Vine Stratum (Plot size: <u>25' x 25'</u>)				Hydrophytic Vegetation Present?	
1. <u>Vitis rotundifolia (Grape, muscadine)</u>	10	Y	FAC	Yes <u>X</u>	No <u> </u>
2. <u>Smilax bona-nox (Greenbrier, saw)</u>	3		FACU		
3. <u>Smilax smallii (Greenbrier, lance-leaf)</u>	3		NI		
4. <u>Toxicodendron radicans (Ivy, poison)</u>	2		FAC		
5. <u>Campsis radicans (Trumpet-creeper)</u>	1		FAC		
19 = Total Cover					
50 % of total cover: <u>9.5</u>				20 % of total cover: <u>3.8</u>	
Remarks: (Include photo numbers here or on a separate sheet.)					

SOIL

Sampling Point: Upland 6, 14, 46, 47, 52,
62, 65, 68, 71, 72**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-0.5					N/A	N/A	N/A	Plant debris
0.5-12	10YR1/1				N/A	N/A	Muck	Mucky mineral

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☒ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☒ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☒ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☒ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No ☐**Remarks:**

Below 12 inches limestone

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 10, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: Wetland 5, 10, 18, 59, 64, 66, 69, 70, 73, 78
 Investigator(s): CEV MS Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR or MLRA): MLRA 154 Lat: Long: Datum: NAD 83

Lat:	Long:	Lat:	Long?
5 28° 57' 57.694" N	82° 40' 11.407" W	66 28° 58' 11.267" N	82° 40' 44.904" W
10 28° 57' 51.428" N	82° 40' 26.043" W	69 28° 58' 2.928" N	82° 40' 50.368" W
18 28° 57' 50.210" N	82° 40' 29.440" W	70 28° 58' 6.353" N	82° 40' 49.537" W
59 28° 57' 59.533" N	82° 40' 29.711" W	73 28° 57' 49.892" N	82° 40' 27.710" W
64 28° 58' 2.080" N	82° 40' 22.542" W	78 28° 58' 16.668" N	82° 40' 48.139" W

Soil Map Unit Name: Hallandale-rock outcrop complex/ Boca fine sand NWI Classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? No Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<u> </u> Surface Water (A1)	<u> </u> Aquatic Fauna (B13)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Drainage Patterns (B10)
<u>X</u> Water Marks (B1)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Thin Muck Surface (C7)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)	<u> </u> Other (Explain in Remarks)	<u>X</u> Geomorphic Position (D2)
<u> </u> Inundation Visible on Aerial Imagery (B7)		<u>X</u> Shallow Aquitard (D3)
<u> </u> Water-Stained Leaves (B9)		<u>X</u> FAC-Neutral Test (D5)
		<u> </u> Sphagnum moss (D8) (LRR T, U)
Field Observations:		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>		
Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>		
Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Area situated on karst topography; has been disturbed by logging/earthworking.		

VEGETATION (Four Strata) - Use scientific names of plants.

Wetland 5, 10, 18, 59,
Sampling Point 64, 66, 69, 70, 73, 78

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
0 = Total Cover				
50 % of total cover: <u>0</u>		20 % of total cover: <u>0</u>		
Sapling/Shrub Stratum (Plot size: 25' diameter)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. <u>Cephalanthus occidentalis (Buttonbush,common)</u>	<u>15</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Sabal palmetto (Palm,cabbage)</u>	<u>15</u>	<u>Y</u>		
3. <u>Viburnum obovatum (Viburnum,walter)</u>	<u>5</u>			
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
35 = Total Cover				
25' diameter <u>17.5</u>		20 % of total cover: <u>7</u>		
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: <u>1</u> – Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> – Dominance Test is > 50% <u>3</u> – Prevalence Test is ≤ 3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Juncus marginatus (Rush,grass-leaf)</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Rhynchospora caduca (Beakrush,falling)</u>	<u>15</u>	<u>Y</u>	<u>OBL</u>	
3. <u>Rhynchospora cephalantha (Beakrush,clustered)</u>	<u>10</u>		<u>OBL</u>	
4. <u>Woodwardia virginica (Chainfern,virginia)</u>	<u>10</u>		<u>OBL</u>	
5. <u>Hypericum mutilum (St. john's-wort,slender)</u>	<u>5</u>		<u>FACW</u>	
6. <u>Centella asiatica (Coinleaf,asian)</u>	<u>2</u>		<u>FACW</u>	
7. <u>Dichanthelium sp. ()</u>	<u>2</u>			
8. <u>Hydrocotyle umbellata (Penny-wort,many-flower)</u>	<u>1</u>		<u>OBL</u>	
70 = Total Cover				
50 % of total cover: <u>35</u>		20 % of total cover: <u>14</u>		
Woody Vine Stratum (Plot size: _____)				Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
1. <u>Vitis rotundifolia (Grape,muscadine)</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
20 = Total Cover				
50 % of total cover: <u>10</u>		20 % of total cover: <u>4</u>		

Remarks: (Include photo numbers here or on a separate sheet.)

Hydrophytic Vegetation Present? Yes X No _____

SOIL

 Sampling Point: Wetland 5, 10, 18, 59,
64, 66, 69, 70, 73, 78

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
1	10YR2/1	100			N/A	N/A	Muck	
1-4	10YR6/1	100			N/A	N/A	Sandy	
4-14	10YR2/1	100			N/A	N/A	Sandy	Saturated

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
 (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

 Yes ☒ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 10, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: Upland 5, 10, 18, 59, 64, 66, 69, 70, 73, 78
 Investigator(s): CEV MS Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Convex Slope (%):
 Subregion (LRR or MLRA): MLRA 154 Lat: Long: Datum: NAD 83

Lat:	Long:	Lat:	Long?
5 28° 57' 57.694" N	82° 40' 11.407" W	66 28° 58' 11.267" N	82° 40' 44.904" W
10 28° 57' 51.428" N	82° 40' 26.043" W	69 28° 58' 2.928" N	82° 40' 50.368" W
18 28° 57' 50.210" N	82° 40' 29.440" W	70 28° 58' 6.353" N	82° 40' 49.537" W
59 28° 57' 59.533" N	82° 40' 29.711" W	73 28° 57' 49.892" N	82° 40' 27.710" W
64 28° 58' 2.080" N	82° 40' 22.542" W	78 28° 58' 16.668" N	82° 40' 48.139" W

Soil Map Unit Name: Hallandale-rock outcrop complex NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? No Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> </u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: Area has been impacted by logging and earthmoving; probable fill.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point	Upland 5, 10, 18, 59, 64, 66, 69, 70, 73, 78
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Tree Stratum (Plot size: 15' diameter)				Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Quercus virginiana (Oak, live)</u>			10	Y	FACU
2.						
3.						
4.						
5.						
6.						
7.						
8.						
				10	= Total Cover	
50 % of total cover: <u>5</u>				20	% of total cover: <u>2</u>	
Sapling/Shrub Stratum (Plot size: 15' diameter)						
1.	<u>Serenoa repens (Palmetto, saw)</u>			20	Y	
2.	<u>Rhus copallinum (Sumac, winged)</u>			5	Y	NI
3.						
4.						
5.						
6.						
7.						
8.						
				25	= Total Cover	
15' diameter <u>12.5</u>				20	% of total cover: <u>5</u>	
Herb Stratum (Plot size: <u> </u>)						
1.	<u>Eustachys petraea (Grass, pinewoods finger)</u>			30	Y	NI
2.	<u>Andropogon virginicus (Broom-sedge)</u>			20	Y	FACU
3.	<u>Croton michauxii (Rushfoil)</u>			20	Y	
4.	<u>Mecardonia acuminata (Mecardonia, purple)</u>			10		OBL
5.	<u>Polypremum procumbens (Juniper-leaf)</u>			10		UPL
6.						
7.						
8.						
9.						
10.						
11.						
12.						
				90	= Total Cover	
50 % of total cover: <u>45</u>				20	% of total cover: <u>18</u>	
Woody Vine Stratum (Plot size: <u>15' diameter</u>)						
1.	<u>Vitis shuttleworthii (Grape, calusa)</u>					

SOIL

Sampling Point: Upland 5, 10, 18, 59,
64, 66, 69, 70, 73, 78**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
12	10YR6/2	100			N/A	N/A	Sandy	Fine sand
12-15	10YR4/1	10			N/A	N/A	Sandy	Fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☐ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
 (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes _____ No ☒ X**Remarks:**

Probable fill; logging and earthmoving have impacted the area.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: June 11, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: Wetland 17, 23, 38, 39, 50
 Investigator(s): AGS MS Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%): 2
 Subregion (LRR or MLRA): LRR U Lat: Long: Datum: NAD 83
 Lat: Long: Lat: Long:
 17 28° 57' 50.006" N 82° 40' 34.592" W 39 28° 57' 52.136" N 82° 41' 5.395" W
 23 28° 57' 51.123" N 82° 40' 41.239" W 50 28° 57' 54.864" N 82° 41' 3.618" W
 38 28° 57' 49.177" N 82° 41' 0.862" W
 Soil Map Unit Name: Boca-Pinedo, limestone complex NWI Classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? No Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☒ Surface Water (A1) ☐ Aquatic Fauna (B13) ☒ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☒ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☒ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☒ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☒ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) - Use scientific names of plants.

 Sampling Point Wetland 17, 23, 38, 39, 50

	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: <u>25' x 25'</u>)																		
1. <u>Fraxinus pennsylvanica</u> (Ash,green)	50	Y	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. <u>Quercus laurifolia</u> (Oak,laurel)	40	Y	FACW															
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
90 = Total Cover																		
50 % of total cover: <u>45</u>		20 % of total cover: <u>18</u>																
Sapling/Shrub Stratum (Plot size: <u>25' x 25'</u>)																		
1. <u>Cephalanthus occidentalis</u> (Buttonbush,common)	5	Y	OBL	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>X 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>X 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>X 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>X 5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	X 2 = _____	FAC species _____	X 3 = _____	FACU species _____	X 4 = _____	UPL species _____	X 5 = _____	Column Totals: _____	(A) _____ (B) _____
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = _____																	
FACW species _____	X 2 = _____																	
FAC species _____	X 3 = _____																	
FACU species _____	X 4 = _____																	
UPL species _____	X 5 = _____																	
Column Totals: _____	(A) _____ (B) _____																	
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
5 = Total Cover																		
25' x 25' <u>2.5</u>		20 % of total cover: <u>1</u>																
Herb Stratum (Plot size: _____)																		
1. <u>Cladium jamaicense</u> (Sawgrass,jamaica)	60	Y	OBL	Hydrophytic Vegetation Indicators: <u>1</u> – Rapid Test for Hydrophytic Vegetation <u>X</u> 2 – Dominance Test is > 50% <u>3</u> – Prevalence Test is ≤ 3.0 ¹ <u>_____</u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Rhynchospora inundata</u> (Beakrush,horned)	10		OBL															
3. <u>Sagittaria graminea</u> (Arrow-head,grass-leaf)	1		OBL															
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
12. _____																		
71 = Total Cover																		
50 % of total cover: <u>35.5</u>		20 % of total cover: <u>14.2</u>																
Woody Vine Stratum (Plot size: _____)																		
1. _____				Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
12. _____																		
0 = Total Cover																		
50 % of total cover: <u>0</u>		20 % of total cover: <u>0</u>																
				Hydrophytic Vegetation Present? Yes <u>X</u> No _____														

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: Wetland 17, 23, 38, 39, 50

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR1/2	100			N/A	N/A	Sandy Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☒ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
 (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No ☐**Remarks:**

2 inches of partially decomposed plant material on top of soil

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: June 11, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: Upland 17, 23, 38, 39, 50
 Investigator(s): AGS MS Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: NAD 83
 Lat: _____ Long: _____ Lat: _____ Long? _____
 17 28° 57' 50.006" N 82° 40' 34.592" W 39 28° 57' 52.136" N 82° 41' 5.395" W
 23 28° 57' 51.123" N 82° 40' 41.239" W 50 28° 57' 54.864" N 82° 41' 3.618" W
 38 28° 57' 49.177" N 82° 41' 0.862" W
 Soil Map Unit Name: Boca-pineda, limestone substratum complex NWI Classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: Group with 39, 50	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Aquatic Fauna (B13) _____ High Water Table (A2) _____ Marl Deposits (B15) (LRR U) _____ Saturation (A3) _____ Hydrogen Sulfide Odor (C1) _____ Water Marks (B1) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Sediment Deposits (B2) _____ Presence of Reduced Iron (C4) _____ Drift Deposits (B3) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Algal Mat or Crust (B4) _____ Thin Muck Surface (C7) _____ Iron Deposits (B5) _____ Other (Explain in Remarks) _____ Inundation Visible on Aerial Imagery (B7) _____ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Sparsely Vegetated Concave Surface (B8) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ FAC-Neutral Test (D5) _____ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) - Use scientific names of plants.

 Sampling Point Upland 17, 23, 38, 39, 50

	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: <u>25' x 25'</u>)																		
1. <u>Quercus laurifolia</u> (Oak, laurel)	75	Y	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
75 = Total Cover																		
50 % of total cover: <u>37.5</u>		20 % of total cover: <u>15</u>																
Sapling/Shrub Stratum (Plot size: <u>25' x 25'</u>)																		
1. <u>Serenoa repens</u> (Palmetto, saw)	50	Y		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 60%;">Total % Cover of:</th> <th style="width: 40%;">Multiply by:</th> </tr> <tr> <td>OBL species _____</td> <td>x 1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x 2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x 3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x 4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x 5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	x 2 = _____	FAC species _____	x 3 = _____	FACU species _____	x 4 = _____	UPL species _____	x 5 = _____	Column Totals: _____	(A) _____ (B) _____
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = _____																	
FACW species _____	x 2 = _____																	
FAC species _____	x 3 = _____																	
FACU species _____	x 4 = _____																	
UPL species _____	x 5 = _____																	
Column Totals: _____	(A) _____ (B) _____																	
2. <u>Quercus nigra</u> (Oak, water)	15		FAC															
3. <u>Sabal palmetto</u> (Palm, cabbage)	15																	
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
80 = Total Cover																		
25' x 25' <u>40</u>		20 % of total cover: <u>16</u>																
Herb Stratum (Plot size: _____)																		
1. _____				Hydrophytic Vegetation Indicators: <u>1</u> – Rapid Test for Hydrophytic Vegetation <u>X</u> 2 – Dominance Test is > 50% <u>3</u> – Prevalence Test is ≤ 3.0 ¹ <u>_____</u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
12. _____																		
0 = Total Cover																		
50 % of total cover: <u>0</u>		20 % of total cover: <u>0</u>																
Woody Vine Stratum (Plot size: <u>25' x 25'</u>)																		
1. <u>Vitis rotundifolia</u> (Grape, muscadine)	2	Y	FAC	Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.														
2. <u>Gelsemium sempervirens</u> (Jessamine, yellow)	1	Y	FAC															
3. <u>Parthenocissus quinquefolia</u> (Creeper, virginia)	1	Y	FACU															
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
4 = Total Cover																		
50 % of total cover: <u>2</u>		20 % of total cover: <u>0.8</u>																
				Hydrophytic Vegetation Present? Yes <u>X</u> No _____														
Remarks: (Include photo numbers here or on a separate sheet.)																		

SOIL

Sampling Point: Upland 17, 23, 38, 39, 50

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR3/1	95			N/A	N/A	Sandy	Fine sand
2-2.5	10YR5/1	3			N/A	N/A	N/A	
2.5-3	10YR1/1	2			N/A	N/A	N/A	
3-6	10YR4/3	100			N/A	N/A	Sandy	Fine sand
6-12	10YR4/4	100			N/A	N/A	Sandy	Fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☐ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
 (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes _____ No ☒ X**Remarks:**

0.5-inch layer of undecomposed plant material on soil surface

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 9, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: Wetland 13, 20, 28, 29, 33, 34, 35, 37, 40-45, 55
 Investigator(s): CSV Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRR or MLRA): MLRA 154/LRR U Lat: Long: Datum: NAD 83

Lat:	Long:	Lat:	Long?
13 28° 57' 58.772" N	82° 40' 20.507" W	37 28° 57' 48.565" N	82° 40' 54.208" W
20 28° 57' 46.698" N	82° 40' 37.139" W	40 28° 57' 54.082" N	82° 40' 52.997" W
28 28° 57' 50.909" N	82° 40' 44.479" W	41 28° 57' 57.216" N	82° 40' 52.101" W
29 28° 57' 49.611" N	82° 40' 45.097" W	42 28° 57' 58.451" N	82° 40' 56.763" W
33 28° 57' 50.567" N	82° 40' 47.935" W	43 28° 58' 0.858" N	82° 41' 0.204" W
34 28° 57' 55.958" N	82° 40' 48.395" W	45 28° 58' 8.903" N	82° 40' 56.232" W
35 28° 58' 5.948" N	82° 40' 42.289" W	55 28° 57' 59.022" N	82° 40' 24.513" W

Soil Map Unit Name: Boca find sand NWI Classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? No Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u></u> Hydric Soil Present? Yes <u></u> No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No <u></u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u></u>
Remarks: Area cleared in the past; has had some earthworking	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☒ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☒ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☒ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u>X</u> No <u></u> Depth (inches): <u>10</u> Saturation Present? Yes <u>X</u> No <u></u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u></u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 		
Remarks:		

VEGETATION (Four Strata) - Use scientific names of plants.

 Sampling Point Wetland 13 ,20, 28, 29, 33, 34, 35, 37, 40-45, 55

Tree Stratum (Plot size: 30' diameter)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Quercus laurifolia (Oak, laurel)</u>	70	Y	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. <u>Ilex cassine (Holly, dahoon)</u>	10			
3. <u>Sabal palmetto (Palm, cabbage)</u>	10			
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
90 = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
50 % of total cover: <u>45</u> 20 % of total cover: <u>18</u>				
Sapling/Shrub Stratum (Plot size: 30' diameter)				
1. <u>Sabal palmetto (Palm, cabbage)</u>	10	Y		
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
10 = Total Cover				Hydrophytic Vegetation Indicators: <u>1</u> – Rapid Test for Hydrophytic Vegetation <u>X</u> 2 – Dominance Test is > 50% <u>3</u> – Prevalence Test is ≤ 3.0 ¹ _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5 20 % of total cover: <u>2</u>				
Herb Stratum (Plot size: _____)				
1. <u>Sabal palmetto (Palm, cabbage)</u>	5	Y		
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
5 = Total Cover				Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
50 % of total cover: <u>2.5</u> 20 % of total cover: <u>1</u>				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
0 = Total Cover				
50 % of total cover: <u>0</u> 20 % of total cover: <u>0</u>				
Remarks: (Include photo numbers here or on a separate sheet.) Dense shade and leaf litter excludes herbaceous cover				

Hydrophytic Vegetation Present?
 Yes X No _____

SOIL

 Wetland 13 ,20, 28, 29, 33,
 Sampling Point: 34, 35, 37, 40-45, 55

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR4/3	100			N/A	N/A	Loam	Duff/leaf rocky

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
☐ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P, T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Gleyed Matrix (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Ochric (F11) **(MLRA 151)**
☐ Iron Manganese Masses (F12) **(LRR O, P, T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Ochric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20)
(MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes _____ No ☒ X**Remarks:**

Soil is rocky, loamy, and saturated; some earthworking

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 9, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: Upland 13, 20, 28, 29, 33, 34, 35, 37, 40-45, 55
 Investigator(s): CSV MS Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Slope (%): 1
 Subregion (LRR or MLRA): Lat: Long: Datum: NAD 83

Lat:	Long:	Lat:	Long?
13 28° 57' 58.772" N	82° 40' 20.507" W	37 28° 57' 48.565" N	82° 40' 54.208" W
20 28° 57' 46.698" N	82° 40' 37.139" W	40 28° 57' 54.082" N	82° 40' 52.997" W
28 28° 57' 50.909" N	82° 40' 44.479" W	41 28° 57' 57.216" N	82° 40' 52.101" W
29 28° 57' 49.611" N	82° 40' 45.097" W	42 28° 57' 58.451" N	82° 40' 56.763" W
33 28° 57' 50.567" N	82° 40' 47.935" W	43 28° 58' 0.858" N	82° 41' 0.204" W
34 28° 57' 55.958" N	82° 40' 48.395" W	45 28° 58' 8.903" N	82° 40' 56.232" W
35 28° 58' 5.948" N	82° 40' 42.289" W	55 28° 57' 59.022" N	82° 40' 24.513" W

Soil Map Unit Name: Hallandale-rock outcrop complex/Boca fine sand NWI Classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? No Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u> </u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) - Use scientific names of plants.

Upland 13, 20, 28, 29, 33,
Sampling Point 34, 35, 37, 40-45, 55

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Quercus virginiana (Oak, live)</u>	60	Y	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)
2. <u>Juniperus virginiana (Cedar, eastern red)</u>			FACU	
3. <u>Sabal palmetto (Palm, cabbage)</u>				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
60 = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>70</u> x 4 = <u>280</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>80</u> (A) <u>310</u> (B) Prevalence Index = B/A = <u>3.88</u>
50 % of total cover: <u>30</u>		20 % of total cover: <u>12</u>		
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Morella cerifera (Wax myrtle)</u>	10	Y	FAC	
2. <u>Callicarpa americana (Beauty-berry, american)</u>	5	Y	FACU	Hydrophytic Vegetation Indicators: <u>1</u> – Rapid Test for Hydrophytic Vegetation <u>2</u> – Dominance Test is > 50% <u>3</u> – Prevalence Test is ≤ 3.0 ¹ <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3. <u>Rhus copallinum (Sumac, winged)</u>	5	Y	NI	
4. <u>Sabal palmetto (Palm, cabbage)</u>	5	Y		
5. _____				
6. _____				
7. _____				
8. _____				
25 = Total Cover				
12.5		20 % of total cover: <u>5</u>		
Herb Stratum (Plot size: _____)				Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
1. <u>Thelypteris kunthii (Fern, widespread maiden)</u>	5	Y		
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
5 = Total Cover				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
50 % of total cover: <u>2.5</u>		20 % of total cover: <u>1</u>		
Woody Vine Stratum (Plot size: _____)				
1. <u>Parthenocissus quinquefolia (Creeper, virginia)</u>	5	Y	FACU	
2. _____				
3. _____				
4. _____				
5. _____				
5 = Total Cover				
50 % of total cover: <u>2.5</u>		20 % of total cover: <u>1</u>		
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: Upland 13, 20, 28, 29, 33,
34, 35, 37, 40-45, 55**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
1	10YR3/4	100			N/A	N/A	Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☐ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
☐ (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes _____ No ☒ X**Remarks:**

Limestone prevented deeper sampling

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 9, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: W:15,60,63
 Investigator(s): CEV SM Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave Slope (%): <1
 Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: WGS84
 Soil Map Unit Name: _____ NWI Classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks: Small area to where water pools		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Aquatic Fauna (B13) _____ High Water Table (A2) _____ Marl Deposits (B15) (LRR U) <u>X</u> Saturation (A3) _____ Hydrogen Sulfide Odor (C1) _____ Water Marks (B1) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Sediment Deposits (B2) _____ Presence of Reduced Iron (C4) _____ Drift Deposits (B3) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Algal Mat or Crust (B4) _____ Thin Muck Surface (C7) _____ Iron Deposits (B5) _____ Other (Explain in Remarks) _____ Inundation Visible on Aerial Imagery (B7) _____ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) <u>X</u> Sparsely Vegetated Concave Surface (B8) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) <u>X</u> Geomorphic Position (D2) _____ Shallow Aquitard (D3) <u>X</u> FAC-Neutral Test (D5) _____ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>2</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Tree Stratum (Plot size: 15' diameter)				Dominance Test worksheet:	
1. <u>Quercus laurifolia (Oak, laurel)</u>	50	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A)	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
	50	= Total Cover		Total Number of Dominant Species Across All Strata: <u>7</u> (B)	
50 % of total cover: <u>25</u>		20 % of total cover: <u>10</u>		Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
Sapling/Shrub Stratum (Plot size: 15' diameter)				Prevalence Index worksheet:	
1. <u>Cephalanthus occidentalis (Buttonbush, common)</u>	5	Y	OBL	Total % Cover of: _____	Multiply by: _____
2. <u>Morella cerifera (Wax myrtle)</u>	5	Y	FAC	OBL species _____	x 1 = _____
3. <u>Cornus foemina (Dogwood, stiff)</u>	2		FAC	FACW species _____	x 2 = _____
4. _____				FAC species _____	x 3 = _____
5. _____				FACU species _____	x 4 = _____
6. _____				UPL species _____	x 5 = _____
7. _____				Column Totals: _____	(A) _____ (B) _____
8. _____				Prevalence Index = B/A = _____	
	12	= Total Cover		Hydrophytic Vegetation Indicators:	
15' diameter <u>6</u>		20 % of total cover: <u>2.4</u>		1 – Rapid Test for Hydrophytic Vegetation	
Herb Stratum (Plot size: _____)				X 2 – Dominance Test is > 50%	
1. <u>Rhynchospora colorata (Starrush whitetop)</u>	10	Y	FACW	3 – Prevalence Test is ≤ 3.0 ¹	
2. <u>Rhynchospora caduca (Beakrush, falling)</u>	5	Y	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)	
3. <u>Rhynchospora cephalantha (Beakrush, clustered)</u>	5	Y	OBL	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
4. <u>Thelypteris palustris (Thelypteris thelypteroides)</u>	1		NI	Definitions of Vegetation Strata:	
5. _____				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
6. _____				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
7. _____				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
8. _____				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
9. _____				Woody vine – All woody vines, regardless of height.	
10. _____					
11. _____					
12. _____					
	21	= Total Cover		Hydrophytic Vegetation Present? Yes <u>X</u> No _____	
50 % of total cover: <u>10.5</u>		20 % of total cover: <u>4.2</u>			
Woody Vine Stratum (Plot size: 15' diameter)					
1. <u>Vitis rotundifolia (Grape, muscadine)</u>	2	Y	FAC		
2. _____					
3. _____					
4. _____					
5. _____					
	2	= Total Cover			
50 % of total cover: <u>1</u>		20 % of total cover: <u>0.4</u>			
Remarks: (Include photo numbers here or on a separate sheet.)					

SOIL

Sampling Point: W: 15,60,63

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
2					N/A	N/A	N/A	Leaf/mold/duff
2-5	10YR2/1	100			N/A	N/A	Muck	
5-12	10YR3/1	100			N/A	N/A	Muck	Mucky loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
(MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 9, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: U;15,60,63
 Investigator(s): CEV MS Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): <1
 Subregion (LRR or MLRA): LRR U Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI Classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No _____
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present?	Yes _____ No <u>X</u>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Aquatic Fauna (B13) _____ High Water Table (A2) _____ Marl Deposits (B15) (LRR U) _____ Saturation (A3) _____ Hydrogen Sulfide Odor (C1) _____ Water Marks (B1) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Sediment Deposits (B2) _____ Presence of Reduced Iron (C4) _____ Drift Deposits (B3) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Algal Mat or Crust (B4) _____ Thin Muck Surface (C7) _____ Iron Deposits (B5) _____ Other (Explain in Remarks) _____ Inundation Visible on Aerial Imagery (B7) _____ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Sparsely Vegetated Concave Surface (B8) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ FAC-Neutral Test (D5) _____ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Tree Stratum (Plot size: _____)				Dominance Test worksheet:	
1. <u>Liquidambar styraciflua (Gum,sweet)</u>	5	Y	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u>	(A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)	
4. _____	_____	_____	_____	Prevalence Index worksheet:	
5. _____	_____	_____	_____	Total % Cover of: _____	Multiply by: _____
6. _____	_____	_____	_____	OBL species <u>0</u>	x 1 = <u>0</u>
7. _____	_____	_____	_____	FACW species <u>0</u>	X 2 = <u>0</u>
8. _____	_____	_____	_____	FAC species <u>35</u>	X 3 = <u>105</u>
50 % of total cover: <u>2.5</u> 20 % of total cover: <u>1</u>				FACU species <u>30</u>	X 4 = <u>120</u>
5 = Total Cover				UPL species <u>0</u>	X 5 = <u>0</u>
Sapling/Shrub Stratum (Plot size: _____)				Column Totals: <u>65</u> (A) <u>225</u> (B)	
1. <u>Morella cerifera (Wax myrtle)</u>	20	Y	FAC	Prevalence Index = B/A = <u>3.46</u>	
2. <u>Diospyros virginiana (Persimmon,common)</u>	5	_____	FAC	Hydrophytic Vegetation Indicators:	
3. <u>Liquidambar styraciflua (Gum,sweet)</u>	5	_____	FAC	1 – Rapid Test for Hydrophytic Vegetation	
4. <u>Sabal palmetto (Palm,cabbage)</u>	5	_____	_____	2 – Dominance Test is > 50%	
5. <u>Serenoa repens (Palmetto,saw)</u>	2	_____	_____	3 – Prevalence Test is ≤ 3.0 ¹	
6. _____	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)	
7. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
8. _____	_____	_____	_____	Definitions of Vegetation Strata:	
50 % of total cover: <u>18.5</u> 20 % of total cover: <u>7.4</u>				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
37 = Total Cover				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
Herb Stratum (Plot size: _____)				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
1. <u>Andropogon virginicus (Broom-sedge)</u>	20	Y	FACU	Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
2. <u>Paspalum notatum (Grass,bahia)</u>	10	Y	FACU	Woody vine – All woody vines, regardless of height.	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	
4. _____	_____	_____	_____	Remarks: (Include photo numbers here or on a separate sheet.)	
5. _____	_____	_____	_____	Low diversity; land is regenerating cover after clearing.	
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
12. _____	_____	_____	_____		
50 % of total cover: <u>15</u> 20 % of total cover: <u>6</u>					
30 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
50 % of total cover: <u>0</u> 20 % of total cover: <u>0</u>					
0 = Total Cover					

SOIL

Sampling Point: U:15,60,63**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR6/1	100			N/A	N/A	Sandy	Fine, gray sand
3-12	10YR6/4	100			N/A	N/A	Sandy	Fine, yellow sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☐ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
☐ (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 20, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: 56-2-W
 Investigator(s): CEV MS Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave Slope (%): ~1
 Subregion (LRR or MLRA): LRR U Lat: 28° 57' 58.518" N Long: 82° 40' 23.491" W Datum: NAD 83
 Soil Map Unit Name: Boca fine sand NWI Classification: PSS
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Water in solution hole has left rusty stains on vegetation		

Tree Stratum (Plot size: 20' radius)				Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Pinus elliottii</i> (Pine,slash)	5	Y	NI			
2. <i>Quercus laurifolia</i> (Oak,laurel)	5	Y	FACW			
3. _____						
4. _____						
5. _____						
6. _____						
7. _____						
8. _____						
	10	= Total Cover				
50 % of total cover: 5	20	% of total cover: 2				

Sapling/Shrub Stratum (Plot size: 20' radius)				Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Quercus laurifolia</i> (Oak,laurel)	10	Y	FACW			
2. <i>Sideroxylon reclinatum</i> (Florida bully)	10	Y	FAC			
3. <i>Cephalanthus occidentalis</i> (Buttonbush,common)	5		OBL			
4. <i>Morella cerifera</i> (Wax myrtle)	5		FAC			
5. <i>Diospyros virginiana</i> (Persimmon,common)	2		FAC			
6. <i>Hypericum apocynifolium</i> (St. john's-wort)			NI			
7. _____						
8. _____						
	32	= Total Cover				
20' radius 16	20	% of total cover: 6.4				

Herb Stratum (Plot size: _____)				Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Aristida stricta</i> (Grass,pineland three-awn)	20	Y				
2. <i>Axonopus furcatus</i> (Grass,big carpet)	20	Y	FACW			
3. <i>Eryngium baldwinii</i> (Coyote-thistle,baldwin's)	10	Y				
4. <i>Rhynchospora colorata</i> (Starrush whitetop)	10	Y	FACW			
5. <i>Sabatia angularis</i> (Rose-gentian,square-stem)	10	Y	FAC			
6. <i>Pluchea baccharis</i> (Rosy camphorweed)	5		FACW			
7. <i>Polygala baldwinii</i> (Milkwort)	5					
8. <i>Saccharum giganteum</i> (Sugarcane plumegrass)	5		FACW			
9. <i>Syngonanthus flavidulus</i> (Bantam-buttons)	5					
10. <i>Coreopsis leavenworthii</i> (Tickseed,leavenworth's)	3					
11. <i>Mitreola petiolata</i> (Hornpod, lax)	1		FACW			
12. _____	FAC					
	94	= Total Cover				
50 % of total cover: 47	20	% of total cover: 18.8				

Woody Vine Stratum (Plot size: _____)				Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Smilax bona-nox</i> (Greenbrier,saw)	5	Y	FACU			
2. <i>Vitis rotundifolia</i> (Grape,muscadine)	5	Y	FAC			
3. _____						
4. _____						
5. _____						
	10	= Total Cover				
50 % of total cover: 5	20	% of total cover: 2				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B) _____

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 – Rapid Test for Hydrophytic Vegetation

X 2 – Dominance Test is > 50%

3 – Prevalence Test is ≤ 3.0¹

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

**Hydrophytic
Vegetation
Present?**

Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: 56-2-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
8	7.5YR2.5/2	100			N/A	N/A	Loam	Some pebbles

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☐ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
 (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes _____ No ☒ X**Remarks:**

Rocky soil prevented deeper sampling

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 9, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: 56-2-U
 Investigator(s): CEV MS Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28° 57' 58.518" N Long: 82° 40' 23.491" W Datum: NAD 83
 Soil Map Unit Name: Boca fine sand NWI Classification: NA
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Tree Stratum (Plot size: 20' radius)				Dominance Test worksheet:	
	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Pinus elliotii (Pine,slash)</u>	25	Y	NI	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)	
2. <u>Juniperus virginiana (Cedar,eastern red)</u>	5		FACU	Total Number of Dominant Species Across All Strata: <u>3</u> (B)	
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3</u> (A/B)	
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
			30 = Total Cover		
50 % of total cover: <u>15</u>			20 % of total cover: <u>6</u>		
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:	
				Total % Cover of:	Multiply by:
1. <u>Sabal palmetto (Palm,cabbage)</u>	10	Y		OBL species <u>0</u>	x 1 = <u>0</u>
2. <u>Sideroxylon reclinatum (Florida bully)</u>	10	Y	FAC	FACW species <u>10</u>	X 2 = <u>20</u>
3. <u>Baccharis halimifolia (False-willow,eastern)</u>	5		FACW	FAC species <u>15</u>	X 3 = <u>45</u>
4. <u>Juniperus virginiana (Cedar,eastern red)</u>	5		FACU	FACU species <u>44</u>	X 4 = <u>176</u>
5. <u>Morella cerifera (Wax myrtle)</u>	5		FAC	UPL species <u>0</u>	X 5 = <u>0</u>
6. <u>Pinus elliotii (Pine,slash)</u>	5		NI	Column Totals: <u>69</u>	(A) <u>241</u> (B)
7. _____				Prevalence Index = B/A = <u>3.49</u>	
8. _____					
			40 = Total Cover		
20 % of total cover: <u>20</u>			20 % of total cover: <u>8</u>		
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. <u>Andropogon virginicus (Broom-sedge)</u>	25	Y	FACU	<u>1</u> – Rapid Test for Hydrophytic Vegetation	
2. <u>Aristida stricta (Grass,pineland three-awn)</u>	10	Y		<u>2</u> – Dominance Test is > 50%	
3. <u>Phyla nodiflora (Frog-fruit,common)</u>	5		FACW	<u>3</u> – Prevalence Test is ≤ 3.0 ¹	
4. <u>Rubus trivialis (Dewberry,southern)</u>	5		FACU	<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)	
5. <u>Rudbeckia hirta (Susan,black-eyed)</u>	1		FACU	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
6. _____				Definitions of Vegetation Strata:	
7. _____				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
8. _____				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
9. _____				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
10. _____				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
11. _____				Woody vine – All woody vines, regardless of height.	
12. _____					
			46 = Total Cover		
50 % of total cover: <u>23</u>			20 % of total cover: <u>9.2</u>		
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present?	
1. <u>Smilax bona-nox (Greenbrier,saw)</u>	3	Y	FACU	Yes	No <u>X</u>
2. _____					
3. _____					
4. _____					
5. _____					
			3 = Total Cover		
50 % of total cover: <u>1.5</u>			20 % of total cover: <u>0.6</u>		
Remarks: (Include photo numbers here or on a separate sheet.) Considerable leaf/pine needle cover					

SOIL

Sampling Point: 56-2-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
1.5	7.5YR3/2	100			N/A	N/A	Loam	Pebbles, stony soil

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☐ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
(MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes _____ No ☒ X**Remarks:**

Rock (limestone) prevented deeper sampling.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 9, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: 61-6-W
 Investigator(s): CEV MS Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28° 57' 57.502" N Long: 82° 40' 14.395" W Datum: NAD 83
 Soil Map Unit Name: Boca fine Sand NWI Classification: PSS
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? No Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	
Remarks: Buttonbush swamp		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☒ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☒ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>30</u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 		
Remarks: 		

Tree Stratum (Plot size: 30' diameter)				Dominance Test worksheet:	
	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Quercus laurifolia (Oak, laurel)</u>	20	Y	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)	
2. _____					
3. _____					
4. _____				Total Number of Dominant Species Across All Strata: <u>5</u> (B)	
5. _____					
6. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
7. _____					
8. _____					
			20 = Total Cover		
50 % of total cover: <u>10</u>			20 % of total cover: <u>4</u>		
Sapling/Shrub Stratum (Plot size: 30' diameter)					
1. <u>Cephalanthus occidentalis (Buttonbush, common)</u>	25	Y	OBL		
2. <u>Morella cerifera (Wax myrtle)</u>	5		FAC		
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
			30 = Total Cover		
15			20 % of total cover: <u>6</u>		
Herb Stratum (Plot size: _____)					
1. <u>Juncus marginatus (Rush, grass-leaf)</u>	20	Y	FACW		
2. <u>Rhynchospora caduca (Beakrush, falling)</u>	20	Y	OBL		
3. <u>Juncus scirpoides (Rush, needle-pod)</u>	10		FACW		
4. <u>Paspalum floridanum (Paspalum, florida)</u>	10		FACW		
5. <u>Rhynchospora colorata (Starrush whitetop)</u>	10		FACW		
6. <u>Dichanthelium sp. ()</u>	1				
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
12. _____					
			71 = Total Cover		
50 % of total cover: <u>35.5</u>			20 % of total cover: <u>14.2</u>		
Woody Vine Stratum (Plot size: _____)					
1. <u>Ampelopsis arborea (Pepper-vine)</u>	5	Y	FACW		
2. _____					
3. _____					
4. _____					
5. _____					
			5 = Total Cover		
50 % of total cover: <u>2.5</u>			20 % of total cover: <u>1</u>		
Prevalence Index worksheet:					
			Total % Cover of:	Multiply by:	
OBL species _____				x 1 = _____	
FACW species _____				x 2 = _____	
FAC species _____				x 3 = _____	
FACU species _____				x 4 = _____	
UPL species _____				x 5 = _____	
Column Totals: _____				(A) _____ (B) _____	
Prevalence Index = B/A = _____					
Hydrophytic Vegetation Indicators:					
<u>1</u> – Rapid Test for Hydrophytic Vegetation					
<u>X</u> 2 – Dominance Test is > 50%					
<u>3</u> – Prevalence Test is ≤ 3.0 ¹					
<u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)					
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.					
Definitions of Vegetation Strata:					
Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).					
Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.					
Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.					
Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.					
Woody vine – All woody vines, regardless of height.					
Hydrophytic Vegetation Present? Yes <u>X</u> No _____					
Remarks: (Include photo numbers here or on a separate sheet.)					

SOIL

Sampling Point: 61-6-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
1.5					N/A	N/A	N/A	Leaf mold/ditritus, febric
1.5-2	10YR2/1				N/A	N/A	Muck	Muck pockets
2-4	10YR3/1				N/A	N/A	Sandy	
4-13	10YR6/4				N/A	N/A	N/A	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
☐ (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No ☐**Remarks:**

Wetland is rutted, which probably causes dewatering; soils appear to be oxidizing or new muck not being created.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 9, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: 61-6-U
 Investigator(s): CEV MS Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28° 57' 57.502" N Long: 82° 40' 14.395" W Datum: NAD 83
 Soil Map Unit Name: Boca fine sand NWI Classification:
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☐ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status															
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
50 % of total cover: <u>0</u>		0 = Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr><td>OBL species _____</td><td>x 1 = _____</td></tr> <tr><td>FACW species _____</td><td>X 2 = _____</td></tr> <tr><td>FAC species _____</td><td>X 3 = _____</td></tr> <tr><td>FACU species _____</td><td>X 4 = _____</td></tr> <tr><td>UPL species _____</td><td>X 5 = _____</td></tr> <tr><td>Column Totals: _____</td><td>(A) _____ (B) _____</td></tr> </table> Prevalence Index = B/A = _____	Total % Cover of:	Multiply by:	OBL species _____	x 1 = _____	FACW species _____	X 2 = _____	FAC species _____	X 3 = _____	FACU species _____	X 4 = _____	UPL species _____	X 5 = _____	Column Totals: _____	(A) _____ (B) _____
Total % Cover of:	Multiply by:																	
OBL species _____	x 1 = _____																	
FACW species _____	X 2 = _____																	
FAC species _____	X 3 = _____																	
FACU species _____	X 4 = _____																	
UPL species _____	X 5 = _____																	
Column Totals: _____	(A) _____ (B) _____																	
20 % of total cover: <u>0</u>																		
Sapling/Shrub Stratum (Plot size: _____)																		
1. <u>Sabal palmetto (Palm,cabbage)</u>	<u>30</u>	<u>Y</u>																
2. <u>Baccharis halimifolia (False-willow,eastern)</u>	<u>25</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Morella cerifera (Wax myrtle)</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>															
4. <u>Rubus pensilvanicus (Pennsylvania blackberry)</u>	<u>10</u>																	
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
42.5 = Total Cover		85																
20 % of total cover: <u>17</u>																		
Herb Stratum (Plot size: _____)																		
1. <u>Eupatorium capillifolium (Thorough-wort,small dog-</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>															
2. <u>Rubus trivialis (Dewberry,southern)</u>	<u>15</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Andropogon virginicus (Broom-sedge)</u>	<u>5</u>		<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
12. _____	_____	_____	_____															
35 = Total Cover																		
50 % of total cover: <u>17.5</u>		20 % of total cover: <u>7</u>																
Woody Vine Stratum (Plot size: _____)																		
1. <u>Campsis radicans (Trumpet-creeper)</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
10 = Total Cover																		
50 % of total cover: <u>5</u>		20 % of total cover: <u>2</u>																
Remarks: (Include photo numbers here or on a separate sheet.)																		

Hydrophytic Vegetation Present? Yes X No _____

SOIL

Sampling Point: 61-6-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
4					N/A	N/A	N/A	Febric leaf duff
4-12	10YR5/2				N/A	N/A	N/A	Fine, brown sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
☐ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P, T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Gleyed Matrix (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Ochric (F11) **(MLRA 151)**
☐ Iron Manganese Masses (F12) **(LRR O, P, T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Ochric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20)
(MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes _____ No ☒ X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 11, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: 67-2-W
 Investigator(s): CEV MS Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave Slope (%): <2
 Subregion (LRR or MLRA): LRR U Lat: 28° 58' 8.367" N Long: 82° 40' 40.695" W Datum: NAD 83
 Soil Map Unit Name: Hallandale-rock outcrop complex NWI Classification: PSS
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil X, or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>	
Remarks: Area impacted by logging and earthmoving.		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Aquatic Fauna (B13) ☐ High Water Table (A2) ☐ Marl Deposits (B15) (LRR U) ☐ Saturation (A3) ☐ Hydrogen Sulfide Odor (C1) ☒ Water Marks (B1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Sediment Deposits (B2) ☐ Presence of Reduced Iron (C4) ☐ Drift Deposits (B3) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Algal Mat or Crust (B4) ☐ Thin Muck Surface (C7) ☐ Iron Deposits (B5) ☐ Other (Explain in Remarks) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☒ FAC-Neutral Test (D5) ☐ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>11.5</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
50 % of total cover: <u>0</u>		0 = Total Cover 20 % of total cover: <u>0</u>		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ X 2 = _____ FAC species _____ X 3 = _____ FACU species _____ X 4 = _____ UPL species _____ X 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>50' diameter</u>)				
1. <u>Morella cerifera (Wax myrtle)</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Sabal palmetto (Palm, cabbage)</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Cephalanthus occidentalis (Buttonbush, common)</u>	<u>3</u>	_____	<u>OBL</u>	
4. <u>Quercus laurifolia (Oak, laurel)</u>	<u>3</u>	_____	<u>FACW</u>	
5. <u>Diospyros virginiana (Persimmon, common)</u>	<u>2</u>	_____	<u>FAC</u>	
6. <u>Pinus elliotii (Pine, slash)</u>	<u>2</u>	_____	<u>NI</u>	
50' diameter <u>10</u>		20 = Total Cover 20 % of total cover: <u>4</u>		
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: <u>1</u> – Rapid Test for Hydrophytic Vegetation <u>X</u> 2 – Dominance Test is > 50% <u>3</u> – Prevalence Test is ≤ 3.0 ¹ <u>_____</u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Rhynchospora caduca (Beakrush, falling)</u>	<u>25</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Juncus marginatus (Rush, grass-leaf)</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Panicum rigidulum (Grass, red-top panic)</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	
4. <u>Eryngium baldwinii (Coyote-thistle, baldwin's)</u>	<u>5</u>	_____	_____	
5. <u>Fimbristylis castanea (Fimbry, marsh)</u>	<u>5</u>	_____	<u>OBL</u>	
6. <u>Paspalum floridanum (Paspalum, florida)</u>	<u>5</u>	_____	<u>FACW</u>	
7. <u>Pluchea baccharis (Rosy camphorweed)</u>	<u>3</u>	_____	<u>FACW</u>	
8. <u>Centella asiatica (Coinleaf, asian)</u>	<u>2</u>	_____	<u>FACW</u>	
9. <u>Dichanthelium sp. ()</u>	<u>1</u>	_____	_____	
10. <u>Hypericum hypericoides (St. andrews's cross)</u>	<u>1</u>	_____	<u>FAC</u>	
11. <u>Ludwigia grandiflora (Largeflower primrosewillow)</u>	<u>1</u>	_____	<u>OBL</u>	
50 % of total cover: <u>39</u>		78 = Total Cover 20 % of total cover: <u>15.6</u>		
Woody Vine Stratum (Plot size: _____)				Definitions of Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50 % of total cover: <u>0</u>		0 = Total Cover 20 % of total cover: <u>0</u>		
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____

SOIL

Sampling Point: 67-2-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
1-5	10YR6/1	50	10YR2/1	50	N/A	N/A	Sandy	Organics in sand
1.5-5	10YR3/1	100			N/A	N/A	Sandy	
5-11	10YR6/2	90	7.5YR6/6	10	N/A	M	Sandy	
11-16	10YR6/3	100			N/A	N/A	Sandy	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☐ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
☐ (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes _____ No ☒ X**Remarks:**

Disturbed soils; logging, earthmoving, ruts.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Duke CCC Project City/County: Citrus Sampling Date: Jun 11, 2014
 Applicant/Owner: Duke Energy Florida State: Florida Sampling Point: 67-U
 Investigator(s): AGS EN Section, Township, Range: Secs 26 and 27, T 17S, R 16E
 Landform (hillslope, terrace, etc.): Slope to wetland Local relief (concave, convex, none): concave Slope (%): 3
 Subregion (LRR or MLRA): LRR U Lat: 28° 58' 8.367" N Long: 82° 40' 40.695" W Datum: NAD 83
 Soil Map Unit Name: Hallandale-rock outcrop complex NWI Classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
 Are Vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
 Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes ____ No <u>X</u>
Hydric Soil Present?	Yes ____ No <u>X</u>	
Wetland Hydrology Present?	Yes ____ No <u>X</u>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ____ Surface Water (A1) ____ Aquatic Fauna (B13) ____ High Water Table (A2) ____ Marl Deposits (B15) (LRR U) ____ Saturation (A3) ____ Hydrogen Sulfide Odor (C1) ____ Water Marks (B1) ____ Oxidized Rhizospheres on Living Roots (C3) ____ Sediment Deposits (B2) ____ Presence of Reduced Iron (C4) ____ Drift Deposits (B3) ____ Recent Iron Reduction in Tilled Soils (C6) ____ Algal Mat or Crust (B4) ____ Thin Muck Surface (C7) ____ Iron Deposits (B5) ____ Other (Explain in Remarks) ____ Inundation Visible on Aerial Imagery (B7) ____ Water-Stained Leaves (B9)		<u>Secondary Indicators (minimum of two required)</u> ____ Surface Soil Cracks (B6) ____ Sparsely Vegetated Concave Surface (B8) ____ Drainage Patterns (B10) ____ Moss Trim Lines (B16) ____ Dry-Season Water Table (C2) ____ Crayfish Burrows (C8) ____ Saturation Visible on Aerial Imagery (C9) ____ Geomorphic Position (D2) ____ Shallow Aquitard (D3) ____ FAC-Neutral Test (D5) ____ Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes ____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes ____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes ____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes ____ No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Tree Stratum (Plot size: 25' x 25')				Dominance Test worksheet:	
1. <u>Quercus virginiana (Oak, live)</u>	25	Y	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u>	(A)
2. _____				Total Number of Dominant Species Across All Strata: <u>3</u>	(B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3</u>	(A/B)
4. _____				Prevalence Index worksheet:	
5. _____				Total % Cover of:	Multiply by:
6. _____				OBL species <u>0</u>	x 1 = <u>0</u>
7. _____				FACW species <u>0</u>	x 2 = <u>0</u>
8. _____				FAC species <u>15</u>	x 3 = <u>45</u>
25 = Total Cover				FACU species <u>28</u>	x 4 = <u>112</u>
50 % of total cover: <u>12.5</u>				UPL species <u>5</u>	x 5 = <u>25</u>
20 % of total cover: <u>5</u>				Column Totals: <u>48</u>	(A) <u>182</u> (B)
Sapling/Shrub Stratum (Plot size: 25' x 25')				Prevalence Index = B/A = <u>3.79</u>	
1. <u>Serenoa repens (Palmetto, saw)</u>	20	Y		Hydrophytic Vegetation Indicators:	
2. <u>Morella cerifera (Wax myrtle)</u>	5		FAC	1 – Rapid Test for Hydrophytic Vegetation	
3. <u>Rubus cuneifolius (Blackberry, sand)</u>	5		UPL	2 – Dominance Test is > 50%	
4. <u>Viburnum obovatum (Viburnum, walter)</u>	5			3 – Prevalence Test is ≤ 3.0 ¹	
5. <u>Sabal palmetto (Palm, cabbage)</u>	2			Problematic Hydrophytic Vegetation ¹ (Explain)	
6. _____				1 ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7. _____				Definitions of Vegetation Strata:	
8. _____				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
37 = Total Cover				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
25' x 25' <u>18.5</u>				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
20 % of total cover: <u>7.4</u>				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
Herb Stratum (Plot size: _____)				Woody vine – All woody vines, regardless of height.	
1. <u>Dichanthelium sp. ()</u>	5	Y		Hydrophytic Vegetation Present?	
2. <u>Andropogon virginicus (Broom-sedge)</u>	3	Y	FACU	Yes _____	No <u>X</u>
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
12. _____					
8 = Total Cover					
50 % of total cover: <u>4</u>					
20 % of total cover: <u>1.6</u>					
Woody Vine Stratum (Plot size: 25' x 25')					
1. <u>Vitis rotundifolia (Grape, muscadine)</u>	10	Y	FAC		
2. _____					
3. _____					
4. _____					
5. _____					
10 = Total Cover					
50 % of total cover: <u>5</u>					
20 % of total cover: <u>2</u>					
Remarks: (Include photo numbers here or on a separate sheet.)					

SOIL

Sampling Point: 67-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR5/1				N/A	N/A	N/A	Grey sand
3-12	10YR6/6				N/A	N/A	N/A	Brownish-yellow sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P, T, U)
☐ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P, T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Gleyed Matrix (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Ochric (F11) (MLRA 151)
☐ Iron Manganese Masses (F12) (LRR O, P, T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Ochric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A,B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
☐ (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?Yes _____ No ☒ X**Remarks:**

Upland point. Well-drained sand.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 10/29/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AK
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 33 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28.961976 Long: -82.693900 Datum: WGS84
 Soil Map Unit Name: Quartzipsamments, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are circumstances normal? Yes ☒ No ☐
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☐ Marl Deposits (B15) (LRR U)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Dry-Season Water Table (C2)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)	
☒ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)	
		☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u> </u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u> </u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants

Sampling Point: _____ AK

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>5</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>5</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100.00</u> (A/B)
4. _____	_____	_____	_____	Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____	
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
0 = Total Cover					
Sapling Stratum (Plot size: _____)					
1. <i>Salix caroliniana</i>	40	yes	OBL	Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalance Index is $\leq 3.0^1$ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <i>Sabal palmetto</i>	5	no	FAC		
3. <i>Fraxinus caroliniana</i>	1	no	OBL		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
46 = Total Cover					
Shrub Stratum (Plot size: _____)					
1. <i>Cephalanthus occidentalis</i>	5	yes	OBL	Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.	
2. <i>Baccharis</i> sp.	1	no	FAC		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
6 = Total Cover					
Herb Stratum (Plot size: _____)					
1. <i>Typha</i> spp.	10	yes	OBL	Hydrophytic Vegetation Present? Yes ☒ No ☐	
2. <i>Diodia</i> spp.	5	no	FAC		
3. <i>Cyperus</i> spp.	5	no	FACW		
4. <i>Sagittaria</i> spp.	5	no	OBL		
5. <i>Pluchea odorata</i>	5	no	FACW		
6. <i>Ludwigia peruviana</i>	2	no	OBL		
7. <i>Spilanthes</i> spp.	2	no	FACW		
8. <i>Eupatorium serotinum</i>	1	no	FAC		
9. <i>Cladium</i> spp.	1	no	OBL		
10. <i>Erianthus</i> spp.	1	no	FAC		
11. _____	_____	_____	_____		
12. _____	_____	_____	_____		
37 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. <i>Mikania scandens</i>	20	yes	FACW		
2. <i>Ampelopsis arborea</i>	20	yes	FAC		
3. <i>Parthenocissus quinquefolia</i>	5	no	FAC		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
45 = Total Cover					

Remarks: (If observed, list morphological adaptations below).

Percent cover estimates based on meandering survey of the broader community.

County/soil: Citrus- Quartzsammments

Sampling Point: AK**SOIL****Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10 YR 4/2	100						dark grayish brown sand
			10 YR 6/2; 10 YR 8/1; 10 YR					
6-32	N 5/0; 10 YR 7/1	80	5/2	20	RM	M	splotches and pockets	gray and light gray sand
32-42	7 5 YR 5/8	80	5 YR 3/4	20	RM	M	splotches	strong brown sand
42-60	10 YR 5/2	100						grayish brown sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (**LRR P, T, U**)
☐ 5 cm Mucky Mineral (A7) (**LRR P,T,U**)
☒ Muck Presence (A8) (**LRR U**)
☐ 1 cm Muck (A9) (**LRR P,T**)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (**MLRA 150A**)
☐ Sandy Mucky Mineral (S1) (**LRR O, S**)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (**LRR P, S, T, U**)

☐ Polyvalue Below Surface (S8) (**LRR S, T, U**)
☐ Thin Dark Surface (S9) (**LRR S, T, U**)
☐ Loamy Mucky Mineral (F1) (**LRR O**)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (**LRR U**)
☐ Depleted Orchric (F11) (**MLRA 151**)
☐ Iron-Manganese Masses (F12) (**LRR O, P,T**)
☐ Umbric Surface (F13) (**LRR P, T, U**)
☐ Delta Orchric (F17) (**MLRA 151**)
☐ Reduced Vertic (F18) (**MLRA 150A, 150B**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
☐ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils ³

☐ 1 cm Muck (a9) (**LRR O**)
☐ 2 cm Muck (A10) (**LRR S**)
☐ Reduced Vertic (F18) (**outside MLRA 150A, B**)
☐ Piedmont Floodplain Soils (F19) (**LRR P, S, T**)
☐ Anomalous Bright Loamy Soils (F20) (**MLRA 153B**)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (**LRR T, U**)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (If observed)**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 10/29/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AM
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 33 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28.960983 Long: -82.693680 Datum: WGS84
 Soil Map Unit Name: Quartzipsamments, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are circumstances normal? Yes ☒ No ☐
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☒ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes ☒ No ☐ Depth (inches): <u>12</u> Water Table Present? Yes ☒ No ☐ Depth (inches): <u>0</u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants

Sampling Point: _____ AM

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>3</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100.00</u> (A/B)
4. _____	_____	_____	_____	Prevalance Index worksheet: Total % Cover of: Multiply by: OBL species x1= _____ FACW species x2= _____ FAC species x3= _____ FACU species x4= _____ UPL species x5= _____ Column Totals: _____ (A) _____ (B)	
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
Sapling Stratum (Plot size: _____) 0 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalance Index is $\leq 3.0^1$ ☐ Problematic Hydrophytic Vegetation ¹ (Explain)	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
Shrub Stratum (Plot size: _____) 0 = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
Herb Stratum (Plot size: _____) 0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____	
1. Cladium spp.	10	yes	OBL		
2. Spilanthes spp.	5	yes	FACW		
3. Proserpinaca spp.	5	yes	OBL		
4. Sesbania spp.	2	no	FAC		
5. Saururus cernuus	1	no	OBL		
6. Diodia spp.	1	no	FAC		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
Woody Vine Stratum (Plot size: _____) 24 = Total Cover					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ 0 = Total Cover					

Remarks: (If observed, list morphological adaptations below).
 Percent cover estimates based on meandering survey of the broader community.

County/soil: Citrus- Quartzsammments

SOILSampling Point: AM**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10 YR 4/2	100						dark grayish brown sand
			10 YR 6/2; 10 YR 8/1; 10 YR					
6-32	N 5/0; 10 YR 7/1	80	5/2	20	RM	M	splotches and pockets	gray and light gray sand
32-42	7 5 YR 5/8	80	5 YR 3/4	20	RM	M	splotches	strong brown sand
42-60	10 YR 5/2	100						grayish brown sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (**LRR P, T, U**)
☐ 5 cm Mucky Mineral (A7) (**LRR P,T,U**)
☒ Muck Presence (A8) (**LRR U**)
☐ 1 cm Muck (A9) (**LRR P,T**)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (**MLRA 150A**)
☐ Sandy Mucky Mineral (S1) (**LRR O, S**)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (**LRR P, S, T, U**)

☐ Polyvalue Below Surface (S8) (**LRR S, T, U**)
☐ Thin Dark Surface (S9) (**LRR S, T, U**)
☐ Loamy Mucky Mineral (F1) (**LRR O**)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (**LRR U**)
☐ Depleted Orchric (F11) (**MLRA 151**)
☐ Iron-Manganese Masses (F12) (**LRR O, P,T**)
☐ Umbric Surface (F13) (**LRR P, T, U**)
☐ Delta Orchric (F17) (**MLRA 151**)
☐ Reduced Vertic (F18) (**MLRA 150A, 150B**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
☐ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils ³

☐ 1 cm Muck (a9) (**LRR O**)
☐ 2 cm Muck (A10) (**LRR S**)
☐ Reduced Vertic (F18) (**outside MLRA 150A, B**)
☐ Piedmont Floodplain Soils (F19) (**LRR P, S, T**)
☐ Anomalous Bright Loamy Soils (F20) (**MLRA 153B**)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (**LRR T, U**)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (If observed)**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 10/29/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AN
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 33 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 960433 Long: -82.689096 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: Shrub wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: AN

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>9</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>9</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				Prevalance Index worksheet:
Sapling Stratum (Plot size: _____)				Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B)
1. Sabal palmetto	10	yes	FAC	
2. Salix caroliniana	10	yes	OBL	
3. Pinus elliotii	10	yes	FACW	
4. Chamaecyparis thyoides	10	yes	OBL	
5. Acer rubrum	5	no	OBL	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
45 = Total Cover				Prevalance Index = B/A = _____
Shrub Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. Baccharis sp.	60	yes	FAC	☒ Dominance Test is 50%
2. Myrica cerifera	30	yes	FAC	Prevalence Index is $\leq 3.0^1$
3. Ilex cassine	10	no	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
100 = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: _____)				Definitions of Vegetation Strata:
1. Andropogon glomeratus	20	yes	FACW	Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
2. Flaveria spp.	10	yes	FACW	Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.
3. Lobelia spp.	10	yes	OBL	Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
4. Cladium spp.	5	no	OBL	Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
5. Erianthus spp.	5	no	FAC	
6. Solidago spp.	5	no	FACU	
7. Hyptis alata	5	no	OBL	
8. Andropogon virginicus	5	no	FAC	
9. Rhynchospora colorata	2	no	OBL	
10. Eupatorium serotinum	1	no	FAC	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
68 = Total Cover				Woody vine- All woody vines, regardless of height.
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐
Remarks: (If observed, list morphological adaptations below).				
Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: AN**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/3/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AT
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 34 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 960845 Long: -82.671111 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: Shrub wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: AT

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>13</u> (A) Total Number of Dominant Species Across All Strata: <u>13</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
Sapling Stratum (Plot size: _____) 1. Liquidambar styraciflua 25 yes FAC 2. Acer rubrum 20 yes OBL 3. Carpinus caroliniana 20 yes FAC 4. Sabal palmetto 20 yes FAC 5. Ulmus americana 20 yes FACW 6. Quercus laurifolia 20 yes FACW 7. Diospyros virginiana 15 no FAC				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% Prevalence Index is $\leq 3.0^1$ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
140 = Total Cover				
Shrub Stratum (Plot size: _____) 1. Baccharis sp. 5 yes FAC 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____				
5 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
Herb Stratum (Plot size: _____) 1. Flaveria spp. 10 yes FACW 2. Andropogon virginicus 10 yes FAC 3. Andropogon glomeratus 10 yes FACW 4. Centella asiatica 10 yes FACW 5. Erianthus spp. 10 yes FAC 6. Thelypteris spp. 5 no FACW 7. Lobelia spp. 5 no OBL 8. Rhynchospora colorata 5 no OBL 9. Cladium spp. 5 no OBL 10. _____ 11. _____ 12. _____				
10. _____				
11. _____				
12. _____				
70 = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. Vitus rotundifolia 2 yes FAC 2. _____ 3. _____ 4. _____ 5. _____				
2 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____.
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: AT**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	light yellowish brown fine sand
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	very pale brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20)
 (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/2/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AR
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 34 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 960110 Long: -82.677790 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: AR

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
Sapling Stratum (Plot size: _____) 1. Fraxinus caroliniana 10 yes OBL 2. Diospyros virginiana 10 yes FAC 3. Persea palustris 10 yes NL 4. Sabal palmetto 5 no FAC 5. _____ 6. _____ 7. _____				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% Prevalence Index is $\leq 3.0^1$ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Shrub Stratum (Plot size: _____) 1. Ilex cassine 10 yes FACW 2. Myrica cerifera 10 yes FAC 3. _____ 4. _____ 5. _____ 6. _____ 7. _____				
35 = Total Cover				
Herb Stratum (Plot size: _____) 1. Imperata cylindrica 15 yes NL 2. Flaveria spp. 10 yes FACW 3. Cladium spp. 10 yes OBL 4. Erianthus spp. 10 yes FAC 5. Lobelia spp. 5 no OBL 6. Sagittaria spp. 5 no OBL 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ 12. _____				
20 = Total Cover				
Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____				
55 = Total Cover				
0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____.
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: AR**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/2/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AS
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 34 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28 960094 Long: -82.680652 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are circumstances normal? Yes ☒ No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No <u></u>	Is the Sampled Area within a Wetland? Yes ☒ No <u></u>
Hydric Soil Present?	Yes ☒ No <u></u>	
Wetland Hydrology Present?	Yes ☒ No <u></u>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Sparsely Vegetated Concave Surface (B8)
☒ Saturation (A3)	☐ Marl Deposits (B15) (LRR U)	☐ Drainage Patterns (B10)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Moss Trim Lines (B16)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)
		☐ FAC Neutral Test (D5)
Field Observations:		Wetland Hydrology Present? Yes ☒ No <u></u>
Surface Water Present?	Yes <u></u> No ☒ Depth (inches): <u></u>	
Water Table Present?	Yes <u></u> No ☒ Depth (inches): <u></u>	
Saturation Present?	Yes ☒ No <u></u> Depth (inches): <u>0-12</u>	
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: AS

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
35 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% Prevalence Index is $\leq 3.0^1$ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Shrub Stratum (Plot size: _____)				
1. <i>Ilex cassine</i>	10	yes	FACW	
2. <i>Myrica cerifera</i>	10	yes	FAC	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
20 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
Herb Stratum (Plot size: _____)				
1. <i>Imperata cylindrica</i>	15	yes	NL	
2. <i>Flaveria</i> spp.	10	yes	FACW	
3. <i>Cladium</i> spp.	10	yes	OBL	
4. <i>Erianthus</i> spp.	10	yes	FAC	
5. <i>Lobelia</i> spp.	5	no	OBL	
6. <i>Sagittaria</i> spp.	5	no	OBL	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
55 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: AS**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/2/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AP
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 34 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 959682 Long: -82.680804 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: AP

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>10</u> (A) Total Number of Dominant Species Across All Strata: <u>11</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>90.91</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B)
55 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% Prevalence Index is $\leq 3.0^1$ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
25 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
70 = Total Cover				
15 = Total Cover				
Hydrophytic Vegetation Present? Yes ☒ No _____.				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: AP**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)Type: Depth (inches):

Hydric Soil Present?

Yes ☒ No

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/4/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AV
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 34 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 981202 Long: -82.672224 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: AV

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
Sapling Stratum (Plot size: _____)				
1. Salix caroliniana	30	yes	OBL	
2. Quercus virginiana	5	no	FACU	
3. Persea palustris	5	no	NL	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
40 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalence Index is $\leq 3.0^1$ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Shrub Stratum (Plot size: _____)				
1. Cephalanthus occidentalis	5	yes	OBL	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
5 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
Herb Stratum (Plot size: _____)				
1. Erianthus spp.	40	yes	FAC	
2. Andropogon glomeratus	5	no	FACW	
3. Pluchea spp.	5	no	FACW	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
50 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
0 = Total Cover				
Hydrophytic Vegetation Present? Yes ☒ No ☐				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: AV**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/5/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AX
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 34 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 959857 Long: -82.672568 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: AX

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Sapling Stratum (Plot size: _____) 0 = Total Cover				Prevalance Index worksheet: Total % Cover of: OBL species x1= _____ FACW species x2= _____ FACU species x3= _____ UPL species x4= _____ Column Totals: _____ (A) Multiply by: _____ _____ _____ _____ _____ (B) Prevalance Index = B/A = _____
Shrub Stratum (Plot size: _____) 0 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: _____) 0 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
1. Solidago spp.	30	yes	FACU	
2. Erianthus spp.	30	yes	FAC	
3. Eryngium spp.	15	no	FACW	
4. Muhlenbergia spp.	10	no	FAC	
5. Lobelia spp.	5	no	OBL	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____) 90 = Total Cover				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
0 = Total Cover				
Hydrophytic Vegetation Present? Yes ☒ No ☐				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: AX**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/6/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AZ
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 34 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 960859 Long: -82.668928 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: AZ

Tree Stratum (Plot size: _____)				Dominance Test Worksheet:	
	Absolute % Cover	Dominant Species?	Indicator Status		
1. <i>Persea palustris</i>	20	yes	NL	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>8</u> (A)
2. <i>Quercus laurifolia</i>	15	yes	FACW	Total Number of Dominant Species Across All Strata:	<u>8</u> (B)
3. <i>Persea palustris</i>	10	no	NL	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100.00</u> (A/B)
4. <i>Fraxinus caroliniana</i>	10	no	OBL		
5. <i>Diospyros virginiana</i>	10	no	FAC		
6.					
7.					
65 = Total Cover				Prevalance Index worksheet:	
Sapling Stratum (Plot size: _____)				Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B)	
10 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% Prevalence Index is $\leq 3.0^1$ Problematic Hydrophytic Vegetation ¹ (Explain) _____	
Shrub Stratum (Plot size: _____)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
15 = Total Cover				Definitions of Vegetation Strata:	
Herb Stratum (Plot size: _____)				Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.	
65 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____.	
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.					

SOIL

AZ

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³

- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present?

Yes ✓ No .

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/5/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AW
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 34 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 980206 Long: -82.669587 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants

 Sampling Point: AW

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				Prevalance Index worksheet:
Sapling Stratum (Plot size: _____)				Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B)
1. Salix caroliniana	40	yes	OBL	Prevalance Index = B/A = _____ Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. Acer rubrum	15	yes	OBL	
3. Sabal palmetto	15	yes	FAC	
4. Persea palustris	15	yes	NL	
5. Quercus laurifolia	10	no	FACW	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
95 = Total Cover				
Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				Definitions of Vegetation Strata:
Herb Stratum (Plot size: _____)				Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
0 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: AW**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/6/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: BA
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 34 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 960207 Long: -82.669187 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants

 Sampling Point: BA

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species x1= _____ FACW species x2= _____ FAC species x3= _____ FACU species x4= _____ UPL species x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
Sapling Stratum (Plot size: _____)				
1. <i>Diospyros virginiana</i>	5	yes	FAC	
2. <i>Salix</i> spp.	2	yes	FACW	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalance Index is ≤3.0 ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
0 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
Herb Stratum (Plot size: _____)				
1. <i>Hyptis alata</i>	20	yes	OBL	
2. <i>Eustachys glauca</i>	20	yes	FACW	
3. <i>Lobelia</i> spp.	5	no	OBL	
4. <i>Erianthus</i> spp.	5	no	FAC	
5. <i>Dichromena</i> spp.	1	no	FACW	
6. <i>Spilanthes</i> spp.	1	no	FACW	
7. <i>Fuirena</i> spp.	1	no	OBL	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
53 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
0 = Total Cover				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: BA**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 10/29/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AO
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 33 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 961136 Long: -82.685416 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☒ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> Water Table Present? Yes ☒ No _____ Depth (inches): <u>0</u> Saturation Present? Yes ☒ No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION - Use scientific names of plants

Sampling Point: _____ AO

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Sapling Stratum (Plot size: _____) 0 = Total Cover				Prevalance Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1= _____ FACW species _____ x2= _____ FACU species _____ x3= _____ UPL species _____ x4= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Shrub Stratum (Plot size: _____) 0 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalance Index is ≤3.0 ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Herb Stratum (Plot size: _____) 0 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
1. Chara spp.	10	yes	NL	
2. Setaria spp.	5	yes	FAC	
3. Panicum repens	5	yes	FACW	
4. Cyperus spp.	2	no	FACW	
5. Typha spp.	2	no	OBL	
6. Eclipta alba	2	no	FACW	
7. Pluchea spp.	1	no	FACW	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____) 27 = Total Cover				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

SOIL

AO

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³

- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present?

Yes ✓ No .

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 10/29/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AJ
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 33 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28.962111 Long: -82.694738 Datum: WGS84
 Soil Map Unit Name: Quartzipsamments, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are circumstances normal? Yes ☒ No ☐
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u> </u> Surface Soil Cracks (B6)
<u> </u> Surface Water (A1)	<u> </u> Water-Stained Leaves (B9)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> High Water Table (A2)	<u> </u> Aquatic Fauna (B13)	<u> </u> Drainage Patterns (B10)
☒ Saturation (A3)	<u> </u> Marl Deposits (B15) (LRR U)	<u> </u> Moss Trim Lines (B16)
<u> </u> Water Marks (B1)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Sediment Deposits (B2)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Crayfish Burrows (C8)
<u> </u> Drift Deposits (B3)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Geomorphic Position (D2)
<u> </u> Iron Deposits (B5)	<u> </u> Thin Muck Surface (C7)	<u> </u> Shallow Aquitard (D3)
☒ Inundation Visible on Aerial Imagery (B7)	<u> </u> Other (Explain in Remarks)	<u> </u> FAC Neutral Test (D5)
Field Observations:		Wetland Hydrology Present? Yes ☒ No ☐
Surface Water Present?	Yes ☐ No ☒ Depth (inches): <u>0</u>	
Water Table Present?	Yes ☐ No ☒ Depth (inches): <u> </u>	
Saturation Present?	Yes ☒ No ☐ Depth (inches): <u>0</u>	
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: _____ **AJ**

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	1 (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	1 (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	100.00 (A/B)
4. _____	_____	_____	_____	Prevalance Index worksheet:	
5. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____	
6. _____	_____	_____	_____	OBL species	x1= _____
7. _____	_____	_____	_____	FACW species	x2= _____
				FAC species	x3= _____
				FACU species	x4= _____
				UPL species	x5= _____
				Column Totals:	_____ (A) _____ (B)
				Prevalance Index = B/A = _____	
0 = Total Cover				Hydrophytic Vegetation Indicators:	
Sapling Stratum (Plot size: _____)				☒ Dominance Test is 50%	
1. _____	_____	_____	_____	☐ Prevalance Index is $\leq 3.0^1$	
2. _____	_____	_____	_____	☐ Problematic Hydrophytic Vegetation ¹ (Explain)	
3. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
4. _____	_____	_____	_____	Definitions of Vegetation Strata:	
5. _____	_____	_____	_____	Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
6. _____	_____	_____	_____	Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.	
7. _____	_____	_____	_____	Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
8. _____	_____	_____	_____	Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
9. _____	_____	_____	_____	Woody vine- All woody vines, regardless of height.	
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
12. _____	_____	_____	_____		
0 = Total Cover					
Herb Stratum (Plot size: _____)					
1. Cladium spp.	50	yes	OBL		
2. Cyperus spp.	5	no	FACW		
3. Ludwigia leptocarpa	1	no	OBL		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
12. _____	_____	_____	_____		
56 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
0 = Total Cover					
Remarks: (If observed, list morphological adaptations below).					
Percent cover estimates based on meandering survey of the broader community.					

County/soil: Citrus- Quartzsammments

SOILSampling Point: AJ**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10 YR 4/2	100						dark grayish brown sand
			10 YR 6/2; 10 YR 8/1; 10 YR					
6-32	N 5/0; 10 YR 7/1	80	5/2	20	RM	M	splotches and pockets	gray and light gray sand
32-42	7 5 YR 5/8	80	5 YR 3/4	20	RM	M	splotches	strong brown sand
42-60	10 YR 5/2	100						grayish brown sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (**LRR P, T, U**)
☐ 5 cm Mucky Mineral (A7) (**LRR P,T,U**)
☒ Muck Presence (A8) (**LRR U**)
☐ 1 cm Muck (A9) (**LRR P,T**)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (**MLRA 150A**)
☐ Sandy Mucky Mineral (S1) (**LRR O, S**)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (**LRR P, S, T, U**)

☐ Polyvalue Below Surface (S8) (**LRR S, T, U**)
☐ Thin Dark Surface (S9) (**LRR S, T, U**)
☐ Loamy Mucky Mineral (F1) (**LRR O**)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (**LRR U**)
☐ Depleted Orchric (F11) (**MLRA 151**)
☐ Iron-Manganese Masses (F12) (**LRR O, P,T**)
☐ Umbric Surface (F13) (**LRR P, T, U**)
☐ Delta Orchric (F17) (**MLRA 151**)
☐ Reduced Vertic (F18) (**MLRA 150A, 150B**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
☐ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils ³

☐ 1 cm Muck (a9) (**LRR O**)
☐ 2 cm Muck (A10) (**LRR S**)
☐ Reduced Vertic (F18) (**outside MLRA 150A, B**)
☐ Piedmont Floodplain Soils (F19) (**LRR P, S, T**)
☐ Anomalous Bright Loamy Soils (F20) (**MLRA 153B**)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (**LRR T, U**)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (If observed)**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/2/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AQ
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 31 17S 17E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 959305 Long: -82.631790 Datum: WGS84
 Soil Map Unit Name: Boca and Redlevel fine sands NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Water-Stained Leaves (B9)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Drainage Patterns (B10)
☒ Saturation (A3)	_____ Marl Deposits (B15) (LRR U)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Geomorphic Position (D2)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ Shallow Aquitard (D3)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	_____ FAC Neutral Test (D5)
Field Observations:		Wetland Hydrology Present? Yes ☒ No _____
Surface Water Present? Yes _____ No ☒ Depth (inches): _____	Water Table Present? Yes _____ No ☒ Depth (inches): _____	
Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u>	(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: _____ AQ

Dominance Test Worksheet:			
Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)			
Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species x1= _____ FACW species x2= _____ FAC species x3= _____ FACU species x4= _____ UPL species x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____			
Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalance Index is $\leq 3.0^1$ ☐ Problematic Hydrophytic Vegetation ¹ (Explain)			
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.			
Hydrophytic Vegetation Present? Yes ☒ No ☐			
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.			

SOIL

AQ

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³

- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present?

Yes ✓ No .

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/4/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: 19
 Investigator(s): Blake Meineke Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 961301 Long: -82.667899 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Water-Stained Leaves (B9)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Drainage Patterns (B10)
☒ Saturation (A3)	_____ Marl Deposits (B15) (LRR U)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Geomorphic Position (D2)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ Shallow Aquitard (D3)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	_____ FAC Neutral Test (D5)
Field Observations:		Wetland Hydrology Present? Yes ☒ No _____
Surface Water Present? Yes _____ No ☒ Depth (inches): _____	Water Table Present? Yes _____ No ☒ Depth (inches): _____	
Saturation Present? Yes ☒ No _____ Depth (inches): <u>6</u>	(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

				Dominance Test Worksheet:	
Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status		
1. <i>Quercus laurifolia</i>	5	yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC:	9 (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	9 (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	100.00 (A/B)
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
5 = Total Cover				Prevalance Index worksheet:	
Sapling Stratum (Plot size: _____)				Total % Cover of: Multiply by:	
1. _____	_____	_____	_____	OBL species	x1= _____
2. _____	_____	_____	_____	FACW species	x2= _____
3. _____	_____	_____	_____	FAC species	x3= _____
4. _____	_____	_____	_____	FACU species	x4= _____
5. _____	_____	_____	_____	UPL species	x5= _____
6. _____	_____	_____	_____	Column Totals:	_____ (A) _____ (B)
7. _____	_____	_____	_____	Prevalance Index = B/A = _____	
0 = Total Cover				Hydrophytic Vegetation Indicators:	
Shrub Stratum (Plot size: _____)				✓ Dominance Test is 50%	
1. <i>Ilex cassine</i>	2	yes	FACW	Prevalence Index is ≤3.0 ¹	
2. _____	_____	_____	_____	Problematic Hydrophytic Vegetation ¹ (Explain)	
3. _____	_____	_____	_____		
4. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
5. _____	_____	_____	_____		
6. _____	_____	_____	_____	Definitions of Vegetation Strata:	
7. _____	_____	_____	_____		
2 = Total Cover				Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
Herb Stratum (Plot size: _____)				Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.	
1. <i>Erianthus</i> spp.	20	yes	FAC	Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
2. <i>Muhlenbergia capillaris</i>	20	yes	FACU	Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
3. <i>Eustachys glauca</i>	15	yes	FACW	Woody vine- All woody vines, regardless of height.	
4. <i>Andropogon glomeratus</i>	10	yes	FACW		
5. <i>Panicum rigidulum</i>	10	yes	FACW		
6. <i>Cladium jamaicense</i>	10	yes	OBL		
7. <i>Rhynchospora colorata</i>	10	yes	OBL		
8. <i>Pluchea odorata</i>	5	no	FACW		
9. <i>Carex</i> spp.	5	no	FACW		
10. <i>Rhynchospora miliacea</i>	5	no	OBL		
11. <i>Eupatorium capillifolium</i>	5	no	FACU		
12. <i>Centella asiatica</i>	5	no	FACW		
120 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐	
Remarks: (If observed, list morphological adaptations below).					
Percent cover estimates based on meandering survey of the broader community.					

SOIL**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/5/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AY
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28 960417 Long: -82.668148 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are circumstances normal? Yes ☒ No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No <u></u>	Is the Sampled Area within a Wetland? Yes ☒ No <u></u>
Hydric Soil Present?	Yes ☒ No <u></u>	
Wetland Hydrology Present?	Yes ☒ No <u></u>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Sparsely Vegetated Concave Surface (B8)
☒ Saturation (A3)	☐ Marl Deposits (B15) (LRR U)	☐ Drainage Patterns (B10)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Moss Trim Lines (B16)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)
		☐ FAC Neutral Test (D5)
Field Observations:		Wetland Hydrology Present? Yes ☒ No <u></u>
Surface Water Present?	Yes <u></u> No ☒ Depth (inches): <u></u>	
Water Table Present?	Yes <u></u> No ☒ Depth (inches): <u></u>	
Saturation Present?	Yes ☒ No <u></u> Depth (inches): <u>0-6</u>	
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: AY

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Sapling Stratum (Plot size: _____) 0 = Total Cover				Prevalance Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
1. Salix caroliniana	2	yes	OBL	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Shrub Stratum (Plot size: _____) 2 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalance Index is ≤3.0 ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Herb Stratum (Plot size: _____) 0 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
1. Aster spp.	30	yes	FAC	
2. Juncus spp.	20	yes	OBL	
3. Centella asiatica	10	no	FACW	
4. Typha spp.	10	no	OBL	
5. Bacopa spp.	5	no	OBL	
6. Solidago spp.	1	no	FACU	
7. Ludwigia spp.	1	no	OBL	
8. Hydrocotyle spp.	1	no	OBL	
9. Rhynchospora colorata	1	no	OBL	
10. Phyla nodiflora	1	no	FACW	
11. Spilanthes spp.	1	no	FACW	
12. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____) 81 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ 0 = Total Cover				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

SOIL

Sampling Point: AY**Profile Description** (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				few medium distinct mottles and streaks	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6				common medium distinct mottles	very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed)**
 Type: _____
 Depth (inches): _____
Hydric Soil Present? Yes ☒ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/6/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: BB
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 959661 Long: -82.666712 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants

 Sampling Point: BB

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Sapling Stratum (Plot size: _____) 0 = Total Cover				Prevalance Index worksheet: Total % Cover of: Multiply by: OBL species x1= _____ FACW species x2= _____ FAC species x3= _____ FACU species x4= _____ UPL species x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
1. Diospyros virginiana	10	yes	FAC	
2. Salix spp.	5	yes	FACW	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Shrub Stratum (Plot size: _____) 15 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalance Index is ≤3.0 ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Herb Stratum (Plot size: _____) 0 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
1. Cladium spp.	40	yes	OBL	
2. Spilanthes spp.	40	yes	FACW	
3. Hydrocotyle spp.	10	no	OBL	
4. Erianthus spp.	5	no	FAC	
5. Eustachys glauca	5	no	FACW	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____) 100 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ 0 = Total Cover				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: BB**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/6/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: BC
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 959571 Long: -82.665386 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants

Sampling Point: _____ BC

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Sapling Stratum (Plot size: _____) 0 = Total Cover				Prevalance Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
1. <i>Diospyros virginiana</i>	5	yes	FAC	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Shrub Stratum (Plot size: _____) 5 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% Prevalence Index is $\leq 3.0^1$ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <i>Ilex cassine</i>	1	yes	FACW	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Herb Stratum (Plot size: _____) 1 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
1. <i>Cyperus</i> spp.	30	yes	FACW	
2. <i>Muhlenbergia</i> spp.	30	yes	FAC	
3. <i>Centella</i> spp.	10	no	FACW	
4. <i>Cladium</i> spp.	10	no	OBL	
5. <i>Dichromena</i> spp.	5	no	FACW	
6. <i>Spartina patens</i>	5	no	FACW	
7. <i>Pluchea</i> spp.	2	no	FACW	
8. <i>Hyptis alata</i>	1	no	OBL	
9. <i>Spilanthes</i> spp.	1	no	FACW	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____) 94 = Total Cover				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ 0 = Total Cover				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOIL

Sampling Point: _____ BC

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/6/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: ZA
 Investigator(s): Stacy Rizzo, Tony Davanzo, Karl Bullock Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28 960548 Long: -82.664533 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are circumstances normal? Yes ☒ No ☐
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☐ Marl Deposits (B15) (LRR U)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Dry-Season Water Table (C2)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Crayfish burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)	
		☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u> </u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u> </u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Sampling Point: ZA

Dominance Test Worksheet:			
Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____			
Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% _____ Prevalance Index is $\leq 3.0^1$ _____ Problematic Hydrophytic Vegetation ¹ (Explain)			
Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.			
Hydrophytic Vegetation Present? Yes ☒ No _____			
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.			

SOIL

ZA

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³

- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present?

Yes ✓ No .

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/4/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: 18
 Investigator(s): Blake Meineke Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 962404 Long: -82.666120 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

Tree Stratum (Plot size: _____)				Dominance Test Worksheet:	
	Absolute % Cover	Dominant Species?	Indicator Status		
1. <i>Quercus laurifolia</i>	40	yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC:	4 (A)
2. <i>Fraxinus caroliniana</i>	20	yes	OBL	Total Number of Dominant Species Across All Strata:	5 (B)
3. <i>Salix caroliniana</i>	10	no	OBL	Percent of Dominant Species That Are OBL, FACW, or FAC:	80.00 (A/B)
4. <i>Sabal palmetto</i>	10	no	FAC		
5. <i>Persea palustris</i>	5	no	NL		
6.					
7.					
85 = Total Cover				Prevalance Index worksheet:	
Sapling Stratum (Plot size: _____)				Total % Cover of: Multiply by:	
1.				OBL species	x1= _____
2.				FACW species	x2= _____
3.				FAC species	x3= _____
4.				FACU species	x4= _____
5.				UPL species	x5= _____
6.				Column Totals:	(A) _____ (B) _____
7.				Prevalance Index = B/A = _____	
0 = Total Cover				Hydrophytic Vegetation Indicators:	
Shrub Stratum (Plot size: _____)				✓ Dominance Test is 50%	
1. <i>Myrica cerifera</i>	15	yes	FAC	Prevalence Index is ≤3.0 ¹	
2.				Problematic Hydrophytic Vegetation ¹ (Explain)	
3.					
4.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
5.					
6.				Definitions of Vegetation Strata:	
7.					
15 = Total Cover				Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
Herb Stratum (Plot size: _____)				Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.	
1. <i>Pontederia cordata</i>	10	yes	OBL	Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
2. <i>Eupatorium capillifolium</i>	5	yes	FACU	Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
3.				Woody vine- All woody vines, regardless of height.	
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
15 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1.					
2.					
3.					
4.					
5.					
0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐	
Remarks: (If observed, list morphological adaptations below).					
Percent cover estimates based on meandering survey of the broader community.					

SOIL**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/4/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: 17
 Investigator(s): Blake Meineke Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 961452 Long: -82.663889 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Tree Stratum (Plot size: _____)				Dominance Test Worksheet:	
Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status		
1.				Number of Dominant Species	5 (A)
2.				That Are OBL, FACW, or FAC:	
3.				Total Number of Dominant Species Across All Strata:	5 (B)
4.				Percent of Dominant Species That Are OBL, FACW, or FAC:	100.00 (A/B)
5.				Prevalance Index worksheet:	
6.				Total % Cover of: Multiply by:	
7.				OBL species x1=	
0 = Total Cover				FACW species x2=	
Sapling Stratum (Plot size: _____)				FAC species x3=	
1. Salix caroliniana	5	yes	OBL	FACU species x4=	
2.				UPL species x5=	
3.				Column Totals: (A) (B)	
4.				Prevalance Index = B/A =	
5.				Hydrophytic Vegetation Indicators:	
6.				✓ Dominance Test is 50%	
7.				Prevalance Index is $\leq 3.0^1$	
5 = Total Cover				Problematic Hydrophytic Vegetation ¹ (Explain)	
Shrub Stratum (Plot size: _____)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
1.				Definitions of Vegetation Strata:	
2.				Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
3.				Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.	
4.				Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
5.				Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
6.				Woody vine- All woody vines, regardless of height.	
7.					
0 = Total Cover					
Herb Stratum (Plot size: _____)					
1. Rhynchospora colorata	30	yes	OBL		
2. Ludwigia repens	15	yes	OBL		
3. Carex spp.	15	yes	FACW		
4. Centella asiatica	15	yes	FACW		
5. Juncus megacephalus	10	no	OBL		
6. Amphicarpum muhlenbergianum	5	no	FACW		
7. Pluchea odorata	5	no	FACW		
8. Eupatorium capillifolium	5	no	FACU		
9.					
10.					
11.					
12.					
100 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1.					
2.					
3.					
4.					
5.					
0 = Total Cover					
Remarks: (If observed, list morphological adaptations below).					
Percent cover estimates based on meandering survey of the broader community.					

SOIL**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/6/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: ZC
 Investigator(s): Karl Bullock Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 960866 Long: -82.663914 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		<u>Secondary Indicators (minimum of two required)</u>
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		_____ Surface Soil Cracks (B6)
_____ Surface Water (A1)	_____ Water-Stained Leaves (B9)	_____ Sparsely Vegetated Concave Surface (B8)
_____ High Water Table (A2)	_____ Aquatic Fauna (B13)	_____ Drainage Patterns (B10)
☒ Saturation (A3)	_____ Marl Deposits (B15) (LRR U)	_____ Moss Trim Lines (B16)
_____ Water Marks (B1)	_____ Hydrogen Sulfide Odor (C1)	_____ Dry-Season Water Table (C2)
_____ Sediment Deposits (B2)	_____ Oxidized Rhizospheres on Living Roots (C3)	_____ Crayfish Burrows (C8)
_____ Drift Deposits (B3)	_____ Presence of Reduced Iron (C4)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Algal Mat or Crust (B4)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Geomorphic Position (D2)
_____ Iron Deposits (B5)	_____ Thin Muck Surface (C7)	_____ Shallow Aquitard (D3)
_____ Inundation Visible on Aerial Imagery (B7)	_____ Other (Explain in Remarks)	_____ FAC Neutral Test (D5)
Field Observations:		Wetland Hydrology Present? Yes ☒ No _____
Surface Water Present? Yes _____ No ☒ Depth (inches): _____	Water Table Present? Yes _____ No ☒ Depth (inches): _____	
Saturation Present? Yes ☒ No _____ Depth (inches): <u>0</u>	(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: _____ ZC

Tree Stratum (Plot size: _____)				Dominance Test Worksheet:	
1.	Absolute % Cover	Dominant Species?	Indicator Status		
1.				Number of Dominant Species	
2.				That Are OBL, FACW, or FAC:	13 (A)
3.				Total Number of Dominant	
4.				Species Across All Strata:	13 (B)
5.				Percent of Dominant Species	
6.				That Are OBL, FACW, or FAC:	100.00 (A/B)
7.				Prevalance Index worksheet:	
0 = Total Cover				Total % Cover of: Multiply by:	
Sapling Stratum (Plot size: _____)				OBL species	x1= _____
1. Liquidambar styraciflua	25	yes	FAC	FACW species	x2= _____
2. Acer rubrum	20	yes	OBL	FAC species	x3= _____
3. Carpinus caroliniana	20	yes	FAC	FACU species	x4= _____
4. Sabal palmetto	20	yes	FAC	UPL species	x5= _____
5. Ulmus americana	20	yes	FACW	Column Totals:	_____ (A) _____ (B)
6. Quercus laurifolia	20	yes	FACW	Prevalance Index = B/A = _____	
7. Diospyros virginiana	15	no	FAC		
140 = Total Cover				Hydrophytic Vegetation Indicators:	
Shrub Stratum (Plot size: _____)				✓ Dominance Test is 50%	
1. Baccharis sp.	5	yes	FAC	Prevalance Index is $\leq 3.0^1$	
2.				Problematic Hydrophytic Vegetation ¹ (Explain)	
3.					
4.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
5.				Definitions of Vegetation Strata:	
6.				Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
7.				Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.	
5 = Total Cover				Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
Herb Stratum (Plot size: _____)				Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
1. Flaveria spp.	10	yes	FACW	Woody vine- All woody vines, regardless of height.	
2. Andropogon virginicus	10	yes	FAC		
3. Andropogon glomeratus	10	yes	FACW		
4. Centella asiatica	10	yes	FACW		
5. Erianthus spp.	10	yes	FAC		
6. Thelypteris spp.	5	no	FACW		
7. Lobelia spp.	5	no	OBL		
8. Rhynchospora colorata	5	no	OBL		
9. Cladium spp.	5	no	OBL		
10.					
11.					
12.					
70 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. Vitus rotundifolia	2	yes	FAC		
2.					
3.					
4.					
5.					
2 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐	
Remarks: (If observed, list morphological adaptations below).					
Percent cover estimates based on meandering survey of the broader community.					

County/soil: Citrus- Boca

SOILSampling Point: **ZC****Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)Type: Depth (inches):

Hydric Soil Present?

Yes ☒ No .

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/6/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: ZB
 Investigator(s): Karl Bullock Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 960309 Long: -82.664244 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

Sampling Point: _____ ZB

Tree Stratum (Plot size: _____)				Dominance Test Worksheet:	
1.	Absolute % Cover	Dominant Species?	Indicator Status		
1.				Number of Dominant Species	13 (A)
2.				That Are OBL, FACW, or FAC:	
3.				Total Number of Dominant	13 (B)
4.				Species Across All Strata:	
5.				Percent of Dominant Species	100.00 (A/B)
6.				That Are OBL, FACW, or FAC:	
7.				Prevalance Index worksheet:	
0 = Total Cover				Total % Cover of: Multiply by:	
Sapling Stratum (Plot size: _____)				OBL species	x1= _____
1. Liquidambar styraciflua	25	yes	FAC	FACW species	x2= _____
2. Acer rubrum	20	yes	OBL	FAC species	x3= _____
3. Carpinus caroliniana	20	yes	FAC	FACU species	x4= _____
4. Sabal palmetto	20	yes	FAC	UPL species	x5= _____
5. Ulmus americana	20	yes	FACW	Column Totals:	(A) _____ (B) _____
6. Quercus laurifolia	20	yes	FACW		
7. Diospyros virginiana	15	no	FAC	Prevalance Index = B/A =	
140 = Total Cover				Hydrophytic Vegetation Indicators:	
Shrub Stratum (Plot size: _____)				✓ Dominance Test is 50%	
1. Baccharis sp.	5	yes	FAC	Prevalance Index is $\leq 3.0^1$	
2.				Problematic Hydrophytic Vegetation ¹ (Explain)	
3.					
4.				¹ Indicators of hydric soil and wetland hydrology must	
5.				be present, unless disturbed or problematic.	
6.				Definitions of Vegetation Strata:	
7.					
5 = Total Cover				Tree- Woody plants, excluding woody vines,	
Herb Stratum (Plot size: _____)				approximately 20 ft (6m) or more in height and 3 in. (7.6	
1. Flaveria spp.	10	yes	FACW	cm) or larger in diameter at breast height (DBH).	
2. Andropogon virginicus	10	yes	FAC	Sapling- Woody plants, excluding woody vines,	
3. Andropogon glomeratus	10	yes	FACW	approximately 20 ft (6m) or more in height and less than 3	
4. Centella asiatica	10	yes	FACW	in. (7.6 cm) DBH.	
5. Erianthus spp.	10	yes	FAC	Shrub- Woody plants, excluding woody vines,	
6. Thelypteris spp.	5	no	FACW	approximately 3 to 20 ft (1 to 6 m) in height.	
7. Lobelia spp.	5	no	OBL	Herb- All herbaceous (non-woody) plants, including	
8. Rhynchospora colorata	5	no	OBL	herbaceous vines, regardless of size. Includes woody	
9. Cladium spp.	5	no	OBL	plants, except woody vines, less than approximately 3 ft (1	
10.				m) in height.	
11.				Woody vine- All woody vines, regardless of height.	
12.					
70 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. Vitus rotundifolia	2	yes	FAC		
2.					
3.					
4.					
5.					
2 = Total Cover				Hydrophytic Vegetation Present?	Yes ☒ No ☐

Remarks: (If observed, list morphological adaptations below).

Percent cover estimates based on meandering survey of the broader community.

SOIL

ZB

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³

- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present?

Yes ✓ No .

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/8/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: BD
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 960028 Long: -82.663905 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☐ Marl Deposits (B15) (LRR U)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Dry-Season Water Table (C2)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)	
		☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants

 Sampling Point: BD

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.33</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Sapling Stratum (Plot size: _____) 0 = Total Cover				Prevalance Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
1. Salix spp.	30	yes	FACW	
2. Diospyros virginiana	5	no	FAC	
3. Cornus foemina	5	no	FACW	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Shrub Stratum (Plot size: _____) 40 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalence Index is $\leq 3.0^1$ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. Cephalanthus occidentalis	5	yes	OBL	
2. Myrica cerifera	5	yes	FAC	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Herb Stratum (Plot size: _____) 10 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
1. Dichromena spp.	10	yes	FACW	
2. Cyperus surinamensis	10	yes	FACW	
3. Eupatorium capillifolium	10	yes	FACU	
4. Pontederia cordata	5	no	OBL	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____) 35 = Total Cover				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ 0 = Total Cover				
Hydrophytic Vegetation Present? Yes ☒ No ☐				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: **BD****Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)Type: Depth (inches):

Hydric Soil Present?

Yes ☒ No

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 10/26-28/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AB
 Investigator(s): Mike Arrants, Stacy Rizzo, Tony Davanzo Section, Township, Range: 36 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28 959358 Long: -82.647488 Datum: WGS84
 Soil Map Unit Name: Boca and Redlevel fine sands NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are circumstances normal? Yes ☒ No ☐
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Sparsely Vegetated Concave Surface (B8)
☒ Saturation (A3)	☐ Marl Deposits (B15) (LRR U)	☐ Drainage Patterns (B10)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Moss Trim Lines (B16)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)
		☐ FAC Neutral Test (D5)
Field Observations:		Wetland Hydrology Present? Yes ☒ No ☐
Surface Water Present?	Yes ☐ No ☒ Depth (inches): <u> </u>	
Water Table Present?	Yes ☐ No ☒ Depth (inches): <u> </u>	
Saturation Present?	Yes ☒ No ☐ Depth (inches): <u>0-12</u>	
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: AB

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
1 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalance Index is ≤3.0 ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
0 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
Herb Stratum (Plot size: _____)				
1. Rhynchospora spp. 60 yes FACW				
2. Fuirena pumila 40 yes OBL				
3. Bacopa spp. 25 yes OBL				
4. Bidens spp. 25 yes FACW				
5. Rhynchospora colorata 20 yes OBL				
6. Phyla nodiflora 10 no FACW				
7. Andropogon glomeratus 10 no FACW				
8. Leptochloa spp. 10 no FACW				
9. Hydrocotyle spp. 5 no OBL				
10. Sagittaria graminea 5 no OBL				
11. Solidago canadensis 5 no FACU				
12. Galium spp. 5 no FACU				
220 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. Ampelopsis arborea	1	yes	FAC	
2. M kania scandens	1	yes	FACW	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
2 = Total Cover				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: AB**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/6/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: ZD
 Investigator(s): Karl Bullock Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 960584 Long: -82.663517 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

Sampling Point: _____ ZD

Tree Stratum (Plot size: _____)				Dominance Test Worksheet:	
1.	Absolute % Cover	Dominant Species?	Indicator Status		
1.				Number of Dominant Species	8 (A)
2.				That Are OBL, FACW, or FAC:	
3.				Total Number of Dominant	8 (B)
4.				Species Across All Strata:	
5.				Percent of Dominant Species	100.00 (A/B)
6.				That Are OBL, FACW, or FAC:	
7.				Prevalance Index worksheet:	
0 = Total Cover				Total % Cover of: Multiply by:	
Sapling Stratum (Plot size: _____)				OBL species	x1= _____
1. Liquidambar styraciflua	25	yes	FAC	FACW species	x2= _____
2. Acer rubrum	20	yes	OBL	FAC species	x3= _____
3. Carpinus caroliniana	20	yes	FAC	FACU species	x4= _____
4. Sabal palmetto	20	yes	FAC	UPL species	x5= _____
5. Ulmus americana	20	yes	FACW	Column Totals:	(A) _____ (B) _____
6. Quercus laurifolia	20	yes	FACW	Prevalance Index = B/A = _____	
7. Diospyros virginiana	15	no	FAC		
140 = Total Cover				Hydrophytic Vegetation Indicators:	
Shrub Stratum (Plot size: _____)				✓ Dominance Test is 50%	
1. Baccharis sp.	5	yes	FAC	Prevalance Index is $\leq 3.0^1$	
2.				Problematic Hydrophytic Vegetation ¹ (Explain)	
3.					
4.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
5.				Definitions of Vegetation Strata:	
6.				Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
7.				Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.	
5 = Total Cover				Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
Herb Stratum (Plot size: _____)				Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
1. Flaveria spp.	10	yes	FACW	Woody vine- All woody vines, regardless of height.	
2. Andropogon virginicus	10	yes	FAC		
3. Andropogon glomeratus	10	yes	FACW		
4. Centella asiatica	10	yes	FACW		
5. Erianthus spp.	10	yes	FAC		
6. Thelypteris spp.	5	no	FACW		
7. Lobelia spp.	5	no	OBL		
8. Rhynchospora colorata	5	no	OBL		
9. Cladium spp.	5	no	OBL		
10.					
11.					
12.					
70 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. Vitus rotundifolia	2	yes	FAC		
2.					
3.					
4.					
5.					
2 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐	
Remarks: (If observed, list morphological adaptations below).					
Percent cover estimates based on meandering survey of the broader community.					

County/soil: Citrus- Boca

SOILSampling Point: **ZD****Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)Type: Depth (inches):

Hydric Soil Present?

Yes ☒ No .

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/6/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: ZDA
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28 960584 Long: -82.663517 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are circumstances normal? Yes ☒ No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No <u></u>	Is the Sampled Area within a Wetland? Yes ☒ No <u></u>
Hydric Soil Present?	Yes ☒ No <u></u>	
Wetland Hydrology Present?	Yes ☒ No <u></u>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Sparsely Vegetated Concave Surface (B8)
☒ Saturation (A3)	☐ Marl Deposits (B15) (LRR U)	☐ Drainage Patterns (B10)
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Moss Trim Lines (B16)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Dry-Season Water Table (C2)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)
		☐ FAC Neutral Test (D5)
Field Observations:		Wetland Hydrology Present? Yes ☒ No <u></u>
Surface Water Present?	Yes <u></u> No ☒ Depth (inches): <u></u>	
Water Table Present?	Yes <u></u> No ☒ Depth (inches): <u></u>	
Saturation Present?	Yes ☒ No <u></u> Depth (inches): <u>0-12</u>	
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: ZDA

Dominance Test Worksheet:			
Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)			
Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B)			
Prevalance Index = B/A = _____			
Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalance Index is $\leq 3.0^1$ ☐ Problematic Hydrophytic Vegetation ¹ (Explain)			
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.			
Hydrophytic Vegetation Present? Yes ☒ No ☐			
0 = Total Cover Woody Vine Stratum (Plot size: _____) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____			
0 = Total Cover Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.			

County/soil: Citrus- Boca

SOILSampling Point: ZDA**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/4/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: 16
 Investigator(s): Blake Meineke, Amy Piko Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28 962204 Long: -82.662865 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are circumstances normal? Yes ☒ No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No <u></u>	Is the Sampled Area within a Wetland? Yes ☒ No <u></u>
Hydric Soil Present?	Yes ☒ No <u></u>	
Wetland Hydrology Present?	Yes ☒ No <u></u>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Surface Soil Cracks (B6)</u>
<u>Surface Water (A1)</u>	<u>Water-Stained Leaves (B9)</u>	<u>Sparsely Vegetated Concave Surface (B8)</u>
<u>High Water Table (A2)</u>	<u>Aquatic Fauna (B13)</u>	<u>Drainage Patterns (B10)</u>
☒ <u>Saturation (A3)</u>	<u>Marl Deposits (B15) (LRR U)</u>	<u>Moss Trim Lines (B16)</u>
<u>Water Marks (B1)</u>	<u>Hydrogen Sulfide Odor (C1)</u>	<u>Dry-Season Water Table (C2)</u>
<u>Sediment Deposits (B2)</u>	<u>Oxidized Rhizospheres on Living Roots (C3)</u>	<u>Crayfish Burrows (C8)</u>
<u>Drift Deposits (B3)</u>	<u>Presence of Reduced Iron (C4)</u>	<u>Saturation Visible on Aerial Imagery (C9)</u>
<u>Algal Mat or Crust (B4)</u>	<u>Recent Iron Reduction in Tilled Soils (C6)</u>	<u>Geomorphic Position (D2)</u>
<u>Iron Deposits (B5)</u>	<u>Thin Muck Surface (C7)</u>	<u>Shallow Aquitard (D3)</u>
<u>Inundation Visible on Aerial Imagery (B7)</u>	<u>Other (Explain in Remarks)</u>	<u>FAC Neutral Test (D5)</u>
Field Observations:		Wetland Hydrology Present? Yes ☒ No <u></u>
Surface Water Present?	Yes <u></u> No ☒ Depth (inches): <u></u>	
Water Table Present?	Yes <u></u> No ☒ Depth (inches): <u></u>	
Saturation Present?	Yes ☒ No <u></u> Depth (inches): <u>0</u>	
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Tree Stratum (Plot size: _____)				Dominance Test Worksheet:	
	Absolute % Cover	Dominant Species?	Indicator Status		
1. <i>Quercus laurifolia</i>	30	yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC:	3 (A)
2. <i>Sabal palmetto</i>	20	yes	FAC	Total Number of Dominant Species Across All Strata:	3 (B)
3. <i>Fraxinus caroliniana</i>	10	no	OBL	Percent of Dominant Species That Are OBL, FACW, or FAC:	100.00 (A/B)
4. <i>Magnolia virginiana</i>	5	no	FACW		
5.					
6.					
7.					
65 = Total Cover				Prevalance Index worksheet:	
Sapling Stratum (Plot size: _____)				Total % Cover of: Multiply by:	
1.				OBL species	x1= _____
2.				FACW species	x2= _____
3.				FAC species	x3= _____
4.				FACU species	x4= _____
5.				UPL species	x5= _____
6.				Column Totals:	_____ (A) _____ (B)
7.				Prevalance Index = B/A = _____	
0 = Total Cover				Hydrophytic Vegetation Indicators:	
Shrub Stratum (Plot size: _____)				✓ Dominance Test is 50%	
1. <i>Ilex cassine</i>	20	yes	FACW	Prevalance Index is ≤3.0 ¹	
2.				Problematic Hydrophytic Vegetation ¹ (Explain)	
3.					
4.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
5.					
6.				Definitions of Vegetation Strata:	
7.					
20 = Total Cover				Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
Herb Stratum (Plot size: _____)				Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.	
1.				Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
2.				Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
3.				Woody vine- All woody vines, regardless of height.	
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
0 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1.					
2.					
3.					
4.				Hydrophytic Vegetation Present? Yes ☒ No ☐	
5.					
0 = Total Cover					
Remarks: (If observed, list morphological adaptations below).					
Percent cover estimates based on meandering survey of the broader community.					

SOIL**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/4/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: 15
 Investigator(s): Blake Meineke, Amy Piko Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 962476 Long: -82.660921 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>3</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B) Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
1. <i>Salix caroliniana</i>	30	yes	OBL	
2. <i>Fraxinus caroliniana</i>	15	yes	OBL	
3. <i>Quercus laurifolia</i>	15	yes	FACW	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Sapling Stratum (Plot size: _____) 60 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% Prevalance Index is ≤ 3.0 ¹ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Shrub Stratum (Plot size: _____) 0 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
Herb Stratum (Plot size: _____) 0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____) 0 = Total Cover				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
0 = Total Cover				

Remarks: (If observed, list morphological adaptations below).
 Percent cover estimates based on meandering survey of the broader community.

SOIL**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/4/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: 14
 Investigator(s): Blake Meineke, Amy Piko Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28 961554 Long: -82.660493 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are circumstances normal? Yes ☒ No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No <u></u>	Is the Sampled Area within a Wetland? Yes ☒ No <u></u>
Hydric Soil Present?	Yes ☒ No <u></u>	
Wetland Hydrology Present?	Yes ☒ No <u></u>	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Surface Soil Cracks (B6)</u>
<u>Surface Water (A1)</u>	<u>Water-Stained Leaves (B9)</u>	<u>Sparsely Vegetated Concave Surface (B8)</u>
<u>High Water Table (A2)</u>	<u>Aquatic Fauna (B13)</u>	<u>Drainage Patterns (B10)</u>
☒ <u>Saturation (A3)</u>	<u>Marl Deposits (B15) (LRR U)</u>	<u>Moss Trim Lines (B16)</u>
<u>Water Marks (B1)</u>	<u>Hydrogen Sulfide Odor (C1)</u>	<u>Dry-Season Water Table (C2)</u>
<u>Sediment Deposits (B2)</u>	<u>Oxidized Rhizospheres on Living Roots (C3)</u>	<u>Crayfish Burrows (C8)</u>
<u>Drift Deposits (B3)</u>	<u>Presence of Reduced Iron (C4)</u>	<u>Saturation Visible on Aerial Imagery (C9)</u>
<u>Algal Mat or Crust (B4)</u>	<u>Recent Iron Reduction in Tilled Soils (C6)</u>	<u>Geomorphic Position (D2)</u>
<u>Iron Deposits (B5)</u>	<u>Thin Muck Surface (C7)</u>	<u>Shallow Aquitard (D3)</u>
<u>Inundation Visible on Aerial Imagery (B7)</u>	<u>Other (Explain in Remarks)</u>	<u>FAC Neutral Test (D5)</u>
Field Observations:		Wetland Hydrology Present? Yes ☒ No <u></u>
Surface Water Present?	Yes <u></u> No ☒ Depth (inches): <u></u>	
Water Table Present?	Yes <u></u> No ☒ Depth (inches): <u></u>	
Saturation Present?	Yes ☒ No <u></u> Depth (inches): <u>6</u>	
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B) Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Sapling Stratum (Plot size: _____) 0 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% Prevalance Index is $\leq 3.0^1$ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. Salix spp.	5	yes	FACW	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Shrub Stratum (Plot size: _____) 5 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
Herb Stratum (Plot size: _____) 0 = Total Cover				
1. Rhynchospora colorata	20	yes	OBL	
2. Eustachys glauca	15	yes	FACW	
3. Centella asiatica	15	yes	FACW	
4. Ludwigia repens	15	yes	OBL	
5. Phyla nodiflora	10	no	FACW	
6. Andropogon glomeratus	10	no	FACW	
7. Amphicarpum muhlenbergianum	5	no	FACW	
8. Carex spp.	5	no	FACW	
9. Rhynchospora spp.	5	no	FACW	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____) 100 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
0 = Total Cover				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

SOIL**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/8/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: BE
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 959853 Long: -82.660182 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Sampling Point: _____ BE

Adapted from U.S. Army Corps of Engineers
Atlantic and Gulf Coastal Plain Region- Interim Version

County/soil: Citrus- Boca

SOILSampling Point: BE**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/6/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: ZH
 Investigator(s): Karl Bullock Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 960175 Long: -82.659844 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

Sampling Point: _____ ZH

Dominance Test Worksheet:			
Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____			
Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% _____ Prevalance Index is $\leq 3.0^1$ _____ Problematic Hydrophytic Vegetation ¹ (Explain)			
Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.			
Hydrophytic Vegetation Present? Yes ☒ No _____			
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.			

County/soil: Citrus- Boca

SOILSampling Point: ZH**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)Type: Depth (inches):

Hydric Soil Present?

Yes ☒ No

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/4/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: 20/21
 Investigator(s): Blake Meineke Section, Township, Range: 35 17S 16E/ 34 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 961750 Long: -82.671575 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☒ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☒ No _____ Depth (inches): <u>0-2</u> Water Table Present? Yes ☒ No _____ Depth (inches): <u>0</u> Saturation Present? Yes ☒ No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: 20/21

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Sapling Stratum (Plot size: _____) 0 = Total Cover				Prevalance Index worksheet: Total % Cover of: Multiply by: OBL species x1= _____ FACW species x2= _____ FAC species x3= _____ FACU species x4= _____ UPL species x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
Shrub Stratum (Plot size: _____) 0 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalance Index is ≤3.0 ¹ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: _____) 0 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
1. Typha spp.	60	yes	OBL	
2. Polygonum punctatum	30	yes	FACW	
3. Ludwigia peruviana	10	no	OBL	
4. Juncus effusus	5	no	FACW	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____) 105 = Total Cover				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ 0 = Total Cover				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

SOIL**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/3/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: 13
 Investigator(s): Blake Meineke, Amy Piko Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 961348 Long: -82.657720 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>3-6</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B) Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
1.				
2.				
3.				
4.				
5.				
6.				
7.				
Sapling Stratum (Plot size: _____) 0 = Total Cover				
1. Salix spp.	10	yes	FACW	
2.				
3.				
4.				
5.				
6.				
7.				
Shrub Stratum (Plot size: _____) 10 = Total Cove				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
Herb Stratum (Plot size: _____) 0 = Total Cover				
1. Carex spp.	25	yes	FACW	
2. Centella asiatica	20	yes	FACW	
3. Cyperus spp.	20	yes	FACW	
4. Cirsium spp.	10	no	FAC	
5. Rhynchospora colorata	10	no	OBL	
6. Muhlenbergia capillaris	5	no	FACU	
7. Andropogon glomeratus	5	no	FACW	
8.				
9.				
10.				
11.				
12.				
Woody Vine Stratum (Plot size: _____) 95 = Total Cover				
1.				
2.				
3.				
4.				
5.				
0 = Total Cover				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

SOIL**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/3/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: 12
 Investigator(s): Blake Meineke, Amy Piko Section, Township, Range: 36 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28 962198 Long: -82.657342 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are circumstances normal? Yes ☒ No ☐
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u> </u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u> </u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>3</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <i>Quercus laurifolia</i>	10	yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC:	4 (A)
2. <i>Fraxinus caroliniana</i>	15	yes	OBL	Total Number of Dominant Species Across All Strata:	4 (B)
3. <i>Nyssa sylvatica</i> var. <i>biflora</i>	10	yes	FAC	Percent of Dominant Species That Are OBL, FACW, or FAC:	100.00 (A/B)
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
35 = Total Cover				Prevalance Index worksheet:	
Sapling Stratum (Plot size: _____)				<u>Total % Cover of:</u> <u>Multiply by:</u> OBL species x1= _____ FACW species x2= _____ FAC species x3= _____ FACU species x4= _____ UPL species x5= _____ Column Totals: (A) _____ (B) _____	
0 = Total Cove				Prevalance Index = B/A = _____	
Shrub Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. <i>Myrica cerifera</i>				✓ Dominance Test is 50%	
2. _____				Prevalance Index is $\leq 3.0^1$	
3. _____				Problematic Hydrophytic Vegetation ¹ (Explain)	
4. _____					
5. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
6. _____					
7. _____				Definitions of Vegetation Strata:	
15 = Total Cover				Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
Herb Stratum (Plot size: _____)				Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.	
1. _____				Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
2. _____				Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
3. _____				Woody vine- All woody vines, regardless of height.	
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
12. _____					
0 = Total Cover					
Woody Vine Stratum (Plot size: _____)					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____.	
Remarks: (If observed, list morphological adaptations below).					
Percent cover estimates based on meandering survey of the broader community.					

SOIL**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/3/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: 11
 Investigator(s): Blake Meineke, Amy Piko Section, Township, Range: 36 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 962091 Long: -82.656719 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>3</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. <i>Quercus laurifolia</i>	20	yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC:	2 (A)
2. <i>Fraxinus caroliniana</i>	10	yes	OBL	Total Number of Dominant Species Across All Strata:	2 (B)
3. <i>Nyssa sylvatica</i> var. <i>biflora</i>	5	no	FAC	Percent of Dominant Species That Are OBL, FACW, or FAC:	100.00 (A/B)
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
35 = Total Cover				Prevalance Index worksheet:	
Sapling Stratum (Plot size: _____)				Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B)	
1. _____	_____	_____	_____	Prevalance Index = B/A = _____	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
0 = Total Cove				Hydrophytic Vegetation Indicators:	
Shrub Stratum (Plot size: _____)				☒ Dominance Test is 50% Prevalence Index is ≤ 3.0 ¹ Problematic Hydrophytic Vegetation ¹ (Explain)	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
0 = Total Cover				Definitions of Vegetation Strata:	
Herb Stratum (Plot size: _____)				Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
12. _____	_____	_____	_____		
0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____	
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
0 = Total Cover					
Remarks: (If observed, list morphological adaptations below).					
Percent cover estimates based on meandering survey of the broader community.					

SOIL**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/3/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: 8
 Investigator(s): Blake Meineke, Amy Piko Section, Township, Range: 36 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 962273 Long: -82.653841 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: Freshwater Emergent wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☐ Marl Deposits (B15) (LRR U)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Dry-Season Water Table (C2)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)	
		☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>3</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1.				Number of Dominant Species That Are OBL, FACW, or FAC:	4 (A)
2.				Total Number of Dominant Species Across All Strata:	5 (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC:	80.00 (A/B)
4.				Prevalance Index worksheet:	
5.				Total % Cover of: _____ Multiply by: _____	
6.				OBL species	x1= _____
7.				FACW species	x2= _____
				FAC species	x3= _____
				FACU species	x4= _____
				UPL species	x5= _____
				Column Totals:	_____ (A) _____ (B)
				Prevalance Index = B/A = _____	
Sapling Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:	
1. Fraxinus caroliniana	20	yes	OBL	✓ Dominance Test is 50%	
2.				Prevalance Index is $\leq 3.0^1$	
3.				Problematic Hydrophytic Vegetation ¹ (Explain)	
4.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
5.				Definitions of Vegetation Strata:	
6.				Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
7.				Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.	
8.				Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
9.				Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	
10.				Woody vine- All woody vines, regardless of height.	
11.					
12.					
Herb Stratum (Plot size: _____)					
1. Rhynchospora colorata	15	yes	OBL		
2. Muhlenbergia capillaris	10	yes	FACU		
3. Pluchea odorata	10	yes	FACW		
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
Woody Vine Stratum (Plot size: _____)					
1.					
2.					
3.					
4.					
5.					
0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐	
Remarks: (If observed, list morphological adaptations below).					
Percent cover estimates based on meandering survey of the broader community.					

SOILSampling Point: 8**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/6/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: ZE
 Investigator(s): Karl Bullock Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 960555 Long: -82.657238 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: ZE

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>13</u> (A) Total Number of Dominant Species Across All Strata: <u>13</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
0 = Total Cover				Prevalance Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
Sapling Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalence Index is $\leq 3.0^1$ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. Liquidambar styraciflua	25	yes	FAC	
2. Acer rubrum	20	yes	OBL	
3. Carpinus caroliniana	20	yes	FAC	
4. Sabal palmetto	20	yes	FAC	
5. Ulmus americana	20	yes	FACW	
6. Quercus laurifolia	20	yes	FACW	
7. Diospyros virginiana	15	no	FAC	Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
140 = Total Cover				
Shrub Stratum (Plot size: _____)				
1. Baccharis sp.	5	yes	FAC	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
5 = Total Cover				Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
Herb Stratum (Plot size: _____)				
1. Flaveria spp.	10	yes	FACW	
2. Andropogon virginicus	10	yes	FAC	
3. Andropogon glomeratus	10	yes	FACW	
4. Centella asiatica	10	yes	FACW	
5. Erianthus spp.	10	yes	FAC	
6. Thelypteris spp.	5	no	FACW	
7. Lobelia spp.	5	no	OBL	
8. Rhynchospora colorata	5	no	OBL	
9. Cladium spp.	5	no	OBL	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
70 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No ☐
Woody Vine Stratum (Plot size: _____)				
1. Vitus rotundifolia	2	yes	FAC	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
2 = Total Cover				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: ZE**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/8/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: BH
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U 28.960046 Long: -82.654719 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)	Wetland Hydrology Present? Yes ☒ No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:		

VEGETATION - Use scientific names of plants

Sampling Point: _____ BH

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Sapling Stratum (Plot size: _____) 0 = Total Cover				Prevalance Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
Shrub Stratum (Plot size: _____) 0 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% Prevalence Index is $\leq 3.0^1$ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: _____) 5 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
1. Cladium spp.	50	yes	OBL	
2. Fuirena spp.	10	no	OBL	
3. Andropogon glomeratus	10	no	FACW	
4. Hyptis alata	5	no	OBL	
5. Erianthus spp.	5	no	FAC	
6. Lobelia spp.	5	no	OBL	
7. Oxypolis spp.	5	no	OBL	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____) 90 = Total Cover				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes ☒ No _____.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ 0 = Total Cover				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: BH**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)Type: Depth (inches):

Hydric Soil Present?

Yes ☒ No

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/8/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: BF
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 959845 Long: -82.655275 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION - Use scientific names of plants

 Sampling Point: BF

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Sapling Stratum (Plot size: _____) 0 = Total Cover				Prevalance Index worksheet: Total % Cover of: Multiply by: OBL species <u> </u> x1= <u> </u> FACW species <u> </u> x2= <u> </u> FAC species <u> </u> x3= <u> </u> FACU species <u> </u> x4= <u> </u> UPL species <u> </u> x5= <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalance Index = B/A = <u> </u>
Shrub Stratum (Plot size: _____) 20 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% Prevalence Index is $\leq 3.0^1$ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: _____) 2 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
1. Cladium spp.	30	yes	OBL	
2. Erianthus spp.	10	yes	FAC	
3. Eustachys glauca	10	yes	FACW	
4. Hyptis alata	5	no	OBL	
5. Lobelia spp.	5	no	OBL	
6. Dichromena spp.	5	no	FACW	
7. Setaria spp.	5	no	FAC	
8. Hydrocotyle spp.	5	no	OBL	
9. Spilanthes spp.	5	no	FACW	
10. Conoclium coelstinum	5	no	FAC	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____) 85 = Total Cover				
1. M kania scandens	2	yes	FACW	Hydrophytic Vegetation Present? Yes ☒ No ☐
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ 2 = Total Cover				
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: BF**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) **(LRR P, T, U)**
☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
☒ Muck Presence (A8) **(LRR U)**
☐ 1 cm Muck (A9) **(LRR P,T)**
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) **(MLRA 150A)**
☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) **(LRR P, S, T, U)**

- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
☐ Thin Dark Surface (S9) **(LRR S, T, U)**
☐ Loamy Mucky Mineral (F1) **(LRR O)**
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) **(LRR U)**
☐ Depleted Orchric (F11) **(MLRA 151)**
☐ Iron-Manganese Masses (F12) **(LRR O, P,T)**
☐ Umbric Surface (F13) **(LRR P, T, U)**
☐ Delta Orchric (F17) **(MLRA 151)**
☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) **(LRR O)**
☐ 2 cm Muck (A10) **(LRR S)**
☐ Reduced Vertic (F18) **(outside MLRA 150A, B)**
☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) **(LRR T, U)**
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes ☒ No _____.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/8/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: BG
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 35 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): LRR U Lat: 28 959837 Long: -82.653510 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are circumstances normal? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present?	Yes ☒ No _____	
Wetland Hydrology Present?	Yes ☒ No _____	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)	
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Sparsely Vegetated Concave Surface (B8)	
☒ Saturation (A3)	☐ Marl Deposits (B15) (LRR U)	☐ Drainage Patterns (B10)	
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Moss Trim Lines (B16)	
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Dry-Season Water Table (C2)	
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Crayfish Burrows (C8)	
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Saturation Visible on Aerial Imagery (C9)	
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)	
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)	
		☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes _____ No ☒ Depth (inches): _____ Water Table Present? Yes _____ No ☒ Depth (inches): _____ Saturation Present? Yes ☒ No _____ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:			

Sampling Point: BG

Adapted from U.S. Army Corps of Engineers
Atlantic and Gulf Coastal Plain Region- Interim Version

SOIL

BG

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³

- ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Hydric Soil Present?

Yes ✓ No .

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 10/29/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AL
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 33 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28.961446 Long: -82.693500 Datum: WGS84
 Soil Map Unit Name: Quartzipsamments, 0 to 5 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are circumstances normal? Yes ☒ No ☐
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☒ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u> </u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u> </u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants

 Sampling Point: _____ **AL**

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>5</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>5</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100.00</u> (A/B)
4. _____	_____	_____	_____	Prevalance Index worksheet: Total % Cover of: Multiply by: OBL species x1= _____ FACW species x2= _____ FAC species x3= _____ FACU species x4= _____ UPL species x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____	
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
0 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% ☐ Prevalance Index is $\leq 3.0^1$ ☐ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Sapling Stratum (Plot size: _____) 1. <i>Salix caroliniana</i> 40 yes OBL 2. <i>Sabal palmetto</i> 5 no FAC 3. <i>Fraxinus caroliniana</i> 1 no OBL 4. _____ 5. _____ 6. _____ 7. _____					
46 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.	
Shrub Stratum (Plot size: _____) 1. <i>Cephalanthus occidentalis</i> 5 yes OBL 2. <i>Baccharis</i> sp. 1 no FAC 3. _____ 4. _____ 5. _____ 6. _____ 7. _____					
6 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____	
Herb Stratum (Plot size: _____) 1. <i>Typha</i> spp. 10 yes OBL 2. <i>Diodia</i> spp. 5 no FAC 3. <i>Cyperus</i> spp. 5 no FACW 4. <i>Sagittaria</i> spp. 5 no OBL 5. <i>Pluchea odorata</i> 5 no FACW 6. <i>Ludwigia peruviana</i> 2 no OBL 7. <i>Spilanthes</i> spp. 2 no FACW 8. <i>Eupatorium serotinum</i> 1 no FAC 9. <i>Cladium</i> spp. 1 no OBL 10. <i>Erianthus</i> spp. 1 no FAC 11. _____ 12. _____					
37 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____	
Woody Vine Stratum (Plot size: _____) 1. <i>Mikania scandens</i> 20 yes FACW 2. <i>Ampelopsis arborea</i> 20 yes FAC 3. <i>Parthenocissus quinquefolia</i> 5 no FAC 4. _____ 5. _____					
45 = Total Cover					

Remarks: (If observed, list morphological adaptations below).

Percent cover estimates based on meandering survey of the broader community.

County/soil: Citrus- Quartzsammments

SOILSampling Point: AL**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10 YR 4/2	100						dark grayish brown sand
			10 YR 6/2; 10 YR 8/1; 10 YR					
6-32	N 5/0; 10 YR 7/1	80	5/2	20	RM	M	splotches and pockets	gray and light gray sand
32-42	7 5 YR 5/8	80	5 YR 3/4	20	RM	M	splotches	strong brown sand
42-60	10 YR 5/2	100						grayish brown sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (**LRR P, T, U**)
☐ 5 cm Mucky Mineral (A7) (**LRR P,T,U**)
☒ Muck Presence (A8) (**LRR U**)
☐ 1 cm Muck (A9) (**LRR P,T**)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (**MLRA 150A**)
☐ Sandy Mucky Mineral (S1) (**LRR O, S**)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (**LRR P, S, T, U**)

☐ Polyvalue Below Surface (S8) (**LRR S, T, U**)
☐ Thin Dark Surface (S9) (**LRR S, T, U**)
☐ Loamy Mucky Mineral (F1) (**LRR O**)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (**LRR U**)
☐ Depleted Orchric (F11) (**MLRA 151**)
☐ Iron-Manganese Masses (F12) (**LRR O, P,T**)
☐ Umbric Surface (F13) (**LRR P, T, U**)
☐ Delta Orchric (F17) (**MLRA 151**)
☐ Reduced Vertic (F18) (**MLRA 150A, 150B**)
☐ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
☐ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils ³

☐ 1 cm Muck (a9) (**LRR O**)
☐ 2 cm Muck (A10) (**LRR S**)
☐ Reduced Vertic (F18) (**outside MLRA 150A, B**)
☐ Piedmont Floodplain Soils (F19) (**LRR P, S, T**)
☐ Anomalous Bright Loamy Soils (F20) (**MLRA 153B**)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (**LRR T, U**)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (If observed)**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐.

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Levy Baseload Transmission Program, LCR City/County: Citrus Sampling Date: 11/5/09
 Applicant/Owner: Progress Energy Florida, Inc. State: FL Sampling Point: AU
 Investigator(s): Stacy Rizzo, Tony Davanzo Section, Township, Range: 34 17S 16E
 Landform (hillslope, terrace, etc.): N/A Local relief (concave, convex, none): none Slope (%):
 Subregion (LRR or MLRA): LRR U Lat: 28 959567 Long: -82.671469 Datum: WGS84
 Soil Map Unit Name: Boca fine sand NWI classification: NA

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are circumstances normal? Yes ☒ No ☐
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present?	Yes ☒ No ☐	
Wetland Hydrology Present?	Yes ☒ No ☐	
Remarks:		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>	
☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7)	☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ Marl Deposits (B15) (LRR U) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ FAC Neutral Test (D5)	
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): <u> </u> Water Table Present? Yes ☐ No ☒ Depth (inches): <u> </u> Saturation Present? Yes ☒ No ☐ Depth (inches): <u>0-12</u> (includes capillary fringe)		Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants

Sampling Point: _____ AU

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>88.89</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
Sapling Stratum (Plot size: _____) 0 = Total Cover				Prevalance Index worksheet: Total % Cover of: Multiply by: OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalance Index = B/A = _____
1. Salix caroliniana	5	yes	OBL	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Shrub Stratum (Plot size: _____) 5 = Total Cover				Hydrophytic Vegetation Indicators: ☒ Dominance Test is 50% Prevalance Index is ≤3.0 ¹ Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. Ilex cassine	5	yes	FACW	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
Herb Stratum (Plot size: _____) 5 = Total Cover				Definitions of Vegetation Strata: Tree- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling- Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub- Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb- All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine- All woody vines, regardless of height.
1. Erianthus spp.	15	yes	FAC	
2. Muhlenbergia spp.	15	yes	FAC	
3. Hyptis alata	10	yes	OBL	
4. Cladium spp.	10	yes	OBL	
5. Andropogon spp.	10	yes	FAC	
6. Solidago spp.	10	yes	FACU	
7. Eryngium spp.	10	yes	FACW	
8. Eupatorium mikanioides	5	no	FACW	
9. Tripsacum sp.	5	no	FAC	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
Woody Vine Stratum (Plot size: _____) 90 = Total Cover				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
0 = Total Cover				Hydrophytic Vegetation Present? Yes ☒ No _____.
Remarks: (If observed, list morphological adaptations below). Percent cover estimates based on meandering survey of the broader community.				

County/soil: Citrus- Boca

SOILSampling Point: AU**Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-7	10 YR 4/2		10 YR 3/1				few fine roots	dark grayish brown fine sand
							few medium distinct mottles and streaks	
7-20	10 YR 6/4		10 YR 6/6; 10 YR 7/2				common medium distinct mottles	light yellowish brown fine sand
20-39	10 YR 7/4		10 YR 6/6					very pale brown fine sand
39-80	10 YR 7/3							very pale brown fine sand

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators**

- ☐ Histol (A1)
☐ Histic Epidon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ Organic Bodies (A6) (LRR P, T, U)
☐ 5 cm Mucky Mineral (A7) (LRR P,T,U)
☒ Muck Presence (A8) (LRR U)
☐ 1 cm Muck (A9) (LRR P,T)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Coast Prairie Redox (A16) (MLRA 150A)
☐ Sandy Mucky Mineral (S1) (LRR O, S)
☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Dark Surface (S7) (LRR P, S, T, U)

- ☐ Polyvalue Below Surface (S8) (LRR S, T, U)
☐ Thin Dark Surface (S9) (LRR S, T, U)
☐ Loamy Mucky Mineral (F1) (LRR O)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ Marl (F10) (LRR U)
☐ Depleted Orchric (F11) (MLRA 151)
☐ Iron-Manganese Masses (F12) (LRR O, P,T)
☐ Umbric Surface (F13) (LRR P, T, U)
☐ Delta Orchric (F17) (MLRA 151)
☐ Reduced Vertic (F18) (MLRA 150A, 150B)
☐ Piedmont Floodplain Soils (F19) (MLRA 149A)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils ³

- ☐ 1 cm Muck (a9) (LRR O)
☐ 2 cm Muck (A10) (LRR S)
☐ Reduced Vertic (F18) (outside MLRA 150A, B)
☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
☐ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12) (LRR T, U)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed)Type: Depth (inches):

Hydric Soil Present?

Yes ☒ No

Remarks:

ATTACHMENT E

2014 FLORIDA PROFIT CORPORATION ANNUAL REPORT

DOCUMENT# 142619

Entity Name: DUKE ENERGY FLORIDA, INC.**Current Principal Place of Business:**550 S. TRYON STREET
CHARLOTTE, NC 28202**Current Mailing Address:**550 S. TRYON STREET
DEC45A
CHARLOTTE, NC 28202 US**FEI Number:** 59-0247770**Certificate of Status Desired:** No**Name and Address of Current Registered Agent:**CT CORPORATION SYSTEM
1200 SOUTH PINE ISLAND ROAD
PLANTATION, FL 33324 US*The above named entity submits this statement for the purpose of changing its registered office or registered agent, or both, in the State of Florida.***SIGNATURE:**_____
Electronic Signature of Registered Agent_____
Date**Officer/Director Detail :**

Title DIRECTOR
Name GOOD, LYNN J
Address 550 S. TRYON STREET
City State Zip: CHARLOTTE NC 28202

Title VP, TREASURER
Name DEMAY, STEPHEN G
Address 550 S. TRYON STREET
City State Zip: CHARLOTTE NC 28202

Title AS
Name WRIGHT, NANCY M
Address 550 S. TRYON STREET
DEC45A
City State Zip: CHARLOTTE NC 28202

Title DIRECTOR
Name JAMIL, DHIAA M
Address 550 S. TRYON STREET
City State Zip: CHARLOTTE NC 28202

Title DIRECTOR
Name JANSON, JULIA S
Address 550 S. TRYON STREET
City State Zip: CHARLOTTE NC 28202

Title DIRECTOR
Name TRENT, B. KEITH
Address 550 S. TRYON STREET
City State Zip: CHARLOTTE NC 28202

Title DIRECTOR
Name YATES, LLOYD M
Address 550 S. TRYON STREET
City State Zip: CHARLOTTE NC 28202

Title SENIOR VICE PRESIDENT,
ENVIRONMENTAL HEALTH AND
SAFETY
Name ALLEN, JASON M
Address 526 S. CHURCH STREET
City State Zip: CHARLOTTE NC 28202

Continues on page 2

I hereby certify that the information indicated on this report or supplemental report is true and accurate and that my electronic signature shall have the same legal effect as if made under oath; that I am an officer or director of the corporation or the receiver or trustee empowered to execute this report as required by Chapter 607, Florida Statutes; and that my name appears above, or on an attachment with all other like empowered.

SIGNATURE: NANCY M. WRIGHT**ASSISTANT SECRETARY** 01/15/2014_____
Electronic Signature of Signing Officer/Director Detail_____
Date

Officer/Director Detail Continued :

Title SENIOR VICE PRESIDENT AND CHIEF
TRANSMISSION OFFICER
Name ANDERS, CAREN B
Address 526 S. CHURCH STREET
City State Zip: CHARLOTTE NC 28202

Title ASSISTANT TREASURER
Name BUCKLER, W. BRYAN
Address 550 S. TRYON STREET
City State Zip: CHARLOTTE NC 28202

Title SENIOR VICE PRESIDENT AND CHIEF
DISTRIBUTION OFFICER
Name CARTER, BRETT C
Address 526 S. CHURCH STREET
City State Zip: CHARLOTTE NC 28202

Title VP, NUCLEAR OVERSIGHT
Name DONAHUE, JOSEPH W
Address 526 S. CHURCH STREET
City State Zip: CHARLOTTE NC 28202

Title VP, PROJECT MANAGEMENT AND
CONSTRUCTION
Name ELNITSKY, JOHN
Address 526 S. CHURCH STREET
City State Zip: CHARLOTTE NC 28202

Title VP, NUCLEAR DEVELOPMENT
Name FALLON, CHRISTOPHER M
Address 526 S. CHURCH STREET
City State Zip: CHARLOTTE NC 28202

Title ASSISTANT SECRETARY AND VICE PRESIDENT
LEGAL
Name FOUNTAIN, DAVID B
Address 411 FAYETTEVILLE STREET
City State Zip: RALEIGH NC 27601

Title SENIOR VICE PRESIDENT, OCONEE AND
ROBINSON
Name GILLESPIE, T. P. JR.
Address 526 S. CHURCH STREET
City State Zip: CHARLOTTE NC 28202

Title VP, ENVIRONMENTAL
Name GRIGGS, MITCHELL C
Address 526 S. CHURCH STREET
City State Zip: CHARLOTTE NC 28202

Title VP, RATES AND REGULATORY STRATEGY
Name JACOBS, DWIGHT L.
Address 526 S. CHURCH STREET

Title VP, TRANSMISSION DESIGN
ENGINEERING & ASSET
MANAGEMENT
Name BAGLEY, RICHARD W
Address 526 S. CHURCH STREET
City State Zip: CHARLOTTE NC 28202

Title VP, TAX
Name BUTLER, KEITH G
Address 550 S. TRYON STREET
City State Zip: CHARLOTTE NC 28202

Title CHIEF RISK OFFICER AND VICE
PRESIDENT, GLOBAL RISK
MANAGEMENT AND INSURANCE
Name DAJI, SWATI V
Address 550 S. TRYON STREET
City State Zip: CHARLOTTE NC 28202

Title SENIOR VICE PRESIDENT, CATAWBA
AND MCGUIRE
Name DUNCAN, ROBERT J II
Address 526 S. CHURCH STREET
City State Zip: CHARLOTTE NC 28202

Title VP, HEALTH AND SAFETY
Name ENGELMAN, MICHAEL D
Address 526 S. CHURCH STREET
City State Zip: CHARLOTTE NC 28202

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ATTACHMENT F



Conceptual Stormwater Pond Design Basis



Duke Energy

Project No. 71404

July 2014

Conceptual Stormwater Pond Design Basis

prepared for

**Duke Energy
Citrus County, Florida**

July 2014

Project No. 71404

prepared by

**Burns & McDonnell Engineering Company, Inc.
Kansas City, Missouri**

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CERTIFICATION

I hereby certify, as a Professional Engineer in the State of Florida, that the information in this document was assembled under my direct personal charge. This report is not intended or represented to be suitable for reuse by Duke Energy or others without specific verification or adaptation by the Engineer.


Randell L. Sedlacek, P.E. (Florida License No. 66026)

Date: 7/16/14

* * * * *

This document has been digitally signed and sealed.
Jul 16 2014

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* * * * *

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* * * * *

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APPENDIX E	Drawing CS312 – Outfall Structure Details

* * * * *

1.0 PROJECT OBJECTIVES

This conceptual stormwater pond design basis document will establish the preliminary design criteria, including flow rates and effluent volumes, for the design of new construction stormwater treatment ponds and stormwater detention ponds at the Citrus County Combined Cycle Site for Duke Energy.

The objective of the following document is to convey the preliminary design criteria for both pre-construction and post-construction phases of the site to meet the requirements of the Southwest Florida Water Management District. An overview of the required design criteria that will be implemented as part of the combined cycle project is provided in the following sections. Furthermore, Drawing CS308 (included in Appendix C) shows the proposed ponds as part of an overall site plan for the facility and also shows the various post-construction drainage areas.

1.1 References and Resources

The main reference used in the preliminary design of the stormwater ponds was the Environmental Resource Permit Applicant's Handbook Volume II, by Southwest Florida Water Management District, dated October 1, 2013. Stormwater data was selected from the Southwest Florida Water Management District's document titled, "Three Design Alternatives For Stormwater Detention Ponds", dated June 1997. The software used to model the drainage areas and determine pond, weir, bleed-down pipe, and discharge pipe sizes were HEC-HMS, Version 3.5 and Bentley FlowMaster.

1.2 Summary of Stormwater Ponds

The Citrus County Combined Cycle site consists of five primary drainage areas. Starting on the north side of the plant the Construction Laydown Area will drain to Construction Stormwater Treatment Ponds #1 and #2. The main power block of the site, including the cooling towers, will drain to Stormwater Detention Ponds #1 and #2. Stormwater Detention Pond #3 will receive runoff from the construction parking area on the west side of the power block. A majority of the substation will drain to Stormwater Detention Pond #4. The remainder of the substation and the gas yard area will drain to Stormwater Detention Pond #5.

* * * * *

2.0 TYPICAL POND DESIGN

The new treatment ponds will include Construction Stormwater Treatment Ponds #1 and #2, and Stormwater Detention Ponds #1 through #5. All ponds include stormwater management system; stormwater treatment system; discharge structures and will have similar details of design and construction as described in this Section.

2.1 General Pond Preliminary Design

The primary purpose of the treatment ponds is for solids removal from stormwater runoff. The Construction Stormwater Treatment Ponds will be wet detention ponds, but will only be used temporarily during the extent of construction. The Stormwater Detention Ponds #1 and #2 will be dry detention ponds because of restrictions in the site grading, while the Stormwater Detention Ponds # 3, #4, and #5 will be wet detention ponds.

Roads capable of handling small vehicles will be provided to the discharge structures of each of the ponds. The bottoms of the dry detention ponds will be sloped from the inlet to the discharge structure. The bottoms of the wet detention ponds will be flat as they are designed for permanent standing water. All ponds will be constructed from native soil material, with a specified permeability rate that will be determined during detailed design. The interior side slopes of all ponds will be covered with vegetative material.

2.2 Outlet Structure and Layout

The outlet structures of the ponds will consist of open-top concrete boxes with weirs for the inflow and pipes to convey the discharge water. The outlet structure for each pond will be located on the side of pond opposite of the inlet to allow for the maximum possible detention/solids settling time.

For dry ponds, a bleed-down pipe on the bottom of the pond will be connected to the concrete box, to allow the discharge of the first inch of the stormwater runoff event. The weir will be a rectangular weir. The purpose of the weir is to convey flow after the first inch. The top of the concrete box will be set to an elevation for emergency overflow situations.

The outlet structures of the wet detention ponds will be very similar to that of the dry detention ponds, except the weir is a v-notch weir. Additionally, there will be no bleed-down pipe to convey the first inch of the stormwater runoff. The bottom elevations of the ponds are more than one foot below the control

elevation. All the control elevations are above seasonal high water level but no higher than two feet above seasonal high water table. Figure 2-1, below, shows the Southwest Florida Water Management District's example of a wet detention pond outlet structure design.

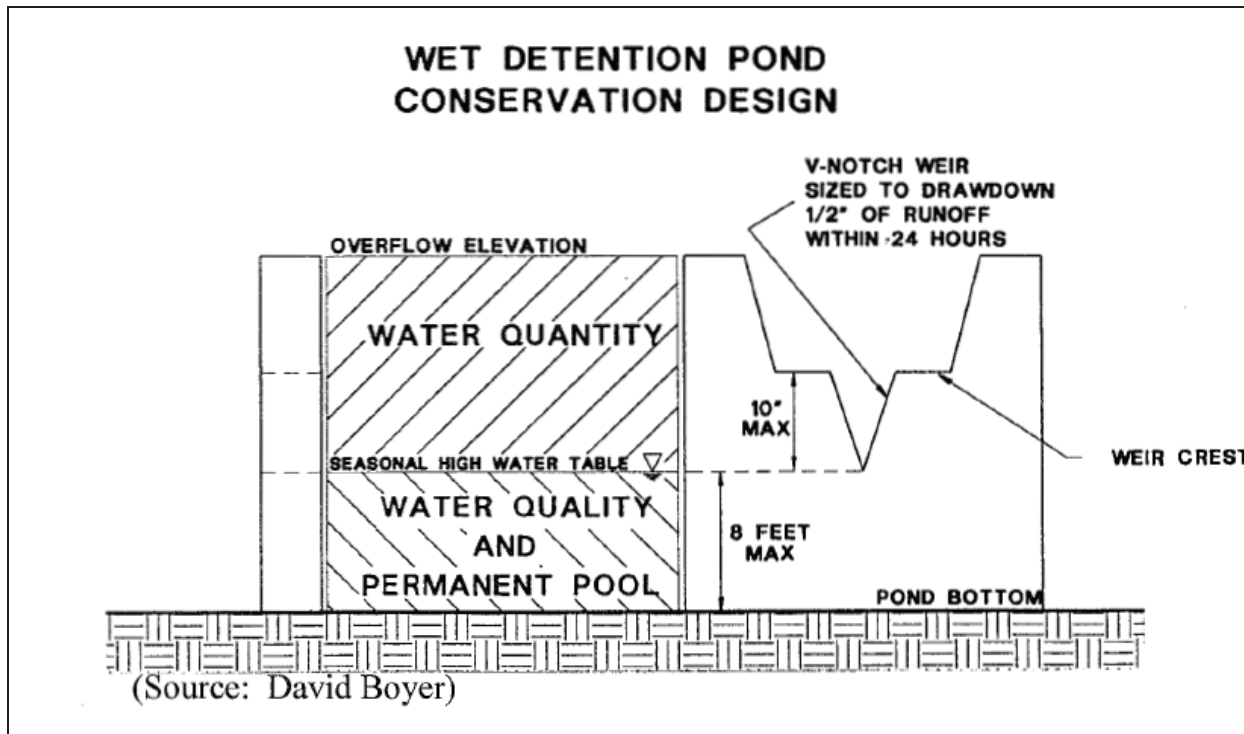


Figure 2-1: Wet Detention Pond Outlet Structure

2.3 Pond Sizing and Depth

The preliminary pond sizing and depths are based on what is required for runoff from a 25-Year, 24-Hour storm event (See Figure 2-2) and will also allow for 24 hours residence time for solids settling. Depth for the storage of solids has not been accounted for. Final design of each pond will also allow for one foot of freeboard, above the required storage volume depth.

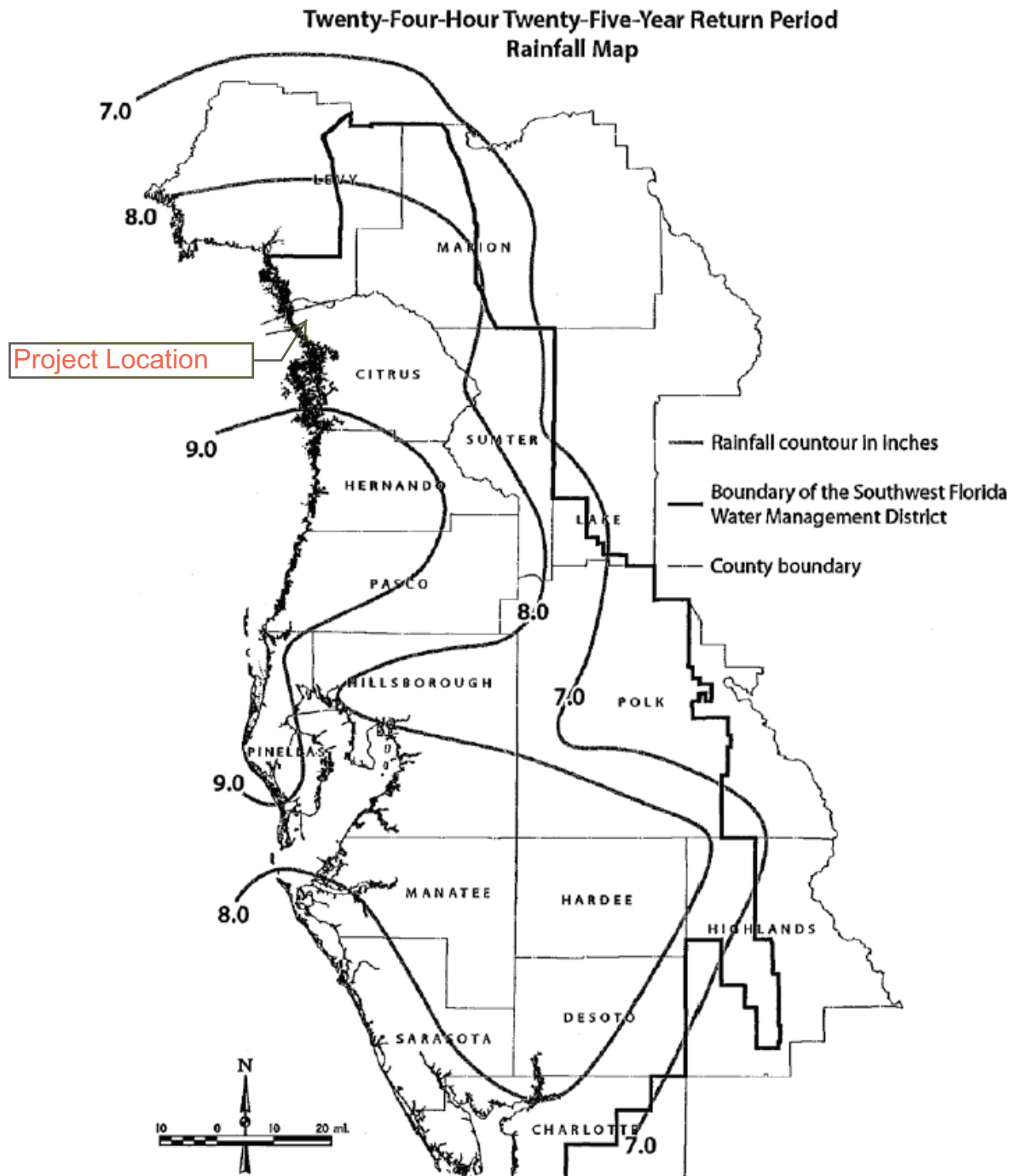


Figure 2-2 25-Year, 24-Hour Rainfall Map

* * * * *

3.0 DESIGN FLOWS FOR PONDS

All pond peak flow stormwater runoff estimates have been preliminarily based on hydrologic modeling of each drainage area for a Type II, 25-Year, 24-Hour storm event. Pre and post-construction peak runoff values are indicated below in Figure 3-1. Summary of all calculation inputs, pond sizing and outflow data, as well as elevation-area tables are included in Appendix A. Hydrologic modeling information is included in Appendix B.

Contributing Pond	Pre-Construction Peak Flow (cfs)	Post-Construction Peak Flow to Ponds (cfs)	Post-Construction Restricted Flow from Outfalls (cfs)
Construction Stormwater Treatment Pond #1	51.2	100.1	30.0
Construction Stormwater Treatment Pond #2	84.7	349.2	60.0
Stormwater Detention Pond #1	50.8	88.6	12.5
Stormwater Detention Pond #2	69.9	102.9	12.2
Stormwater Detention Pond #3	69.1	125.4	17.2
Stormwater Detention Pond #4	90.8	176.2	36.2
Stormwater Detention Pond #5	57.6	80.4	12.7

Figure 3-1 Pre and Post-Construction Peak Runoff Values

* * * * *

APPENDIX A

POND DESIGN DATA

Preliminary Pond Calculation Data

Contributing Pond Areas	Treatment Method	Pre-Construction Area (acres)	Pre-Construction Area CN	Pre-Construction Peak Flow (cfs)	Post-Construction Area (acres)	Post-Construction Area CN	Post-Construction Peak Flow to Ponds (cfs)	Detention Volume (First Inch Runoff) (ac-ft)	24-Hour Max Discharge (ac/ft/day)	Permanent Wet Pond Volume (ac-ft)
Construction Stormwater Treatment Pond #1 *	wet detention	24	50	51.2	24	80	100.1	1.67	0.83	6.77
Construction Stormwater Treatment Pond #2 *	wet detention	33	50	84.7	39	80	349.2	3.25	1.63	12.00
Stormwater Detention Pond #1	dry detention	24	50	50.8	14	98	88.6	1.15	0.57	...
Stormwater Detention Pond #2	dry detention	26	50	69.9	12	98	102.9	1.00	0.50	...
Stormwater Detention Pond #3	wet detention	18	50	69.1	13	98	125.4	1.12	0.56	4.50
Stormwater Detention Pond #4	wet detention	37	50	90.8	19	80	176.2	1.60	0.80	6.43
Stormwater Detention Pond #5	wet detention	15	50	57.6	8	80	80.4	0.63	0.31	2.52
Total Pond Surface Area					32					
Runoff to Off Site					17					

* CN relates to period of time during construction.

Pond Sizing and Outfall Data

Pond Area	Detention Pond Surface Area (acre)	Total Pond Capacity (ac-ft)	Pond Depth (ft)	Peak Flow Elevation (ft)	Bleed down pipe size (inch)	Bleed down V-notch Angle (degree)	Weir Width (ft)	Weir Elevation (ft)	Emergency Overflow Elevation (ft)	Top of Pond Berm Elevation (ft)	[Post- Construction] Outfall Discharge Rate (cfs)
Construction Stormwater Treatment Pond #1	4.22	7.8	4.3	7.40	...	48	7.40	6.26	7.4	7.9	30.0
Construction Stormwater Treatment Pond #2	6.95	26.2	4.3	7.40	...	82	7.40	6.26	7.4	7.9	60.0
Stormwater Detention Pond #1	2.41	8.0	4.5	9.20	4	...	3.8	7.4	8.7	10.2	40.0
Stormwater Detention Pond #2	2.69	8.2	4.3	8.80	3	...	3.6	6.5	8.5	9.8	40.0
Stormwater Detention Pond #3	4.00	13.3	4.6	7.20	...	33	6.5	6.2	7.2	8.2	40.0
Stormwater Detention Pond #4	8.94	30.2	4.6	7.20	...	46	9.5	6.1	7.0	8.2	60.0
Stormwater Detention Pond #5	2.45	6.4	4.0	6.60	...	38	6.5	5.6	6.4	7.6	30.0

Pond Area-Elevation Table

Stormwater Detention Pond #1	
Area (acre)	Elevation (ft)
2.07	5.70
2.18	6.70
2.29	7.70
2.41	8.70

Stormwater Detention Pond #2	
Area (acre)	Elevation (ft)
2.33	5.50
2.45	6.50
2.56	7.50
2.69	8.50

Stormwater Detention Pond #3	
Area (acre)	Elevation (ft)
3.4	3.60
3.54	4.60
3.69	5.60
3.85	6.60
4.00	7.60

Stormwater Detention Pond #4	
Area (acre)	Elevation (ft)
8.05	3.60
8.27	4.60
8.48	5.60
8.71	6.60
8.94	7.60

Stormwater Detention Pond #5	
Area (acre)	Elevation (ft)
2.00	3.60
2.11	4.60
2.22	5.60
2.34	6.60
2.45	7.60

APPENDIX B

DETENTION BASIN CALCULATIONS

Stormwater treatment system calculation reference

(From Environment resource permitting information manual (SWFWMD))

Treatment volume (ac-ft)	Vt	(At)(1in)(1ft/12in)
	A	Total contributing area (ac)
Perment wet pool volume (ac-ft)	Vr	(A) (C) (P) (R) (1ft/12in)
	A	Total contributing area (ac)
	C	Rational runoff coefficient
	P	Historic average wet season rainfall rate (31.04in/122day Average season rainfall 31.04in/yr (Figure 2)
	R	Residence time (14days)
Design pool volume (ac-ft)	V	Treatment voulme(Vt) + Perment wet pool volume(Vr)
Miminum design pool volume (ac-ft)	Vmin	(A) (0.667in) (1ft/12in)
Miminum pond area	As	

**CONSTRUCTION STORMWATER TREATMENT PONDS
CALCULATIONS**

Pre-construction peak flow -construction stormwater treatment pond #1 area

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Laydown west
Method	SCS Curve No
Area (MI2)	0.0378
Initial Loss (IN)	2
% Impervious	0
SCS Curve No.	50
SCS Lag (MIN)	12
Baseflow	No

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
---------------	----

HEC-HMS Results

25 year, 24 hour peak runoff Q 51.2 cfs



HEC-HMS

Project : Duke Preconstruction Flow

Basin Model : Temp pond #1

Jul 14 14:48:17 CDT 2014

laydown area west



Project: Duke Preconstruction Flow Simulation Run: laydown west

Start of Run: 10May2014, 10:10 Basin Model: Temp. pond #1

End of Run: 11May2014, 10:11 Meteorologic Model: 25 year

Compute Time: 14Jul2014, 14:49:51 Control Specifications: 24 hr

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
laydown area west	0.0378	51.2	10May2014, 22:24	5.4

Pre-construction peak flow -Construction stormwater treatment pond #2 area

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Laydown east
Method	SCS Curve No
Area (MI2)	0.0518
Initial Loss (IN)	2
% Impervious	0
SCS Curve No.	50
SCS Lag (MIN)	15
Baseflow	No

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
---------------	----

HEC-HMS Results

25 year, 24 hour peak runoff Q 84.7 cfs



HEC-HMS

Project : Duke Preconstruction Flow

Basin Model : Temp. pond #2

Jul 14 14:56:00 CDT 2014



laydown east

Project: Duke Preconstruction Flow Simulation Run: Laydown east

Start of Run: 10May2014, 10:10 Basin Model: Temp. pond #2

End of Run: 11May2014, 10:11 Meteorologic Model: 25 year

Compute Time: 14Jul2014, 14:56:27 Control Specifications: 24 hr

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
laydown east	0.0518	84.7	10May2014, 22:19	7.4

Post construction Stormwater treatment pond #1 and #2 sizing with 25yr, 24hr storm

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Laydown area west	Laydown area east	Temp Pond 1	Temp pond 2
Method	SCS Curve No			
Area (MI ²)	0.01412	0.0609	0.0063	0.0108
Initial Loss (IN)	0.5	0.5		
% Impervious	80	80	100	100
SCS Curve No.	80	80	98	98
SCS Lag (MIN)	9	9	1	1
Baseflow	No	No		

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
---------------	----

Pre-construction Peak discharge

Temp Pond 1 area Q = 51.2 cfs	Design discharge rate Q =30cfs
Temp Pond 2 area Q = 84.7 cfs	Design discharge rate Q =60cfs

HEC-HMS Results

25 year, 24 hour Storm runoff pond size need 7.8 ac-ft for temp pond 1
One discharge structure total Qout =30cfs
25 year, 24 hour Storm runoff pond size need 26.2 ac-ft for temp pond 2
Two discharge structures Qout = 30cfs each

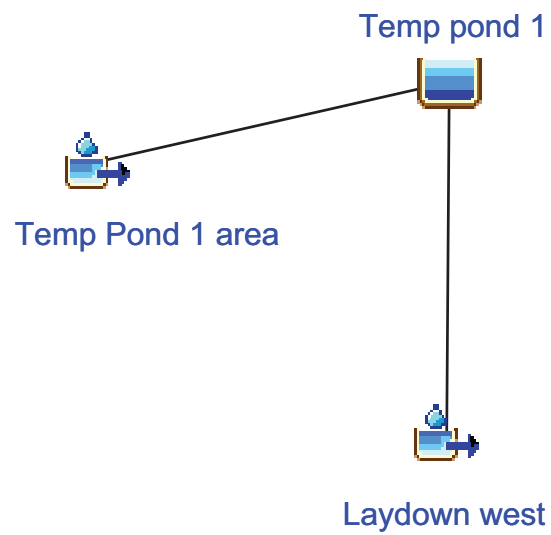


HEC-HMS

Project : Construction Laydown Areas

Basin Model : Laydown area west

Jul 15 10:19:04 CDT 2014



Project: Duke laydown Simulation Run: Run 3

Start of Run: 10May2014, 10:10 Basin Model: laydown area 1
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 07May2014, 19:01:01 Control Specifications: 24 hour

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
laydown west	0.01412	73.2	10May2014, 22:12	4.9
pond 1 area	0.00630	50.5	10May2014, 22:03	2.9
Temp pond 1	0.02042	100.1	10May2014, 22:07	7.8

Construction Stormwater Treatment Pond #1 discharge system design

Construction Stormwater Treatment pond #1 is wet detention pond
The contributing area 20 acres

- 1 Calculate required treatment volume as 1" of runoff of contributing area

$$V_t = A \times (1\text{in}) \times (1\text{ft}/12\text{in})$$

$$V_t = (20\text{ac}) \times (1\text{in}) \times (1\text{ft}/12\text{in}) = 1.667\text{ac-ft}$$

- 2 Calculate permanent wet pool volume

$$V_r = (A) (C) (P) (R) (1\text{ft}/12\text{in})$$

$$V_r = (20\text{ac}) \times (0.85) \times (31.04\text{in}/122\text{day}) \times (14\text{day}) \times (1/12) = 5.10\text{ac-ft}$$

The min treatment volume of 0.667 inch of runoff of contributing area

$$V_{\text{min}} = (20\text{ac}) (0.667) (1/12) = 0.8251.11\text{ac-ft}$$

$$V_r > V_{\text{min}}$$

Use treatment volume $V = 5.10\text{ ac-ft}$

So, the total wet detention system design pool volume

$$V = 1.667\text{ac-ft} + 5.10\text{ac-ft} = 6.767\text{ ac-ft}$$

- 3 Calculate min. wet pool area

Based on 0.5" of runoff

$$V = (20\text{ac}) \times (0.5\text{in}) \times (1\text{ft}/12\text{in}) = 0.83\text{ac-ft}$$

Max head on V-notch is 10"

$$A_s = (0.83\text{ ac-ft}) / (10") (1/12) = 0.99\text{ ac}$$

Based on design pool volume $V = 6.767\text{ac-ft}$ and max pond depth 2.5ft based on existing surface elevation)

$$6.767\text{ac-ft} = 2.0\text{ ft } A_s$$

$$\text{Min wet pool area } A_s = 3.38\text{ ac}$$

- 4 Sizing discharge V-notch to discharge 0.5" of detention runoff from the contributing area in 24 hours with 10" maximum head

$$\text{First 0.5" runoff } V = 0.83\text{ ac-ft}$$

24hr treatment

$$Q = 0.418\text{ cfs, Use 8" head}$$

From Flowmaster

Design discharge	Q=	0.418	cfs
Head water	H=	0.667	ft
Coefficient	C=	0.600	
V-notch angle		48.280	degree
Design V-notch		48 degree	

- 5 Sizing discharge weir.

From pre-construction peak flow $Q = 51.2\text{ cfs}$

Design each weir peak $Q = 30\text{ cfs}$

Design discharge	Q=	30	cfs
Head water	H=	1.2	ft
Coefficient	C=	3.100	
Contraction		1.000	
Use FlowMaster			
Maximum Crest length	L=	7.480	ft
Design weir		L = 7.4	ft

Worksheet for temp pond V-Notch Weir

Project Description

Solve For Notch Angle

Input Data

Discharge	0.42	ft ³ /s
Headwater Elevation	0.67	ft
Crest Elevation	0.00	ft
Tailwater Elevation	0.00	ft
Coefficient of Discharge	0.60	

Results

Angle	48.28	degrees
Headwater Height Above Crest	0.67	ft
Tailwater Height Above Crest	0.00	ft
Flow Area	0.20	ft ²
Velocity	2.10	ft/s
Wetted Perimeter	1.46	ft
Top Width	0.60	ft

Worksheet for temp pond 1 Rectangular Weir -

Project Description

Solve For Crest Length

Input Data

Discharge	30.00	ft ³ /s
Headwater Elevation	1.20	ft
Crest Elevation	0.00	ft
Tailwater Elevation	0.00	ft
Weir Coefficient	3.10	US
Number Of Contractions	1	

Results

Crest Length	7.48	ft
Headwater Height Above Crest	1.20	ft
Tailwater Height Above Crest	0.00	ft
Flow Area	8.98	ft ²
Velocity	3.34	ft/s
Wetted Perimeter	9.88	ft
Top Width	7.48	ft



HEC-HMS

Project : Construction Laydown Areas

Basin Model : laydown area east

Jul 15 10:21:11 CDT 2014

Temp pond 2



Temp pond 2 area



laydown east

Project: Construction Laydown Areas Simulation Run: laydown east

Start of Run: 10May2014, 10:10 Basin Model: laydown area east

End of Run: 11May2014, 10:11 Meteorologic Model: 25 year

Compute Time: 15Jul2014, 10:21:57 Control Specifications: 24 hour

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
laydown east	0.0609	315.7	10May2014, 22:12	21.1
Temp pond 2 area	0.0108	86.6	10May2014, 22:03	5.0
Temp pond 2	0.0717	349.2	10May2014, 22:10	26.2

Construction Stormwater Treatment Pond #2 discharge system design

Construction Stormwater Treatment pond #2 is wet detention pond
The contributing area 39 acres

- 1 Calculate required treatment volume as 1" of runoff of contributing area

$$V_t = A \times (1\text{in}) \times (1\text{ft}/12\text{in})$$

$$V_t = (39\text{ac}) \times (1\text{in}) \times (1\text{ft}/12\text{in}) = 3.25\text{ac-ft}$$

- 2 Calculate permanent wet pool volume

$$V_r = (A) (C) (P) (R) (1\text{ft}/12\text{in})$$

$$V_r = (39\text{ac}) \times (0.85) \times (31.04\text{in}/122\text{day}) \times (14\text{day}) \times (1/12) = 9.84\text{ac-ft}$$

The min treatment volume of 0.667 inch of runoff of contributing area

$$V_{\min} = (39\text{ac}) (0.667) (1/12) = 2.16\text{ac-ft}$$

$$V_r > V_{\min}$$

Use treatment volume $V = 9.84 \text{ ac-ft}$

So, the total wet detention system design pool volume

$$V = 3.25\text{ac-ft} + 9.84\text{ac-ft} = 13.09 \text{ ac-ft}$$

- 3 Calculate min. wet pool area

Based on 0.5" of runoff

$$V = (39\text{ac}) \times (0.5\text{in}) \times (1\text{ft}/12\text{in}) = 1.625\text{ac-ft}$$

Max head on V-notch is 10"

$$A_s = (1.625 \text{ ac-ft}) / (10") (1/12) = 1.95 \text{ ac}$$

Based on design pool volume $V = 13.09 \text{ ac-ft}$ and max pond depth 2.5ft based on existing surface elevation)

$$13.09 \text{ ac-ft} = 2.0 \text{ ft } A_s$$

$$\text{Min wet pool area } A_s = 6.54 \text{ ac}$$

- 4 Sizing discharge V-notch to discharge 0.5" of detention runoff from the contributing area in 24 hours with 10" maximum head

$$\text{First 0.5" runoff } V = 1.625 \text{ ac-ft}$$

24hr treatment

$$Q = 0.819 \text{ cfs, Use 8" head}$$

From Flowmaster

Design discharge	Q=	0.819	cfs
Head water	H=	0.667	ft
Coefficient	C=	0.600	
V-notch angle		82.570	degree
Design V-notch		82 degree	

- 5 Sizing discharge weir. Two discharge structure are used

Pre-construction peak flow $Q = 84.7 \text{ cfs}$

Design two discharge structure, each weir peak $Q = 30 \text{ cfs}$

Design each discharge	Q=	30	cfs
Head water	H=	1.2	ft
Coefficient	C=	3.100	
Contraction		1.000	
Use FlowMaster			
Maximum Crest length	L=	7.480	ft
Design weir		L = 7.4 ft	

Worksheet for temp pond 2 V-Notch Weir

Project Description

Solve For Notch Angle

Input Data

Discharge	0.82	ft ³ /s
Headwater Elevation	0.67	ft
Crest Elevation	0.00	ft
Tailwater Elevation	0.00	ft
Coefficient of Discharge	0.60	

Results

Angle	82.57	degrees
Headwater Height Above Crest	0.67	ft
Tailwater Height Above Crest	0.00	ft
Flow Area	0.39	ft ²
Velocity	2.10	ft/s
Wetted Perimeter	1.78	ft
Top Width	1.17	ft

Worksheet for temp pond 2 Rectangular Weir -

Project Description

Solve For Crest Length

Input Data

Discharge	30.00	ft ³ /s
Headwater Elevation	1.20	ft
Crest Elevation	0.00	ft
Tailwater Elevation	0.00	ft
Weir Coefficient	3.10	US
Number Of Contractions	1	

Results

Crest Length	7.48	ft
Headwater Height Above Crest	1.20	ft
Tailwater Height Above Crest	0.00	ft
Flow Area	8.98	ft ²
Velocity	3.34	ft/s
Wetted Perimeter	9.88	ft
Top Width	7.48	ft

STORMWATER DETENTION POND #1
CALCULATIONS

Pre-construction peak flow -stormwater detention pond #1 area

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Power Block West
Method	SCS Curve No
Area (MI2)	0.0375
Initial Loss (IN)	2
% Impervious	0
SCS Curve No.	50
SCS Lag (MIN)	16
Baseflow	No

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
---------------	----

Result

25 year, 24 hour peak Storm runoff Q 50.8 cfs



HEC-HMS

Project : Duke Preconstruction Flow

Basin Model : Pond #1

Jul 14 16:29:43 CDT 2014

Power Block West



Project: Duke Preconstruction Flow Simulation Run: Power block west

Start of Run: 10May2014, 10:10 Basin Model: Pond #1
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 14Jul2014, 16:39:06 Control Specifications: 24 hr

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Power Block West	0.0375	58.9	10May2014, 22:20	5.3

Stormwater detention pond #1 sizing with 25yr, 24hr storm

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Power block west	Cooling tower west	Chill area	Switch yard west	Pond area
Method	SCS Curve No				
Area (MI ²)	0.0109	0.00203	0.001076	0.003228	0.004388
Initial Loss (IN)	0.04	0.04	0.04	0.04	0.02
% Impervious	100	100	100	100	100
SCS Curve No.	98	98	98	98	99
SCS Lag (MIN)	6	8	9	9	1
Baseflow	No	No	No	No	No

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
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Pre-construction Peak discharge

Pond 1 area Q = 50.8 cfs Design discharge Q_{out} = 40 cfs

HEC-HMS Results

25 year, 24 hour Storm runoff pond size need 8.0 ac-ft
Two discharge structures Q_{out} = 20cfs each

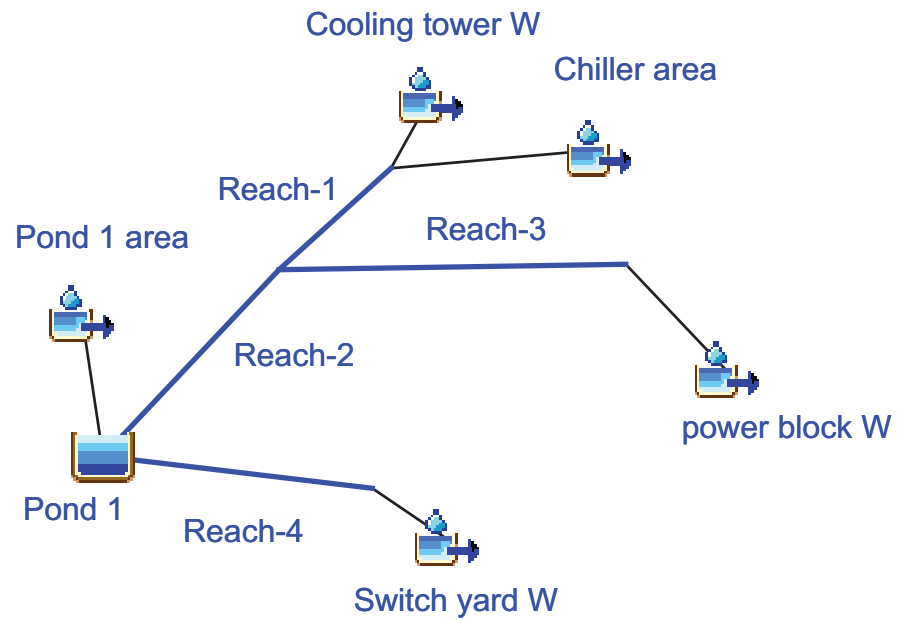


HEC-HMS

Project : Post construction pond #1

Basin Model : power block and cooling W

Jul 15 09:05:10 CDT 2014



Project: Post construction pond #1 Simulation Run: Power block west

Start of Run: 10May2014, 10:10 Basin Model: power block and cooling
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 16Jul2014, 12:59:16 Control Specifications: 24 hr

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
power block W	0.010900	65.8	10May2014, 22:12	5.0
Reach-3	0.010900	59.9	10May2014, 22:18	5.0
Cooling tower W	0.002030	10.9	10May2014, 22:14	0.9
Chiller area	0.001076	5.2	10May2014, 22:17	0.5
Reach-1	0.003106	14.7	10May2014, 22:24	1.4
Reach-2	0.014006	70.9	10May2014, 22:20	6.4
Pond 1 area	0.003760	30.1	10May2014, 22:03	1.7
Switch yard W	0.003228	15.9	10May2014, 22:12	1.0
Reach-4	0.003228	14.1	10May2014, 22:22	1.0
Pond 1	0.020994	12.5	10May2014, 23:02	7.4

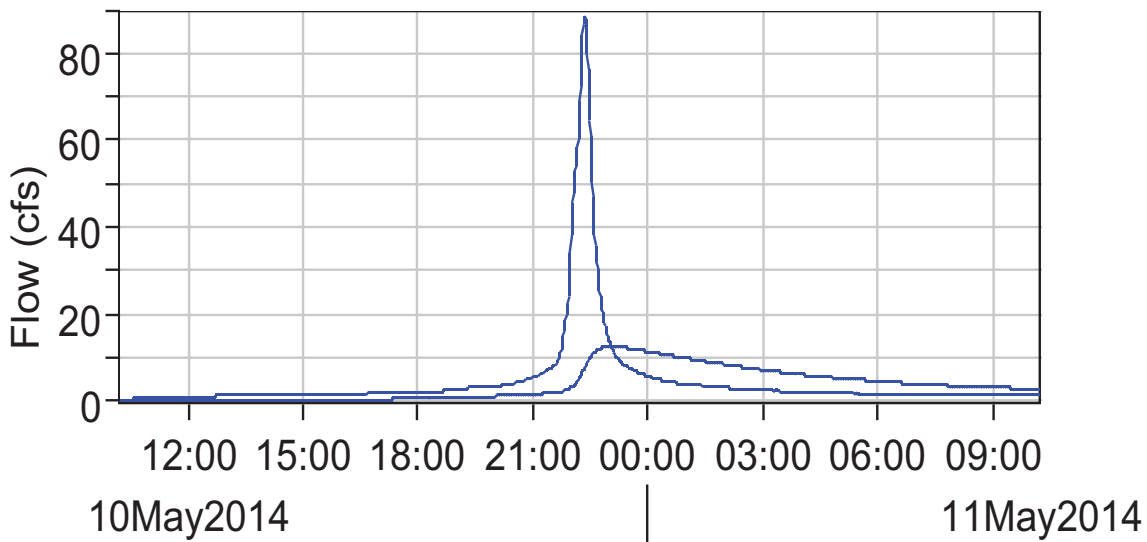
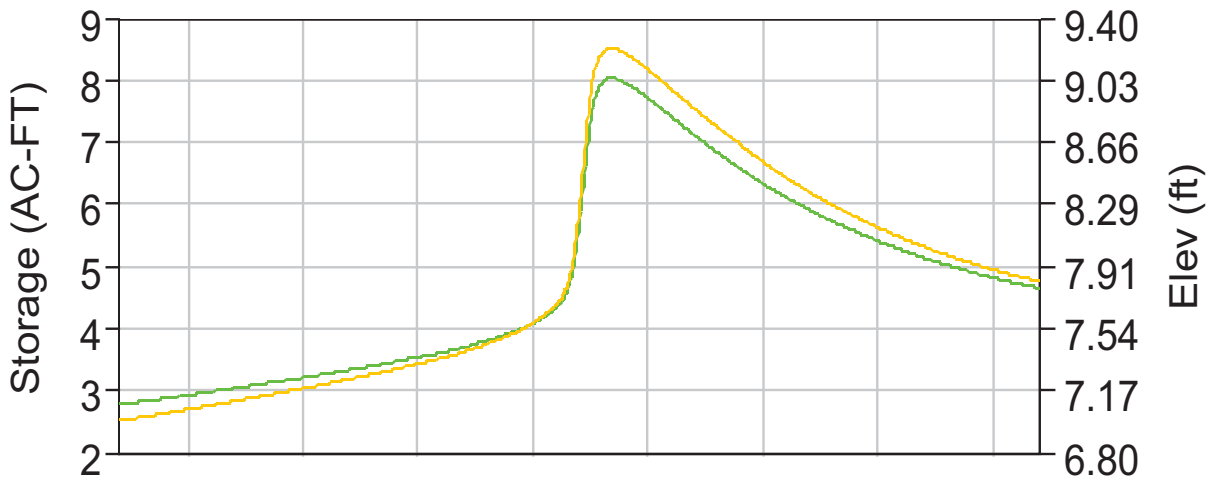
Project: Post construction pond #1
Simulation Run: Power block west Reservoir: Pond 1
Start of Run: 10May2014, 10:10 Basin Model: power block and cooling W
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 16Jul2014, 12:59:16 Control Specifications: 24 hr

Volume Units: AC-FT

Computed Results

Peak Inflow :	88.6 (CFS)	Date/Time of Peak Inflow :	10May2014, 22:21
Peak Outflow :	12.5 (CFS)	Date/Time of Peak Outflow :	10May2014, 23:02
Total Inflow :	9.2 (AC-FT)	Peak Storage :	8.0 (AC-FT)
Total Outflow :	7.4 (AC-FT)	Peak Elevation :	9.2 (FT)

Reservoir "Pond 1" Results for Run "Power block west"



- Run:Power block west Element:POND 1 Result:Storage
- Run:Power block west Element:POND 1 Result:Pool Elevation
- Run:Power block west Element:POND 1 Result:Outflow
- Run:Power block west Element:POND 1 Result:Combined Flow

Stormwater detention pond #1 discharge system design

Pond #1 is dry detention pond

The contributing area for detention pond 1 A = 13.8 acres

- 1 Calculate required treatment volume as 1" of runoff of contributing area

$$V_t = A \times (1 \text{ in}) \times (1 \text{ ft} / 12 \text{ in})$$

$$= (13.8 \text{ ac}) \times (1 \text{ in}) \times (1 \text{ ft} / 12 \text{ in}) = 1.15 \text{ ac-ft}$$

Pond area A = 50094 sf

Detention storm runoff depth = 12"

- 2 Bleed down pipe sizing

Bleed down pipe size to discharge one -half inch of detention runoff from the contributing area in 24 hours

$$V = (0.5 \text{ in}) \times (13.8 \text{ ac}) \times (1 / 12) = 0.57 \text{ ac-ft}$$

Required treatment time 24 hr, Max. bleed down pipe flow rate

$$Q = (0.57 \text{ ac-ft}) / 24 \text{ hr} = 0.0237 \text{ cfs}$$

From flowmaster, use one 4" bleed down pipe

- 3 Sizing discharge weir

Design peak Q_{out} = 30 cfs through two discharge structures

Design discharge $Q = 15$ cfs

Head water $H = 1.2$ ft

Coefficient $C = 3.100$

Contraction 1.000

Use FlowMaster

Maximum Crest length $L = 3.810$ ft

Using weir $L = 3.8$ ft

pond 1 bleed down pipe

Project Description

Friction Method	Manning Formula
Solve For	Channel Diameter

Input Data

Roughness Coefficient	0.010	
Channel Slope	0.01000	ft/ft
Normal Depth	0.30	ft
Discharge	0.29	ft ³ /s

Results

Diameter	0.35	ft
Flow Area	0.09	ft ²
Wetted Perimeter	0.83	ft
Hydraulic Radius	0.10	ft
Top Width	0.24	ft
Critical Depth	0.30	ft
Percent Full	86.5	%
Critical Slope	0.01021	ft/ft
Velocity	3.30	ft/s
Velocity Head	0.17	ft
Specific Energy	0.47	ft
Froude Number	0.96	
Maximum Discharge	0.30	ft ³ /s
Discharge Full	0.28	ft ³ /s
Slope Full	0.01088	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	86.48	%
Downstream Velocity	Infinity	ft/s

Pond 1 bleed down pipe

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.20	ft
Critical Depth	0.24	ft
Channel Slope	0.01000	ft/ft
Critical Slope	0.00581	ft/ft

Worksheet for pond 1 Rectangular Weir

Project Description

Solve For Crest Length

Input Data

Discharge	15.00	ft ³ /s
Headwater Elevation	1.20	ft
Crest Elevation	0.00	ft
Tailwater Elevation	0.00	ft
Weir Coefficient	3.10	US
Number Of Contractions	1	

Results

Crest Length	3.80	ft
Headwater Height Above Crest	1.20	ft
Tailwater Height Above Crest	0.00	ft
Flow Area	4.56	ft ²
Velocity	3.29	ft/s
Wetted Perimeter	6.20	ft
Top Width	3.80	ft

STORMWATER DETENTION POND #2
CALCULATIONS

Pre-construction peak flow -stormwater detention pond #2 area

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Power Block East
Method	SCS Curve No
Area (MI ²)	0.0406
Initial Loss (IN)	1.63
% Impervious	0
SCS Curve No.	55
SCS Lag (MIN)	17
Baseflow	No

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
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Result

25 year, 24 hour peak Storm runoff Q 69.9 cfs



HEC-HMS

Project : Duke Preconstruction Flow

Basin Model : Pond #2

Jul 14 16:19:11 CDT 2014

Power block east



Project: Duke Preconstruction Flow Simulation Run: Power block east

Start of Run: 10May2014, 10:10 Basin Model: Pond #2
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 14Jul2014, 16:51:36 Control Specifications: 24 hr

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Power block east	0.0406	69.9	10May2014, 22:24	7.0

Stormwater detention Pond #2 sizing with 25yr, 24hr storm

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Power block esst	Cooling tower east	Building area	Switch yard east	Pond area
Method	SCS Curve No				
Area (MI2)	0.0109	0.00203	0.00264	0.003228	0.0036
Initial Loss (IN)	0.04	0.04	0.04	0.04	0.02
% Impervious	100	100	100	100	100
SCS Curve No.	98	98	98	98	99
SCS Lag (MIN)	9	9	6	9	1
Baseflow	No	No	No	No	No

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
---------------	----

Pre-construction Peak discharge

Pond 2 area Q = 69.9 cfs Design discharge Qout = 40 cfs

HEC-HMS Results

25 year, 24 hour Storm runoff pond size need 8.2 ac-ft
Two discharge structures Qout = 20cfs each

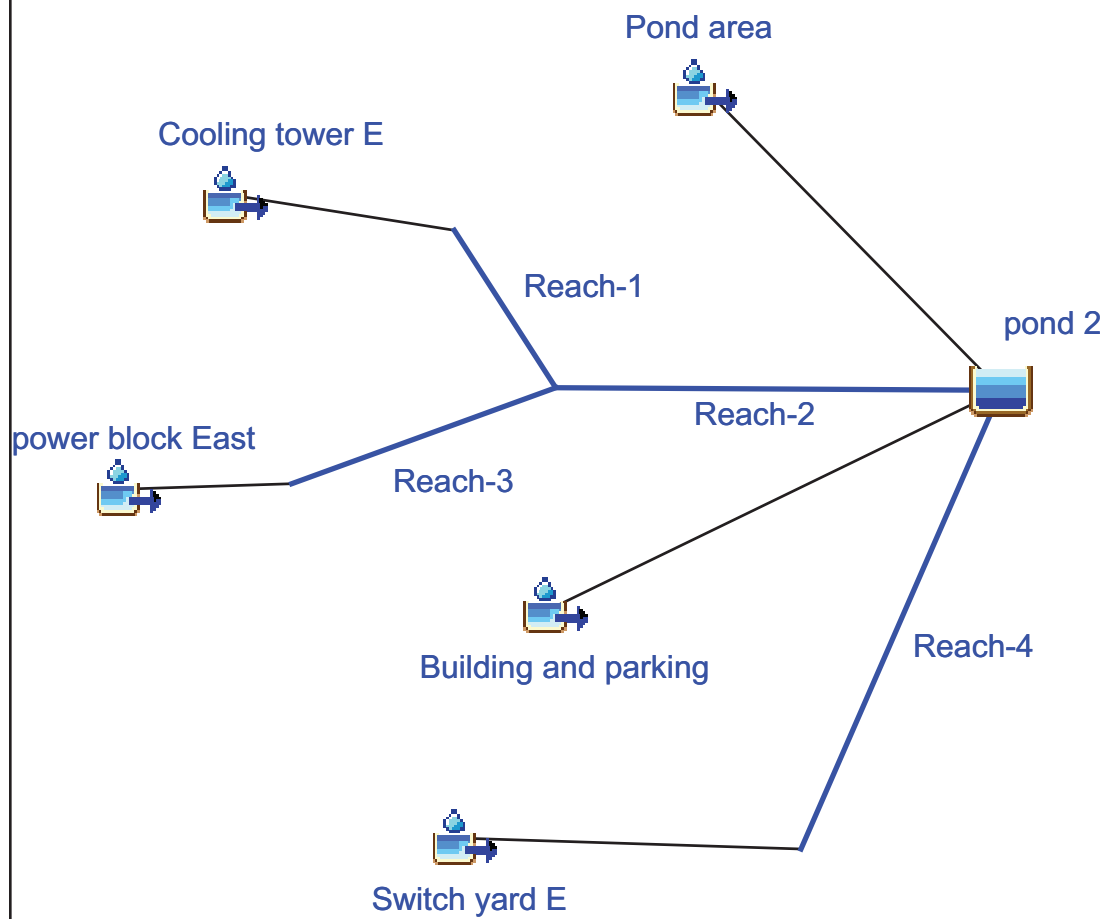


HEC-HMS

Project : Post construction pond #2

Basin Model : Power block and Cooling East

Jul 15 08:53:18 CDT 2014



Project: Post construction pond #2 Simulation Run: Power block east

Start of Run: 10May2014, 10:10 Basin Model: Power block and Coolin
 End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
 Compute Time: 15Jul2014, 08:54:46 Control Specifications: 24 hr

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
power block East	0.010900	65.8	10May2014, 22:12	5.0
Reach-3	0.010900	64.1	10May2014, 22:15	5.0
Cooling tower E	0.002030	12.2	10May2014, 22:12	0.9
Reach-1	0.002030	11.8	10May2014, 22:18	0.9
Reach-2	0.012930	74.9	10May2014, 22:16	6.0
Pond area	0.003600	28.9	10May2014, 22:03	1.7
Switch yard E	0.003228	15.9	10May2014, 22:12	1.0
Reach-4	0.003228	15.3	10May2014, 22:18	1.0
Building and parking	0.002640	17.9	10May2014, 22:09	1.2
pond 2	0.022398	12.2	10May2014, 22:56	7.6

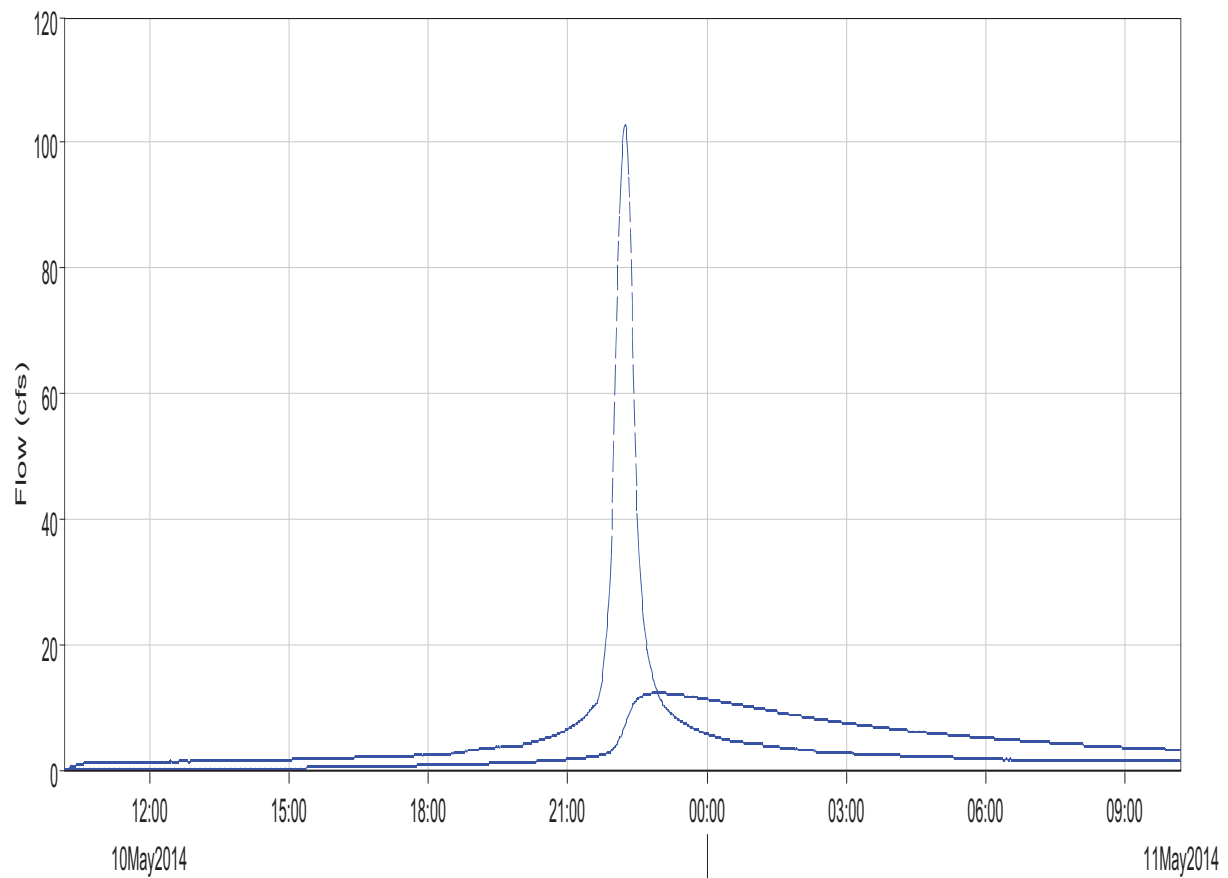
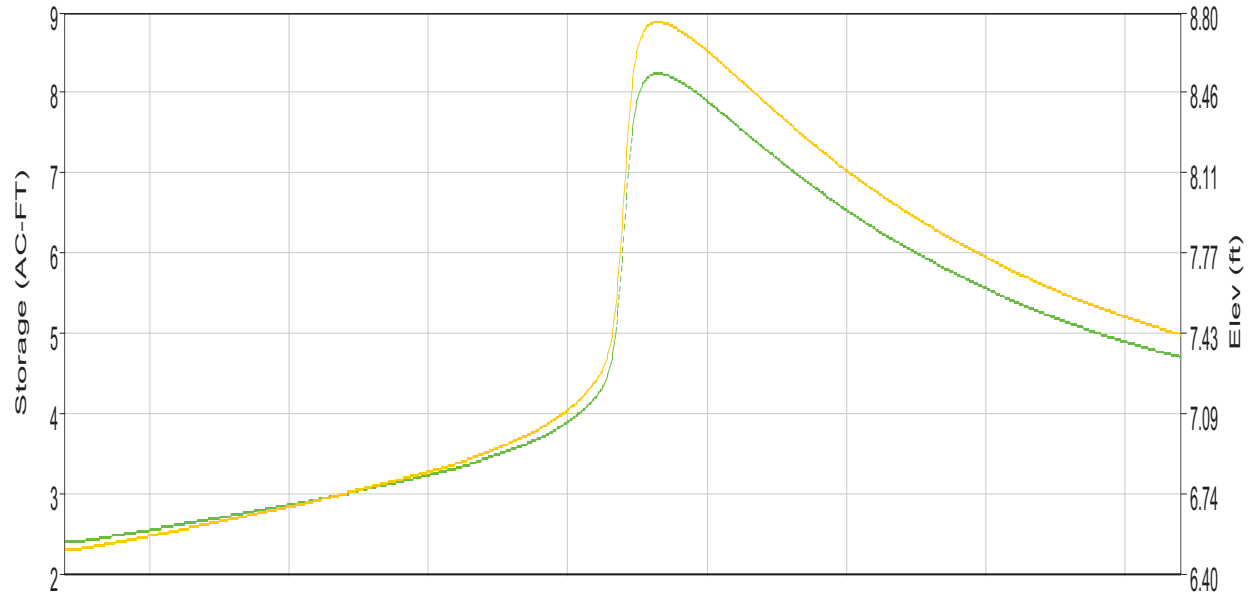
Project: Post construction pond #2
Simulation Run: Power block east Reservoir: pond 2
Start of Run: 10May2014, 10:10 Basin Model: Power block and Cooling East
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 15Jul2014, 08:54:46 Control Specifications: 24 hr

Volume Units: AC-FT

Computed Results

Peak Inflow :	102.9 (CFS)	Date/Time of Peak Inflow :	10May2014, 22:14
Peak Outflow :	12.2 (CFS)	Date/Time of Peak Outflow :	10May2014, 22:56
Total Inflow :	9.9 (AC-FT)	Peak Storage :	8.2 (AC-FT)
Total Outflow :	7.6 (AC-FT)	Peak Elevation :	8.8 (FT)

Reservoir "pond 2" Results for Run "Power block east"



..... Run:Power block east Element:POND 2 Result:Storage
 — Run:Power block east Element:POND 2 Result:Outflow

- - - Run:Power block east Element:POND 2 Result:Pool Elevation
 - - - Run:Power block east Element:POND 2 Result:Combined Flow

Stormwater detention Pond #2 discharge system design

Pond 2 is dry detention pond

The contributing area for detention pond #2 A = 12 aces

- 1 Calculate required treatment volume as 1" of runoff of contributing area

$$V = A \times (1\text{in}) \times (1\text{ft}/12\text{in})$$

$$= (12\text{ac}) \times (1\text{in}) \times (1\text{ft}/12\text{in}) = 1.0\text{ac-ft}$$

Pond area A = 75264 sf

Detention storm runoff depth = 0.58ft

- 2 Bleed down pipe sizing

The maximum discharge rate is 0.5in of detention volume in 24 hour

$$V = (0.5\text{in}) \times (12\text{ac}) \times (1/12) = 0.5\text{ac-ft}$$

Required treatment time 24 hr, Max. bleed down pipe flow rate

$$Q = (0.5\text{ac-ft}) / 24\text{hr} = 0.252\text{ cfs}$$

In two discharge structure

From flowmaster, use two 3" bleed down pipe

- 3 Sizing discharge weir

Design peak Qout = 40 cfs through two discharge structures

Design discharge	Q=	20	cfs
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Head water	H=	1.5	ft
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Coefficient	C=	3.100	
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Contraction		1.000	
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Use FlowMaster

Maximum Crest length	L=	3.660	ft
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Using weir L = 3.6 ft

pond 2 bleed down

Project Description

Friction Method	Manning Formula
Solve For	Channel Diameter

Input Data

Roughness Coefficient	0.010	
Channel Slope	0.01000	ft/ft
Normal Depth	0.20	ft
Discharge	0.13	ft ³ /s

Results

Diameter	0.27	ft
Flow Area	0.05	ft ²
Wetted Perimeter	0.56	ft
Hydraulic Radius	0.08	ft
Top Width	0.24	ft
Critical Depth	0.21	ft
Percent Full	72.8	%
Critical Slope	0.00863	ft/ft
Velocity	2.81	ft/s
Velocity Head	0.12	ft
Specific Energy	0.32	ft
Froude Number	1.14	
Maximum Discharge	0.16	ft ³ /s
Discharge Full	0.15	ft ³ /s
Slope Full	0.00775	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	72.81	%
Downstream Velocity	Infinity	ft/s

pond 2 bleed down

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.20	ft
Critical Depth	0.21	ft
Channel Slope	0.01000	ft/ft
Critical Slope	0.00863	ft/ft

Worksheet for Pond 2 Weir

Project Description

Solve For Crest Length

Input Data

Discharge	20.00	ft ³ /s
Headwater Elevation	1.50	ft
Crest Elevation	0.00	ft
Tailwater Elevation	0.00	ft
Weir Coefficient	3.10	US
Number Of Contractions	1	

Results

Crest Length	3.66	ft
Headwater Height Above Crest	1.50	ft
Tailwater Height Above Crest	0.00	ft
Flow Area	5.49	ft ²
Velocity	3.64	ft/s
Wetted Perimeter	6.66	ft
Top Width	3.66	ft

structure discharge pipe

Project Description

Friction Method	Manning Formula
Solve For	Channel Diameter

Input Data

Roughness Coefficient	0.010	
Channel Slope	0.00500	ft/ft
Normal Depth	1.50	ft
Discharge	13.00	ft ³ /s

Results

Diameter	1.63	ft
Flow Area	2.01	ft ²
Wetted Perimeter	4.18	ft
Hydraulic Radius	0.48	ft
Top Width	0.89	ft
Critical Depth	1.36	ft
Percent Full	91.8	%
Critical Slope	0.00562	ft/ft
Velocity	6.45	ft/s
Velocity Head	0.65	ft
Specific Energy	2.15	ft
Froude Number	0.76	
Maximum Discharge	13.03	ft ³ /s
Discharge Full	12.12	ft ³ /s
Slope Full	0.00575	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	91.84	%
Downstream Velocity	Infinity	ft/s

structure discharge pipe

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.50	ft
Critical Depth	1.36	ft
Channel Slope	0.00500	ft/ft
Critical Slope	0.00562	ft/ft

STORMWATER DETENTION POND #3
CALCULATIONS

Pre-construction peak flow -stormwater detention pond #3 area

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Parking area
Method	SCS Curve No
Area (MI2)	0.0281
Initial Loss (IN)	2
% Impervious	0
SCS Curve No.	50
SCS Lag (MIN)	6
Baseflow	No

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
---------------	----

Result

25 year, 24 hour peak Storm runoff Q 69.1 cfs



HEC-HMS

Project : Duke Preconstruction Flow

Basin Model : Pond #3

Jul 14 16:12:07 CDT 2014

Parking area



Project: Duke Preconstruction Flow Simulation Run: parking area

Start of Run: 10May2014, 10:10 Basin Model: Pond #3
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 14Jul2014, 16:13:27 Control Specifications: 24 hr

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Parking area	0.0281	69.1	10May2014, 22:10	4.0

Stormwater detention pond #3 sizing with 25yr, 24hr storm

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Parking area and road	Pond area
Method	SCS Curve No	
Area (MI ²)	0.02092	0.00625
Initial Loss (IN)	0.04	0.04
% Impervious	100	100
SCS Curve No.	98	98
SCS Lag (MIN)	9	1
Baseflow	No	No

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
---------------	----

Pre-construction Peak discharge

Pond 3 area Q = 69.1 cfs Design discharge Qout = 40 cfs

HEC-HMS Results

25 year, 24 hour Storm runoff pond size need 13.3 ac-ft
Two discharge structures Qout = 20cfs each



HEC-HMS

Project : Post construction pond #3

Basin Model : Parking area

Jul 15 08:46:07 CDT 2014

Parking area



Pond 3 area



Pond 3

Project: Post construction pond #3 Simulation Run: Parking area

Start of Run: 10May2014, 10:10 Basin Model: Parking area

End of Run: 11May2014, 10:11 Meteorologic Model: 25 year

Compute Time: 15Jul2014, 08:47:00 Control Specifications: 24 hour

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Parking area	0.02092	112.5	10May2014, 22:14	9.7
Pond 3 area	0.00625	50.1	10May2014, 22:03	2.9
Pond 3	0.02717	17.2	10May2014, 22:50	10.0

Project: Post construction pond #3
Simulation Run: Parking area Reservoir: Pond 3

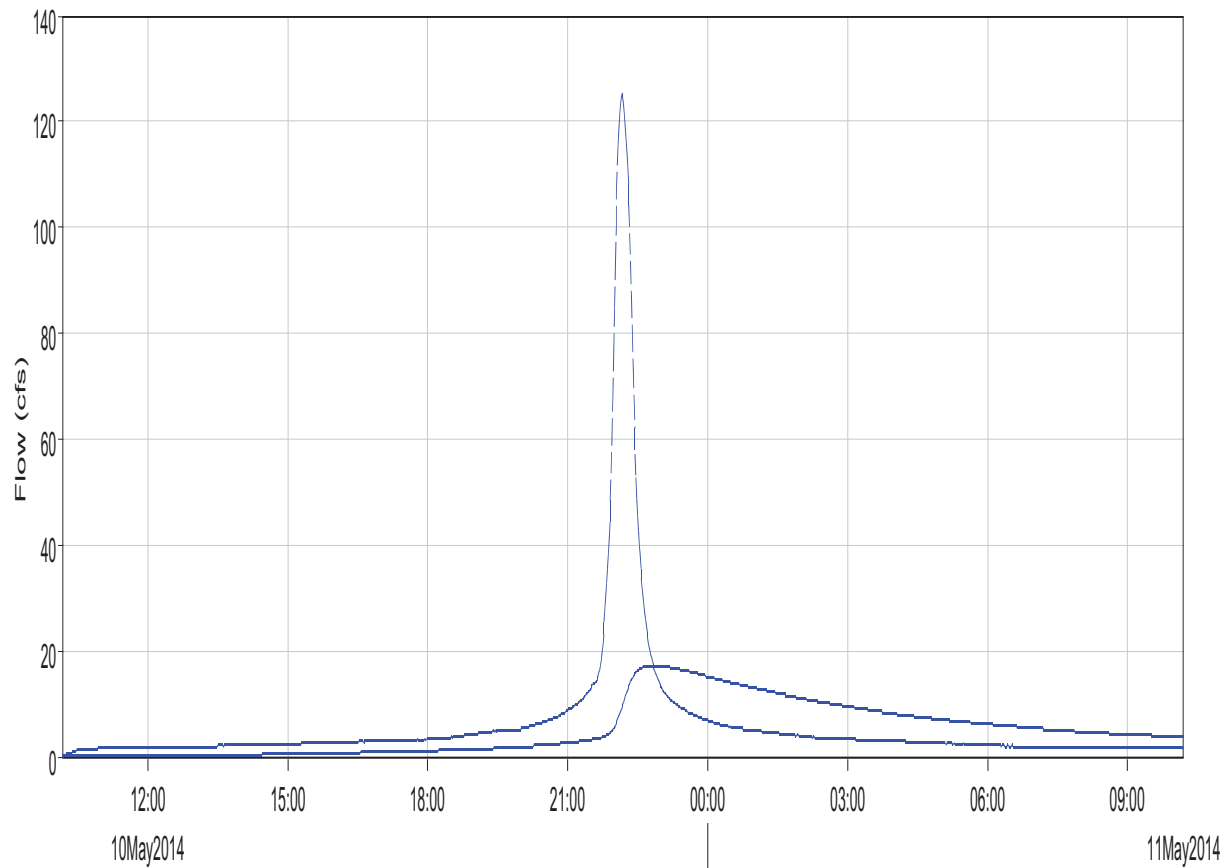
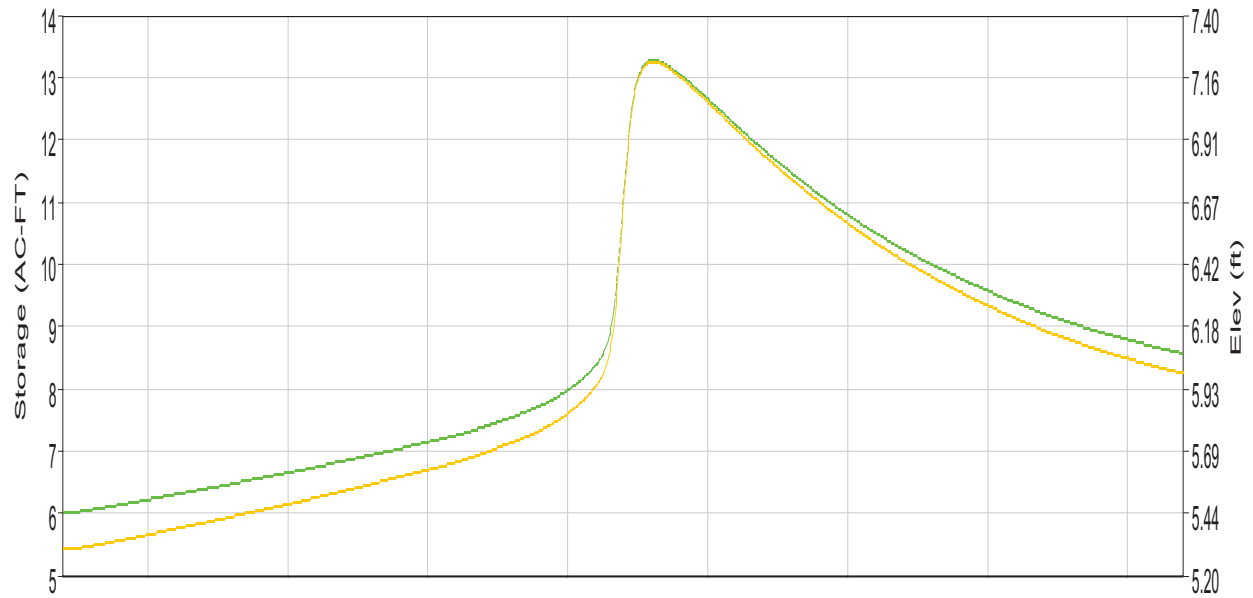
Start of Run:	10May2014, 10:10	Basin Model:	Parking area
End of Run:	11May2014, 10:11	Meteorologic Model:	25 year
Compute Time:	15Jul2014, 08:47:00	Control Specifications:	24 hour

Volume Units: AC-FT

Computed Results

Peak Inflow :	125.4 (CFS)	Date/Time of Peak Inflow :	10May2014, 22:10
Peak Outflow :	17.2 (CFS)	Date/Time of Peak Outflow :	10May2014, 22:50
Total Inflow :	12.6 (AC-FT)	Peak Storage :	13.3 (AC-FT)
Total Outflow :	10.0 (AC-FT)	Peak Elevation :	7.2 (FT)

Reservoir "Pond 3" Results for Run "Parking area"



--- Run: Parking area Element: POND 3 Result: Storage
--- Run: Parking area Element: POND 3 Result: Pool Elevation
--- Run: Parking area Element: POND 3 Result: Outflow
--- Run: Parking area Element: POND 3 Result: Combined Flow

Stormwater detention pond #3 discharge system design

Stormwater detention pond #3 is wet detention pond

The contributing area for detention pond #3 A = 13.4 acres

- 1 Calculate required treatment volume as 1" of runoff of contributing area

$$V_t = A \times (1\text{in}) \times (1\text{ft}/12\text{in})$$

$$V_t = (13.4\text{ac}) \times (1\text{in}) \times (1\text{ft}/12\text{in}) = 1.115\text{ac-ft}$$

- 2 Calculate permanent wet pool volume

$$V_r = (A) (C) (P) (R) (1\text{ft}/12\text{in})$$

$$V_r = (13.4\text{ ac}) \times (0.85) \times (31.04\text{in}/122\text{day}) \times (14\text{day}) \times (1/12) = 3.38\text{ac-ft}$$

The min. treatment volume of 0.667 inch of runoff of contributing area

$$V_{\min} = (13.4\text{ac}) (0.667) (1/12) = 0.739\text{ ac-ft}$$

$$V_r > V_{\min}$$

Use treatment volume $V = 3.38\text{ ac-ft}$

So, the total wet detention system design pool volume

$$V = 1.115\text{ac-ft} + 3.38\text{ac-ft} = 4.495\text{ ac-ft}$$

- 3 Calculate min. wet pool area

Based on 0.5" of runoff

$$V = (13.4\text{ac}) \times (0.5\text{in}) \times (1\text{ft}/12\text{in}) = 0.558\text{ac-ft}$$

Max head on V-notch is 10"

$$A_s = (0.558\text{ ac-ft}) / (10\text{in}) (1/12) = 0.67\text{ ac}$$

Based on design pool volume $V = 4.495\text{ac-ft}$ and max pond depth 2ft based on existing surface elevation)

$$4.495\text{ac-ft} = (2\text{ft}) A_s$$

$$\text{Min wet pool area } A_s = 2.247\text{ ac}$$

- 4 Sizing discharge V-notch to discharge 0.5" of detention runoff from the contributing area in 24 hours with 10" maximum head

$$\text{First 0.5" runoff } V = 0.558\text{ ac-ft}$$

24hr treatment

$$Q = 0.281\text{ cfs, use 8" head}$$

From Flowmaster

Design discharge	Q=	0.281	cfs
Head water	H=	0.67	ft
Coefficient	C=	0.600	
V-notch angle		33.2	degree
Design V-notch		33 degree	

- 5 Sizing discharge weir. Two discharge structures are used

From pre-construction peak flow $Q = 45\text{ cfs}$, design $Q_{\text{out}} = 20\text{cfs}$ each

Design discharge	Q=	20	cfs
Head water	H=	1	ft
Coefficient	C=	3.100	
Contraction		1.000	
Use FlowMaster			
Maximum Crest length	L=	6.550	ft
Design weir		L = 6.5	ft

Worksheet for pond 3 V-Notch Weir

Project Description

Solve For Notch Angle

Input Data

Discharge	0.28	ft ³ /s
Headwater Elevation	0.67	ft
Crest Elevation	0.00	ft
Tailwater Elevation	0.00	ft
Coefficient of Discharge	0.60	

Results

Angle	33.18	degrees
Headwater Height Above Crest	0.67	ft
Tailwater Height Above Crest	0.00	ft
Flow Area	0.13	ft ²
Velocity	2.10	ft/s
Wetted Perimeter	1.40	ft
Top Width	0.40	ft

Worksheet for Pond 3 Rectangular Weir

Project Description

Solve For Crest Length

Input Data

Discharge	20.00	ft ³ /s
Headwater Elevation	1.00	ft
Crest Elevation	0.00	ft
Tailwater Elevation	0.00	ft
Weir Coefficient	3.10	US
Number Of Contractions	1	

Results

Crest Length	6.55	ft
Headwater Height Above Crest	1.00	ft
Tailwater Height Above Crest	0.00	ft
Flow Area	6.55	ft ²
Velocity	3.05	ft/s
Wetted Perimeter	8.55	ft
Top Width	6.55	ft

STORMWATER DETENTION POND #4
CALCULATIONS

Pre-construction peak flow -stormwater detention pond #4 area

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Substation North west area
Method	SCS Curve No
Area (MI2)	0.0578
Initial Loss (IN)	2
% Impervious	0
SCS Curve No.	50
SCS Lag (MIN)	16
Baseflow	No

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
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Result

25 year, 24 hour peak Storm runoff Q 90.8 cfs



HEC-HMS

Project : Duke Preconstruction Flow

Basin Model : Pond #4

Jul 14 15:51:49 CDT 2014

Substation area



Project: Duke Preconstruction Flow Simulation Run: Substation

Start of Run: 10May2014, 10:10 Basin Model: Pond #4
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 14Jul2014, 15:54:24 Control Specifications: 24 hr

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Substation area	0.0578	90.8	10May2014, 22:20	8.2

Stormwater detention pond #4 sizing with 25yr, 24hr storm

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Substation North West	Pond
Method	SCS Curve No	
Area (MI ²)	0.0294	0.0139
Initial Loss (IN)	0.5	0.04
% Impervious	80	100
SCS Curve No.	80	98
SCS Lag (MIN)	9	1
Baseflow	No	No

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
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Pre-construction Peak discharge

Pond 3 area Q = 90.8 cfs Design discharge Qout = 60 cfs

HEC-HMS Results

25 year, 24 hour Storm runoff pond size need 30.2 ac-ft
Two discharge structures Qout = 30cfs each

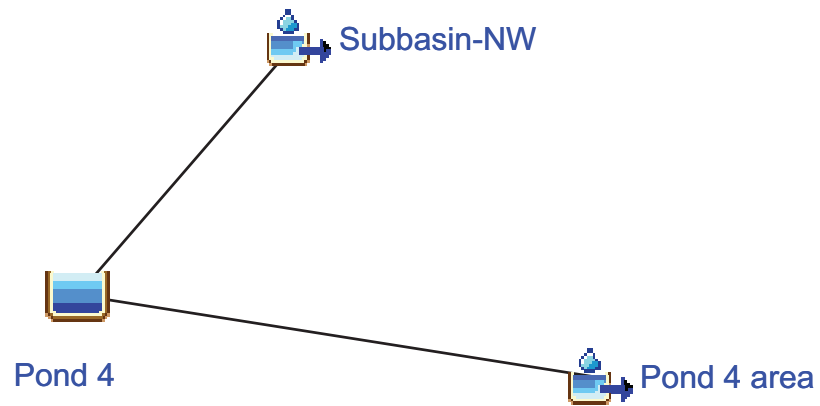


HEC-HMS

Project : Post construction pond #4

Basin Model : Substation

Jul 15 08:26:36 CDT 2014



Project: Post construction pond #4 Simulation Run: Substation area

Start of Run: 14May2014, 10:00 Basin Model: Substation
End of Run: 15May2014, 10:01 Meteorologic Model: 25yr
Compute Time: 15Jul2014, 17:56:49 Control Specifications: 24hr

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Subbasin-NW	0.0294	137.2	14May2014, 22:07	12.8
Pond 4 area	0.0139	111.4	14May2014, 21:53	6.4
Pond 4	0.0433	36.2	14May2014, 22:36	17.5

Project: Post construction pond #4
Simulation Run: Substation area Reservoir: Pond 4

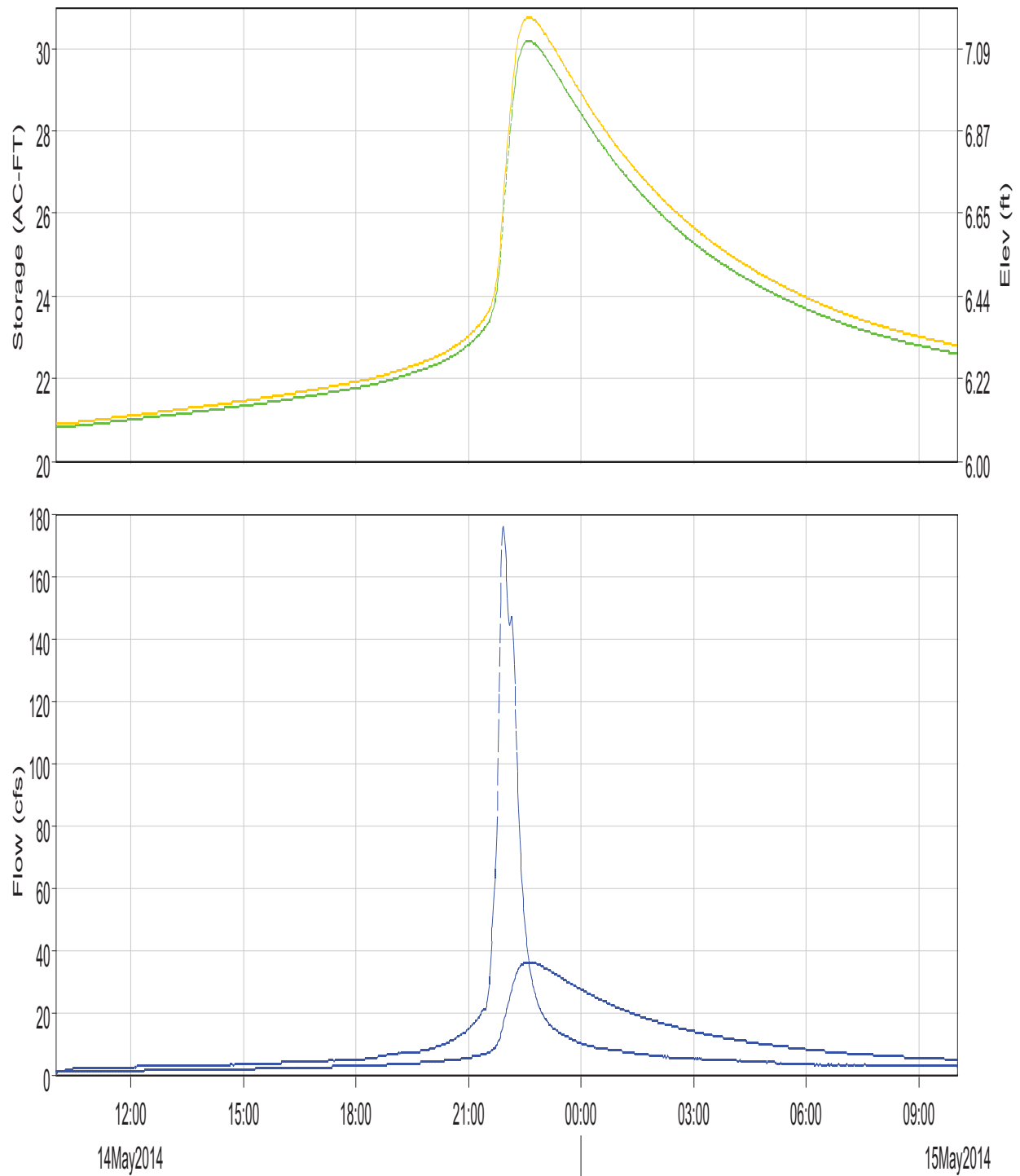
Start of Run:	14May2014, 10:00	Basin Model:	Substation
End of Run:	15May2014, 10:01	Meteorologic Model:	25yr
Compute Time:	15Jul2014, 17:56:49	Control Specifications:	24hr

Volume Units: AC-FT

Computed Results

Peak Inflow :	176.2 (CFS)	Date/Time of Peak Inflow :	14May2014, 21:55
Peak Outflow :	36.2 (CFS)	Date/Time of Peak Outflow :	14May2014, 22:36
Total Inflow :	19.3 (AC-FT)	Peak Storage :	30.2 (AC-FT)
Total Outflow :	17.5 (AC-FT)	Peak Elevation :	7.2 (FT)

Reservoir "Pond 4" Results for Run "Substation area"



--- Run:Substation area Element:POND 4 Result:Storage

--- Run:Substation area Element:POND 4 Result:Pool Elevation

— Run:Substation area Element:POND 4 Result:Outflow

--- Run:Substation area Element:POND 4 Result:Combined Flow

Stormwater detention pond #4 discharge system design

Stormwater detention pond #4 is wet detention pond
The contributing area for detention pond #4 A = 19.2 acres

- 1 Calculate required treatment volume as 1" of runoff of contributing area
 $V_t = A \times (1\text{in}) \times (1\text{ft}/12\text{in})$
 $V_t = (19.2\text{ac}) \times (1\text{in}) \times (1\text{ft}/12\text{in}) = 1.59\text{ac-ft}$
- 2 Calculate permanent wet pool volume
 $V_r = (A) (C) (P) (R) (1\text{ft}/12\text{in})$
 $V_r = (19.2\text{ ac}) \times (0.85) \times (31.04\text{in}/122\text{day}) \times (14\text{day}) \times (1/12) = 4.84\text{ac-ft}$
The min. treatment volume of 0.667 inch of runoff of contributing area
 $V_{\min} = (19.2\text{ac}) (0.667) (1/12) = 1.07\text{ac-ft}$
 $V_r > V_{\min}$
Use treatment volume $V = 4.84\text{ ac-ft}$
So, the total wet detention system design pool volume
 $V = 1.59\text{ac-ft} + 4.84\text{ac-ft} = 6.43\text{ ac-ft}$
- 3 Calculate min. wet pool area
Based on 0.5" of runoff
 $V = (19.2\text{ac}) \times (0.5\text{in}) \times (1\text{ft}/12\text{in}) = 0.8\text{ac-ft}$
Max head on V-notch is 10"
 $A_s = (0.8\text{ ac-ft}) / (10") (1/12) = 0.96\text{ ac}$
Based on design pool volume $V = 6.43\text{ac-ft}$ and max pond depth 2.0 ft (based on existing surface elevation)
 $6.43\text{ac-ft} = 2\text{ ft } A_s$
Min wet pool area $A_s = 3.215\text{ac}$
- 4 Sizing discharge V-notch to discharge 0.5" of detention runoff from the contributing area in 24 hours with 10" maximum head
First 0.5" runoff $V = 0.8\text{ ac-ft}$
24hr treatment
 $Q = 0.4\text{ cfs}$
From Flowmaster

Design discharge	$Q =$	0.4	cfs
Head water	$H =$	0.667	ft
Coefficient	$C =$	0.600	
V-notch angle		46.43	degree

Design V-notch 46 degree
- 5 Sizing discharge weir. Two discharge structure are used
From pre-construction peak flow $Q = 90.8\text{ cfs}$
Design each weir peak $Q = 30\text{ cfs}$

Design discharge	$Q =$	30	cfs
Head water	$H =$	1	ft
Coefficient	$C =$	3.100	
Contraction		1.000	

Use FlowMaster
Maximum Crest length $L = 9.780\text{ ft}$
Design weir $L = 9.5\text{ ft}$

Worksheet for pond 4 V-Notch Weir

Project Description

Solve For Notch Angle

Input Data

Discharge	0.40	ft ³ /s
Headwater Elevation	0.67	ft
Crest Elevation	0.00	ft
Tailwater Elevation	0.00	ft
Coefficient of Discharge	0.60	

Results

Angle	46.43	degrees
Headwater Height Above Crest	0.67	ft
Tailwater Height Above Crest	0.00	ft
Flow Area	0.19	ft ²
Velocity	2.10	ft/s
Wetted Perimeter	1.45	ft
Top Width	0.57	ft

Worksheet for pond 4 Rectangular Weir - 1

Project Description

Solve For Crest Length

Input Data

Discharge	30.00	ft ³ /s
Headwater Elevation	1.00	ft
Crest Elevation	0.00	ft
Tailwater Elevation	0.00	ft
Weir Coefficient	3.10	US
Number Of Contractions	1	

Results

Crest Length	9.78	ft
Headwater Height Above Crest	1.00	ft
Tailwater Height Above Crest	0.00	ft
Flow Area	9.78	ft ²
Velocity	3.07	ft/s
Wetted Perimeter	11.78	ft
Top Width	9.78	ft

STORMWATER DETENTION POND #5
CALCULATIONS

Pre-construction peak flow -stormwater detention pond #5 area

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Pond 5 area
Method	SCS Curve No
Area (MI2)	0.02343
Initial Loss (IN)	2
% Impervious	0
SCS Curve No.	50
SCS Lag (MIN)	6
Baseflow	No

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
---------------	----

Result

25 year, 24 hour peak Storm runoff Q 57.6 cfs



HEC-HMS

Project : Duke Preconstruction Flow

Basin Model : Pond #5

Jul 14 16:06:18 CDT 2014

Gas yard area



Project: Duke Preconstruction Flow Simulation Run: Gas yard area

Start of Run: 10May2014, 10:10 Basin Model: Pond #5
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 14Jul2014, 16:08:35 Control Specifications: 24 hr

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Gas yard area	0.02343	57.6	10May2014, 22:10	3.4

Stormwater detention pond #5 sizing with 25yr, 24hr storm

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Substation South Eest	Gas Yard	Pond
Method	SCS Curve No		
Area (MI ²)	0.00781	0.0039	0.00309
Initial Loss (IN)	0.5	0.5	0.04
% Impervious	80	80	100
SCS Curve No.	80	80	98
SCS Lag (MIN)	9	9	1
Baseflow	No	No	No

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
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Pre-construction Peak discharge

Pond 5 area Q = 57.6 cfs Design discharge Qout = 30 cfs

HEC-HMS Results

25 year, 24 hour Storm runoff pond size need 6.4 ac-ft
Two discharge structures Qout = 15cfs each

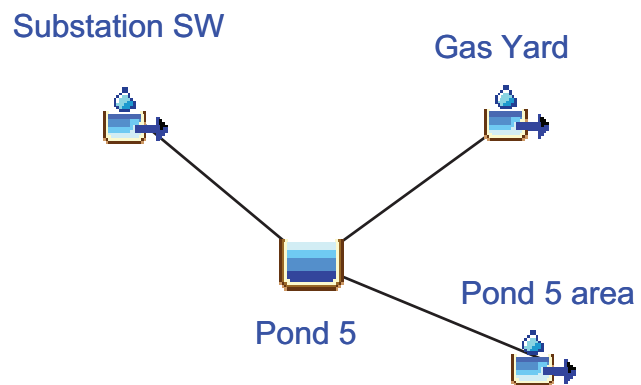


HEC-HMS

Project : Post construction Pond #5

Basin Model : Gas yard

Jul 14 18:10:59 CDT 2014



Project: Post construction Pond #5 Simulation Run: Gas yard area

Start of Run: 10May2014, 10:10 Basin Model: Gas yard
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 15Jul2014, 18:05:51 Control Specifications: 24 hour

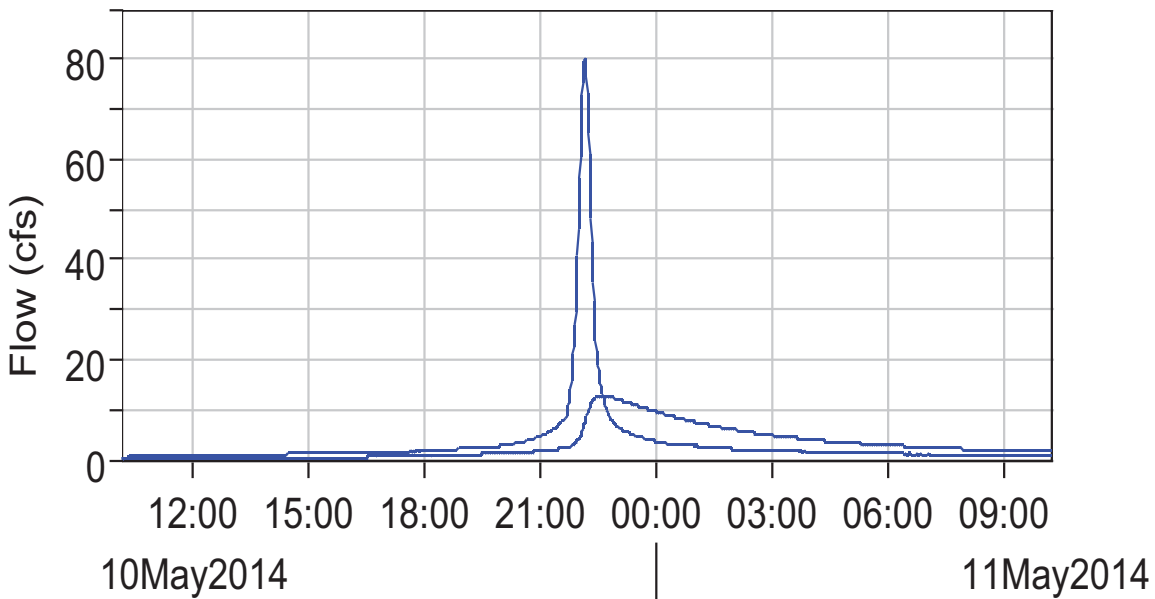
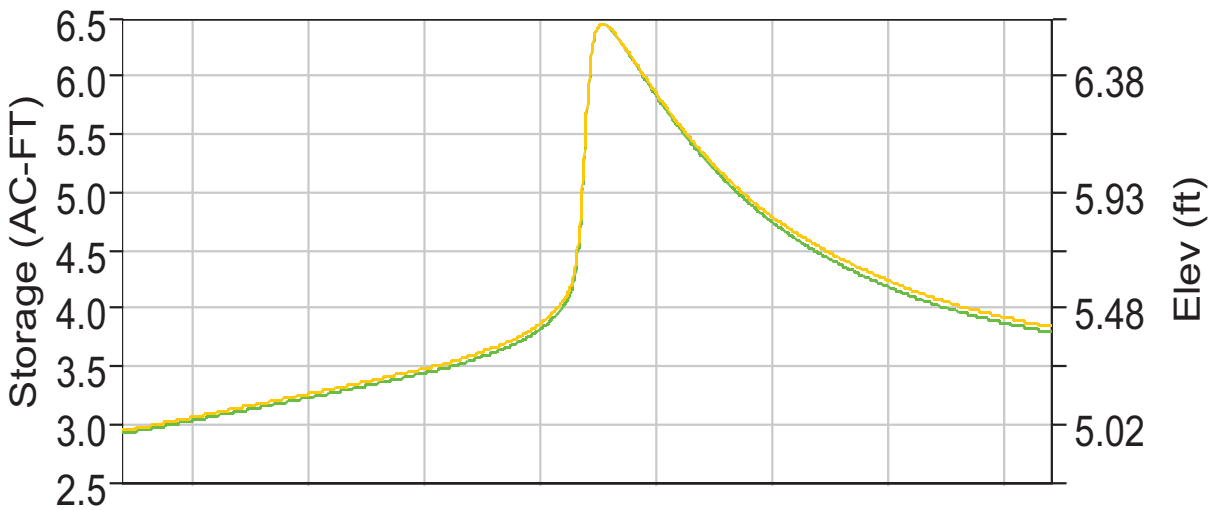
Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Substation SW	0.007812	45.7	10May2014, 22:12	3.4
Gas Yard	0.003900	23.5	10May2014, 22:12	1.8
Pond 5 area	0.003090	24.8	10May2014, 22:03	1.4
Pond 5	0.014802	12.7	10May2014, 22:37	5.8

Project: Post construction Pond #5
Simulation Run: Gas yard area Reservoir: Pond 5
Start of Run: 10May2014, 10:10 Basin Model: Gas yard
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 15Jul2014, 18:05:51 Control Specifications: 24 hour
Volume Units: AC-FT

Computed Results

Peak Inflow :	80.4 (CFS)	Date/Time of Peak Inflow :	10May2014, 22:09
Peak Outflow :	12.7 (CFS)	Date/Time of Peak Outflow :	10May2014, 22:37
Total Inflow :	6.7 (AC-FT)	Peak Storage :	6.4 (AC-FT)
Total Outflow :	5.8 (AC-FT)	Peak Elevation :	6.6 (FT)

Reservoir "Pond 5" Results for Run "Gas yard area"



- Run:Gas yard area Element:POND 5 Result:Storage
- .- Run:Gas yard area Element:POND 5 Result:Pool Elevation
- Run:Gas yard area Element:POND 5 Result:Outflow
- - Run:Gas yard area Element:POND 5 Result:Combined Flow

Stormwater detention pond #5 discharge system design

Stormwater detention pond #5 is wet detention pond
The contributing area for detention pond #5 $A = 7.5$ acres

- 1 Calculate required treatment volume as 1" of runoff of contributing area

$$V_t = A \times (1\text{in}) \times (1\text{ft}/12\text{in})$$

$$V_t = (7.5\text{ac}) \times (1\text{in}) \times (1\text{ft}/12\text{in}) = 0.625\text{ac-ft}$$

- 2 Calculate permanent wet pool volume

$$V_r = (A) (C) (P) (R) (1\text{ft}/12\text{in})$$

$$V_r = (7.5\text{ ac}) \times (0.85) \times (31.04\text{in}/122\text{day}) \times (14\text{day}) \times (1/12) = 1.89\text{ac-ft}$$

The min treatment volume of 0.667 inch of runoff of contributing area

$$V_{\min} = (7.5\text{ac}) (0.667) (1/12) = 0.417\text{ac-ft}$$

$$V_r > V_{\min}$$

Use treatment volume $V = 1.89$ ac-ft

So, the total wet detention system design pool volume

$$V = 0.625\text{ac-ft} + 1.89\text{ac-ft} = 2.515\text{ ac-ft}$$

- 3 Calculate min. wet pool area

Based on 0.5" of runoff

$$V = (7.5\text{ac}) \times (0.5\text{in}) \times (1\text{ft}/12\text{in}) = 0.3125\text{ac-ft}$$

Max head on V-notch is 10"

$$A_s = (0.3125\text{ ac-ft}) / (10") \times (1/12) = 0.375\text{ ac}$$

Based on design pool volume $V = 2.515\text{ac-ft}$ and max pond depth 2ft based on existing surface elevation)

$$2.515\text{ac-ft} = 2.0\text{ ft } A_s$$

$$\text{Min wet pool area } A_s = 1.2575\text{ ac}$$

- 4 Sizing discharge V-notch to discharge 0.5" of detention runoff from the contributing area in 24 hours with 10" maximum head

$$\text{First 0.5" runoff } V = 0.3125\text{ ac-ft}$$

24hr treatment

$$Q = 0.1575\text{ cfs, Use 8" head}$$

From Flowmaster

Design discharge	Q=	0.1575	cfs
Head water	H=	0.5	ft
Coefficient	C=	0.600	
V-notch angle		38.280	degree
Design V-notch 38 degree			

- 5 Sizing discharge weir. Two discharge structure are used

From pre-construction peak flow $Q = 80.6$ cfs

Design each weir peak $Q = 15$ cfs

Design discharge	Q=	15	cfs
Head water	H=	0.833	ft
Coefficient	C=	3.100	
Contraction		1.000	
Use FlowMaster			
Maximum Crest length	L=	6.480	ft
Design weir $L = 6.48$ ft			

Worksheet for Pond 5 V-Notch Weir

Project Description

Solve For Notch Angle

Input Data

Discharge	0.16	ft ³ /s
Headwater Elevation	0.50	ft
Crest Elevation	0.00	ft
Tailwater Elevation	0.00	ft
Coefficient of Discharge	0.60	

Results

Angle	38.28	degrees
Headwater Height Above Crest	0.50	ft
Tailwater Height Above Crest	0.00	ft
Flow Area	0.09	ft ²
Velocity	1.82	ft/s
Wetted Perimeter	1.06	ft
Top Width	0.35	ft

Worksheet for pond 5 Rectangular Weir

Project Description

Solve For Crest Length

Input Data

Discharge	15.00	ft ³ /s
Headwater Elevation	0.83	ft
Crest Elevation	0.00	ft
Tailwater Elevation	0.00	ft
Weir Coefficient	3.10	US
Number Of Contractions	1	

Results

Crest Length	6.45	ft
Headwater Height Above Crest	0.83	ft
Tailwater Height Above Crest	0.00	ft
Flow Area	5.37	ft ²
Velocity	2.79	ft/s
Wetted Perimeter	8.11	ft
Top Width	6.45	ft

APPENDIX C

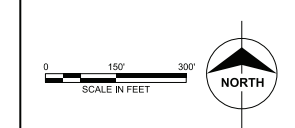
PRE AND POST-CONSTRUCTION SITE DRAINAGE PLANS

1111

NAME	DISCIPLINE	LICENSE_NO
ALLEN, JAMES	MECHANICAL	12345
BROWN, SARAH	ELECTRICAL	67890
CHEN, DAVID	PLUMBING	11111
DAVIS, LUCAS	PAINTING	22222
EVANS, EMILY	LANDSCAPE	33333
FERREIRA, CARLOS	ROOFING	44444
GARCIA, ANA	WELDING	55555
HARRIS, MICHAEL	CONCRETE	66666
HILL, JESSICA	GLASS	77777
JACKSON, ROBERT	IRONWORK	88888
KIM, MINJUN	WATER	99999
KOON, JENNIFER	SEWER	00000
LEE, JASON	MECHANICAL	10101
LOPEZ, MARIA	ELECTRICAL	20202
MARTIN, ALEXANDER	PLUMBING	30303
MURPHY, KYLE	PAINTING	40404
NEEDHAM, LUCAS	LANDSCAPE	50505
OLIVER, EMILY	ROOFING	60606
PEREZ, CARLOS	WELDING	70707
RODRIGUEZ, ANA	CONCRETE	80808
SCHMIDT, MICHAEL	GLASS	90909
SMITH, JESSICA	IRONWORK	01010
WALKER, ROBERT	WATER	10101
WILSON, JENNIFER	SEWER	20202
YOUNG, JASON	MECHANICAL	30303
ZIMMERMAN, MARIA	ELECTRICAL	40404



A map of the study area showing the location of the study site relative to the city of St. Louis. The map includes a scale bar (0 to 300 feet) and a north arrow.



**PRELIMINARY - NOT
FOR CONSTRUCTION
SUBJECT TO CHANGE**

APPENDIX D

PRE AND POST-CONSTRUCTION WHOLE SITE PEAK FLOW

Pre-construction Site Peak Flow

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input Whole Site

Method	SCS Curve No
Area (MI ²)	0.2765
Initial Loss (IN)	2
% Impervious	0
SCS Curve No.	50
SCS Lag (MIN)	19
Baseflow	No

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
---------------	----

HEC-HMS Results

25 year, 24 hour peak flow Q 425.8 cfs

Pre construction whole site peak flow does not reflect actual site condition.



HEC-HMS

Project : Duke Site

Basin Model : Basin 1

Jul 09 08:49:40 CDT 2014

pre construction site



Project: Duke Site Simulation Run: Run 1

Start of Run: 10May2014, 10:10

Basin Model:

Basin 1

End of Run: 11May2014, 10:11

Meteorologic Model: 25 year

Compute Time: DATA CHANGED, RECOMPUTED Control Specifications: 24 hour

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
pre construction site	0.2765	425.8	10May2014, 22:21	40.2

Project: Duke Site
Simulation Run: Run 1 Subbasin: pre construction site

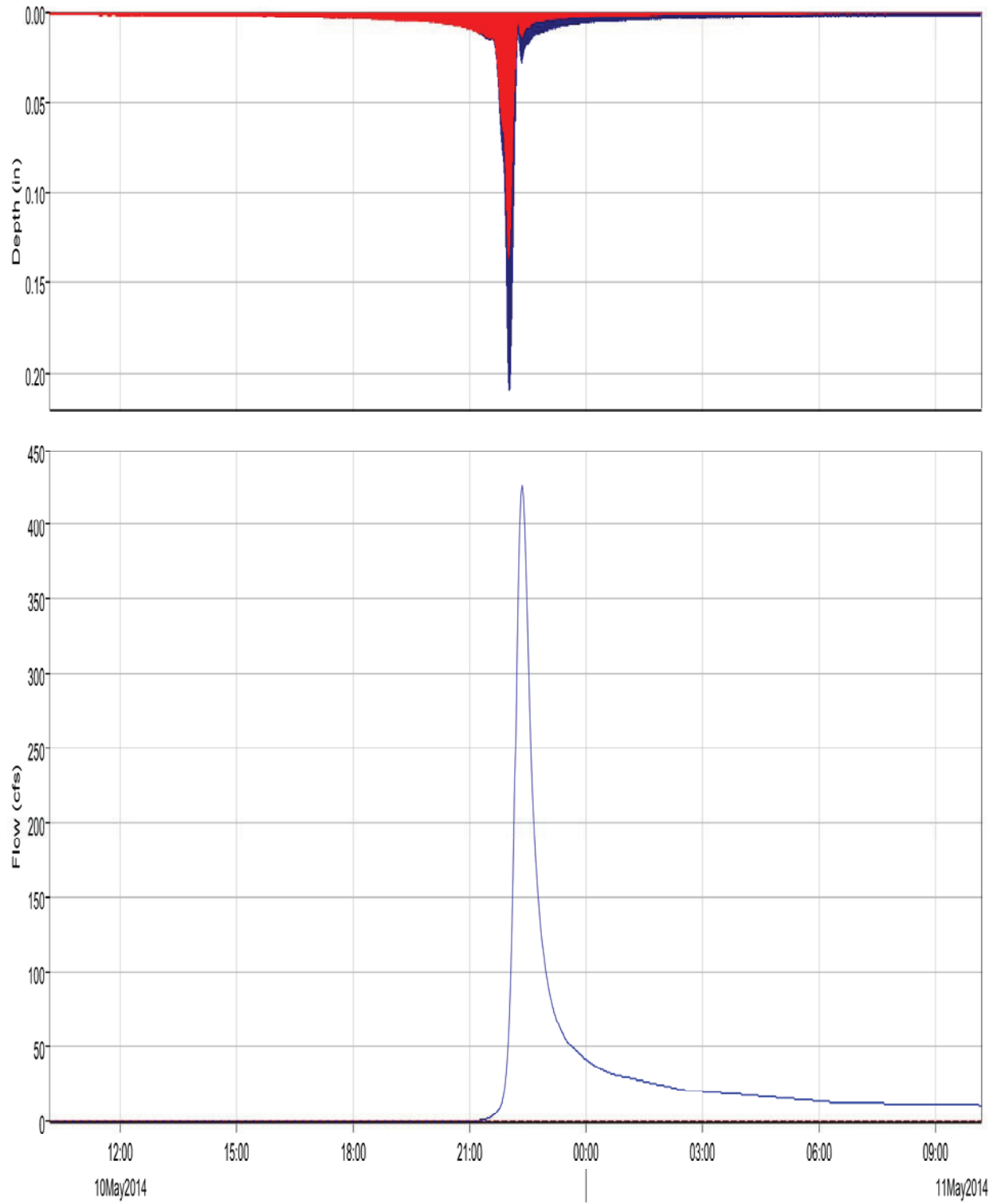
Start of Run:	10May2014, 10:10	Basin Model:	Basin 1
End of Run:	11May2014, 10:11	Meteorologic Model:	25 year
Compute Time:	08Jul2014, 16:03:58	Control Specifications:	24 hour

Volume Units: AC-FT

Computed Results

Peak Discharge :	425.8 (CFS)	Date/Time of Peak Discharge :	10May2014, 22:21
Total Precipitation :	128.3 (AC-FT)	Total Direct Runoff :	40.2 (AC-FT)
Total Loss :	87.8 (AC-FT)	Total Baseflow :	0.0 (AC-FT)
Total Excess :	40.5 (AC-FT)	Discharge :	40.2 (AC-FT)

Subbasin "pre construction site" Results for Run "Run 1"



Post-construction Site Peak Flow

HEC-HMS Basin Model Input

HEC-HMS Subbasin Input	Impervious Area	Crushed Rock	Seeding		
Method	SCS Curve No				
Area (MI2)	0.06093	0.1406	0.07656		
Initial Loss (IN)	0.04	0.5	2		
% Impervious	100	80	0		
SCS Curve No.	98	80	50	75.7	(weighted CN)
SCS Lag (MIN)	9	10	16		
Baseflow	No	No	No		

HEC-HMS Meteorologic Model Input

Method	SCS Hypothetical Storm
Storm Distribution	Type II
Storm Depth (IN)	8.7

HEC-HMS Control Specification Input

Run Time (HR)	24
---------------	----

HEC-HMS Results

25 year, 24 hour peak flow Q 1244.7 cfs

Post construction whole site peak flow does not reflect actual site condition and each pond drainage design.

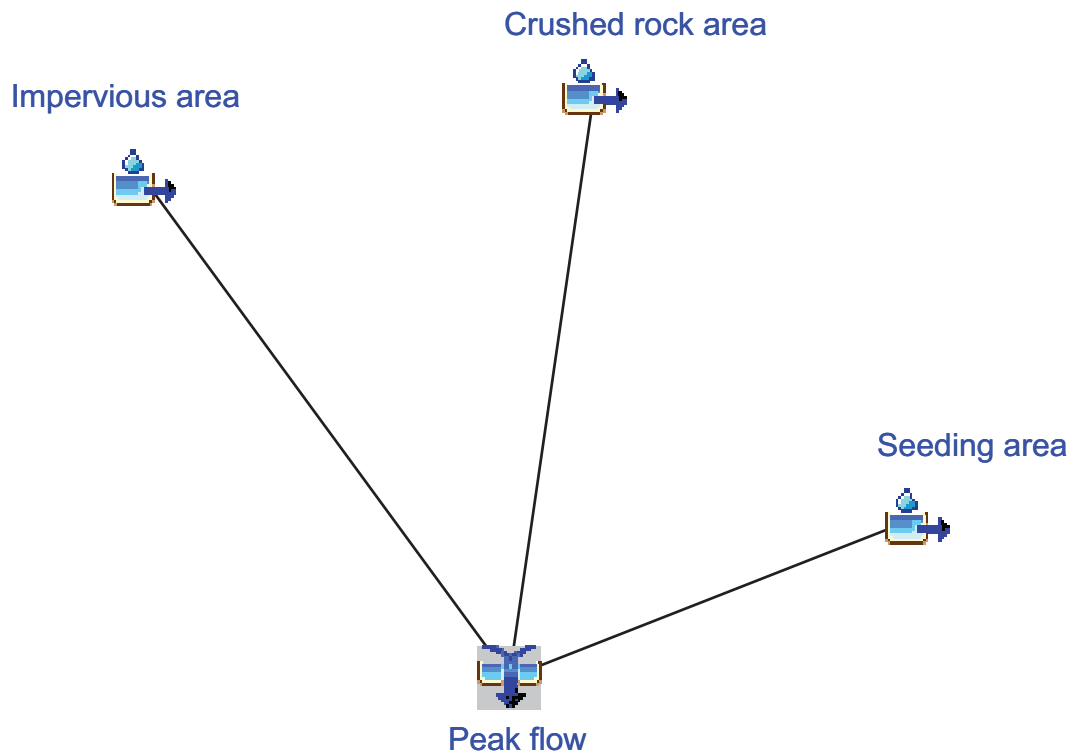


HEC-HMS

Project : Duke Site

Basin Model : Post construction

Jul 15 18:43:26 CDT 2014



Project: Duke Site Simulation Run: Post construction

Start of Run: 10May2014, 10:10 Basin Model: Post construction

End of Run: 11May2014, 10:11 Meteorologic Model: 25 year

Compute Time: 15Jul2014, 18:32:45 Control Specifications: 24 hour

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Crushed rock area	0.14060	790.2	10May2014, 22:13	61.5
Seeding area	0.07656	120.2	10May2014, 22:20	10.9
Impervious area	0.06093	367.6	10May2014, 22:12	28.2
Peak flow	0.27809	1244.7	10May2014, 22:13	100.6

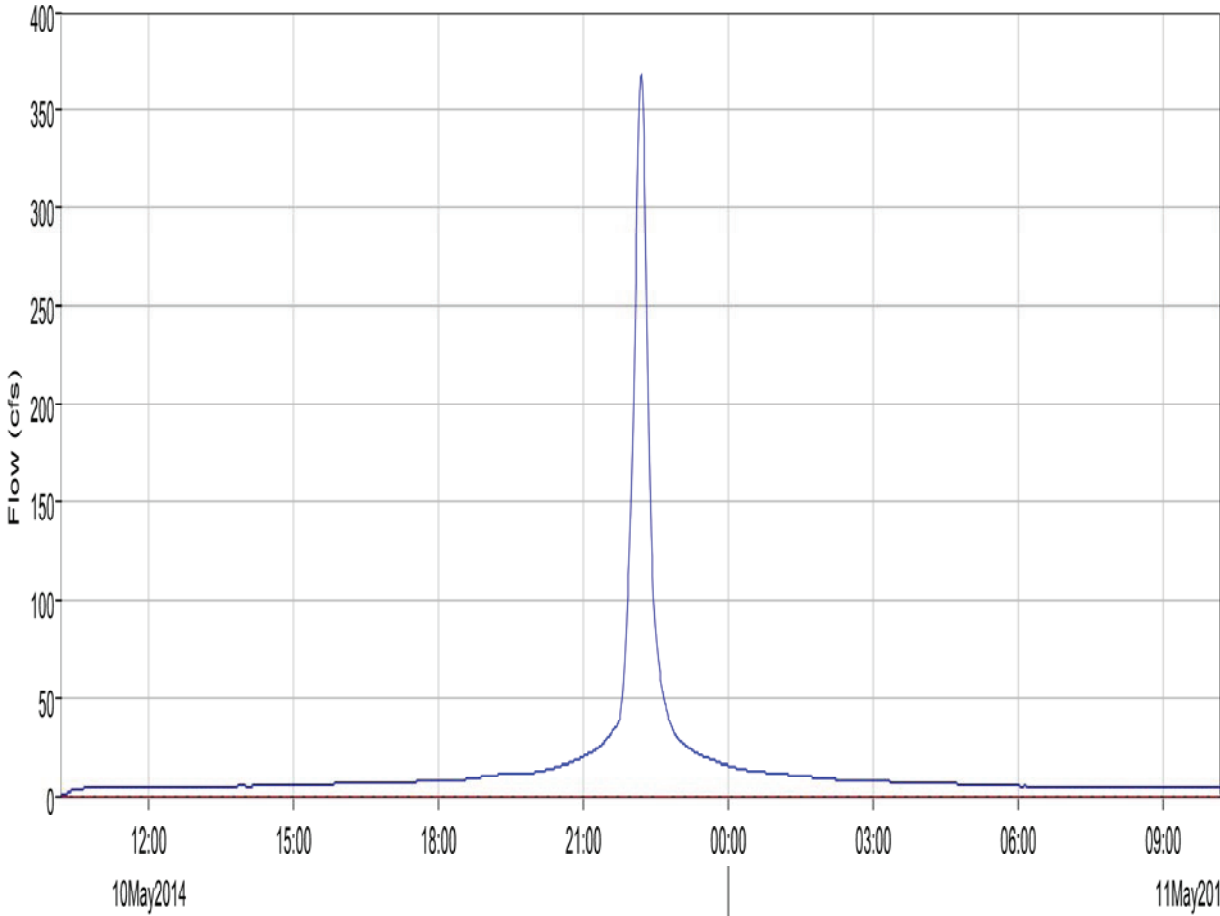
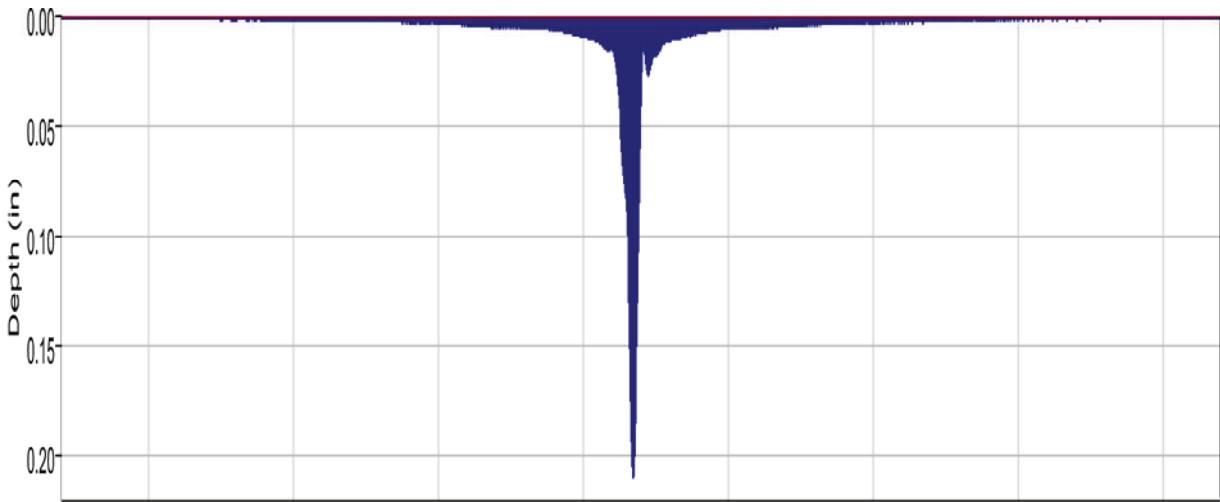
Project: Duke Site
Simulation Run: Post construction Subbasin: Impervious area
Start of Run: 10May2014, 10:10 Basin Model: Post construction
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 15Jul2014, 18:32:45 Control Specifications: 24 hour

Volume Units: AC-FT

Computed Results

Peak Discharge :	367.6 (CFS)	Date/Time of Peak Discharge :	10May2014, 22:12
Total Precipitation :	28.3 (AC-FT)	Total Direct Runoff :	28.2 (AC-FT)
Total Loss :	0.0 (AC-FT)	Total Baseflow :	0.0 (AC-FT)
Total Excess :	28.3 (AC-FT)	Discharge :	28.2 (AC-FT)

Subbasin "Impervious area" Results for Run "Run 3"



- Run:Run 3 Element:IMPERVIOUS AREA Result:Precipitation
- Run:Run 3 Element:IMPERVIOUS AREA Result:Precipitation Loss
- Run:Run 3 Element:IMPERVIOUS AREA Result:Outflow
- Run:Run 3 Element:IMPERVIOUS AREA Result:Baseflow

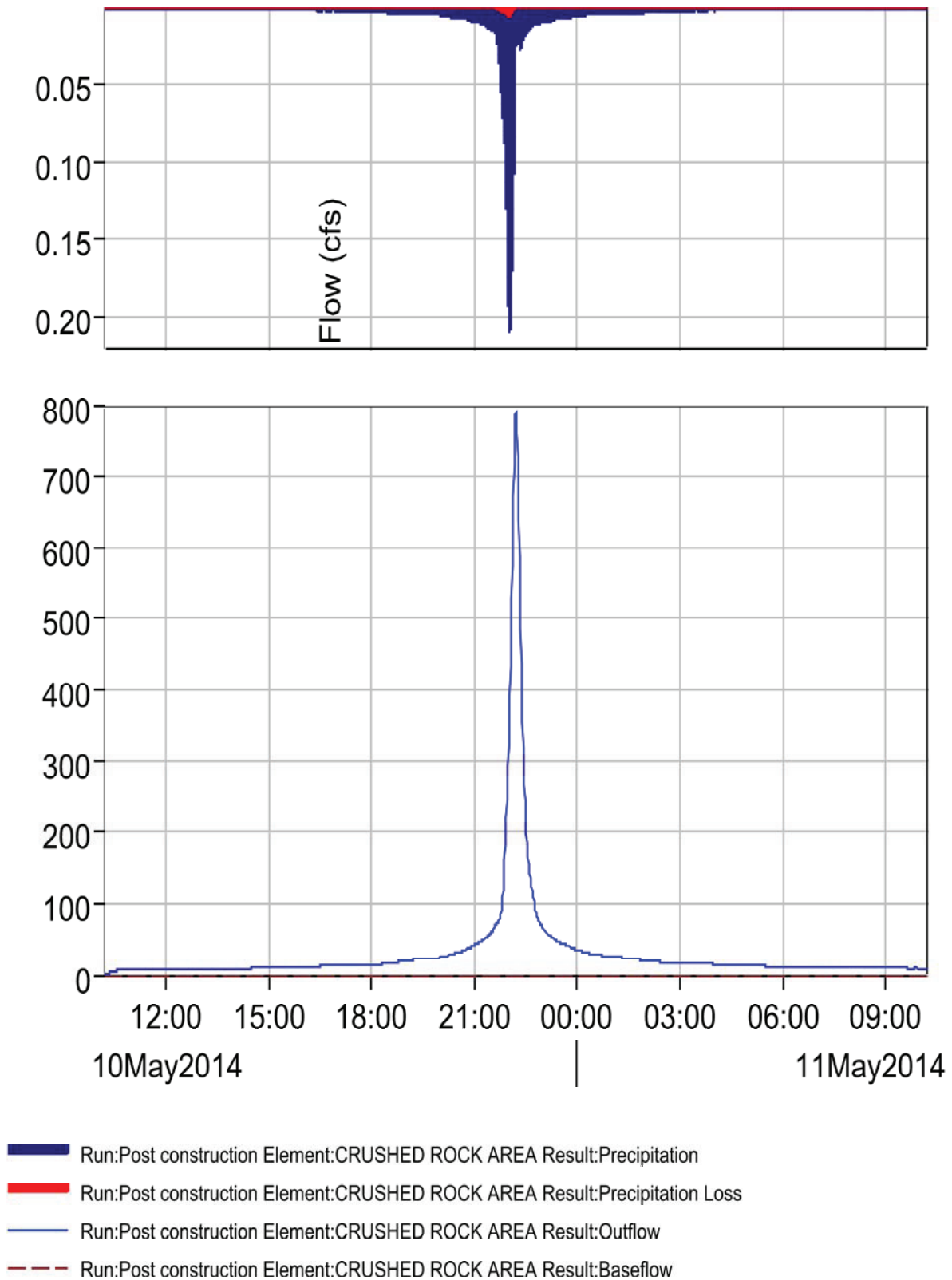
Project: Duke Site
Simulation Run: Post construction Subbasin: Crushed rock area
Start of Run: 10May2014, 10:10 Basin Model: Post construction
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 15Jul2014, 18:32:45 Control Specifications: 24 hour

Volume Units: AC-FT

Computed Results

Peak Discharge :	790.2 (CFS)	Date/Time of Peak Discharge :	10May2014, 22:13
Total Precipitation :	65.2 (AC-FT)	Total Direct Runoff :	61.5 (AC-FT)
Total Loss :	3.6 (AC-FT)	Total Baseflow :	0.0 (AC-FT)
Total Excess :	61.6 (AC-FT)	Discharge :	61.5 (AC-FT)

Subbasin "Crushed rock area" Results for Run "Post construction"



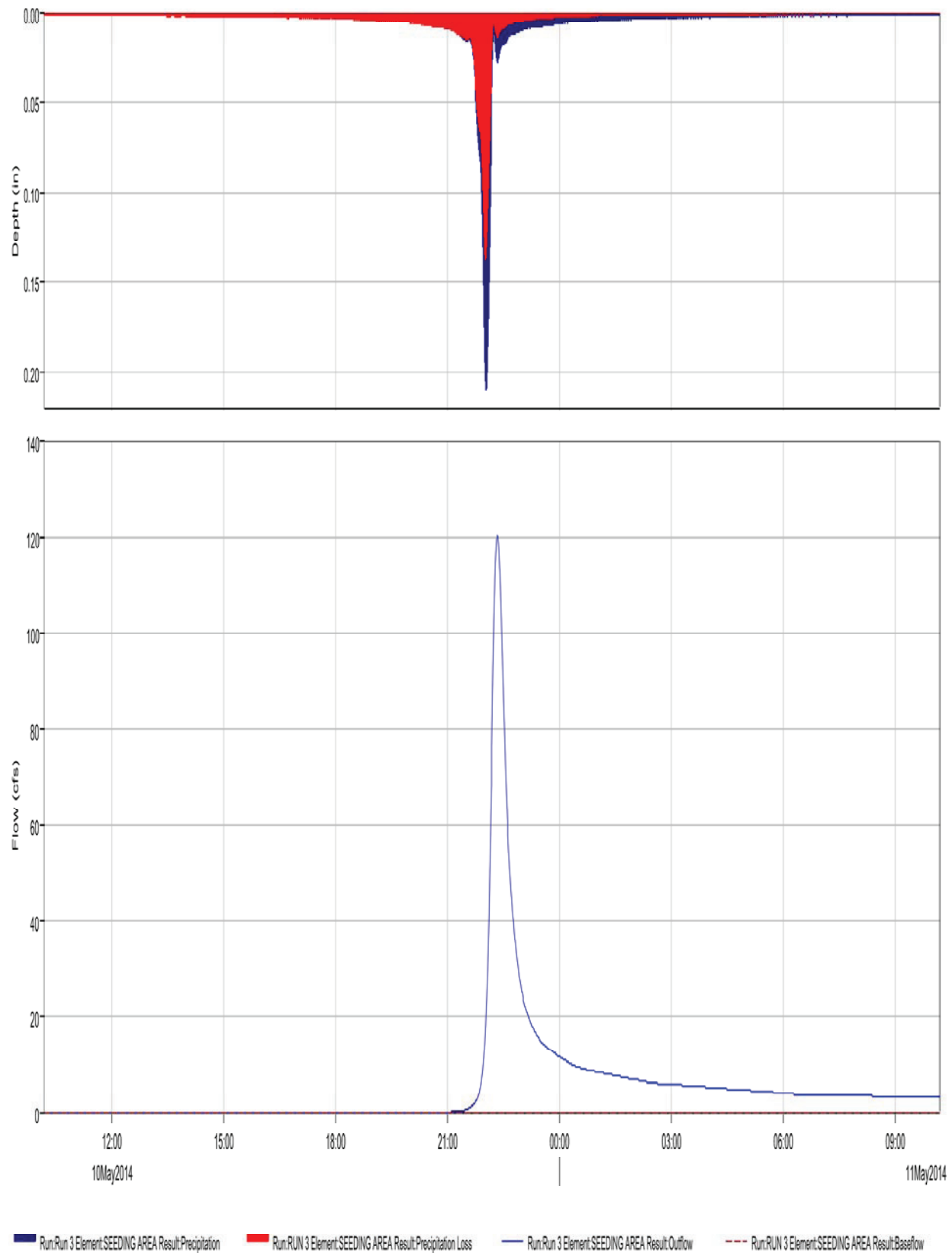
Project: Duke Site
Simulation Run: Post construction Subbasin: Seeding area
Start of Run: 10May2014, 10:10 Basin Model: Post construction
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 15Jul2014, 18:32:45 Control Specifications: 24 hour

Volume Units: AC-FT

Computed Results

Peak Discharge :	120.2 (CFS)	Date/Time of Peak Discharge :	10May2014, 22:20
Total Precipitation :	35.5 (AC-FT)	Total Direct Runoff :	10.9 (AC-FT)
Total Loss :	24.5 (AC-FT)	Total Baseflow :	0.0 (AC-FT)
Total Excess :	11.0 (AC-FT)	Discharge :	10.9 (AC-FT)

Subbasin "Seeding area" Results for Run "Run 3"

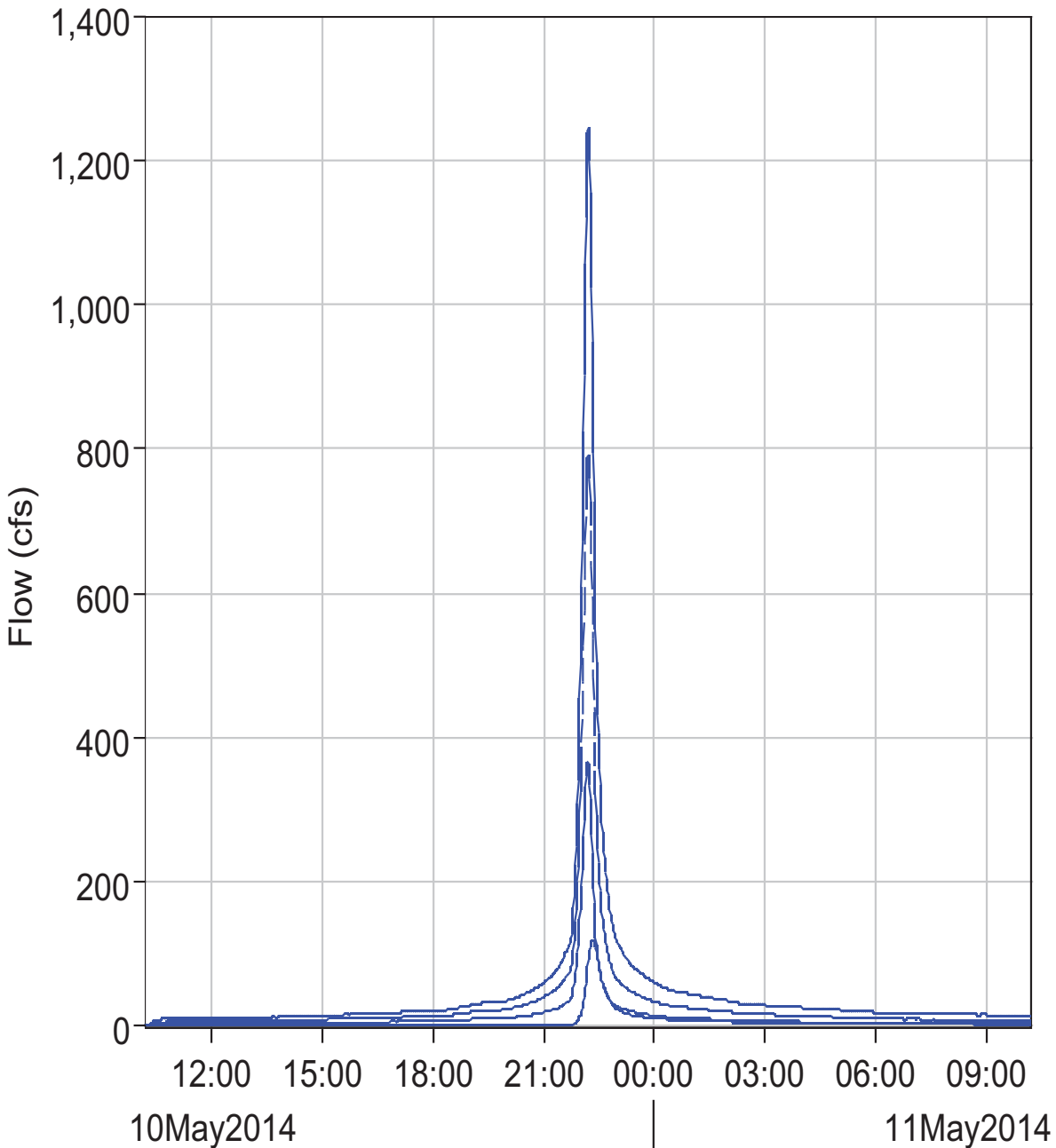


Project: Duke Site
Simulation Run: Post construction Junction: Peak flow
Start of Run: 10May2014, 10:10 Basin Model: Post construction
End of Run: 11May2014, 10:11 Meteorologic Model: 25 year
Compute Time: 15Jul2014, 18:32:45 Control Specifications: 24 hour
Volume Units: AC-FT

Computed Results

Peak Outflow :	1244.7 (CFS)	Date/Time of Peak Outflow :	10May2014, 22:13
Total Outflow :	100.6 (AC-FT)		

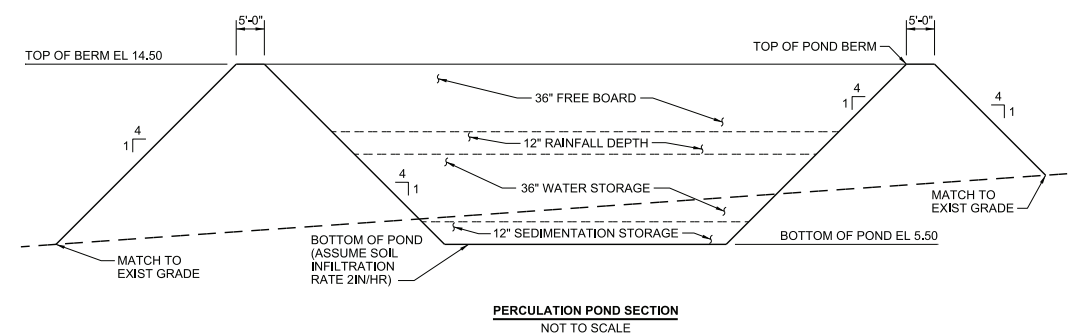
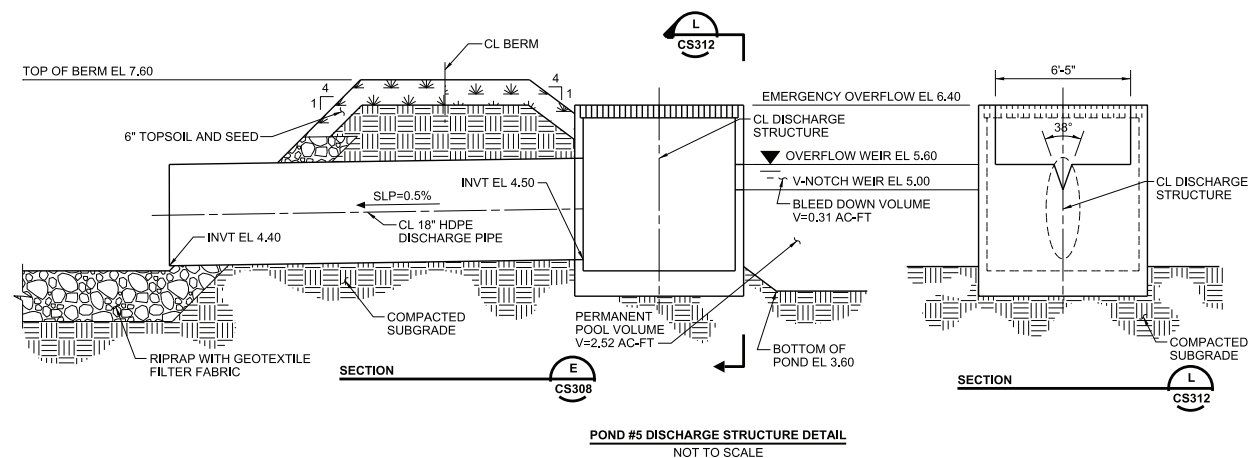
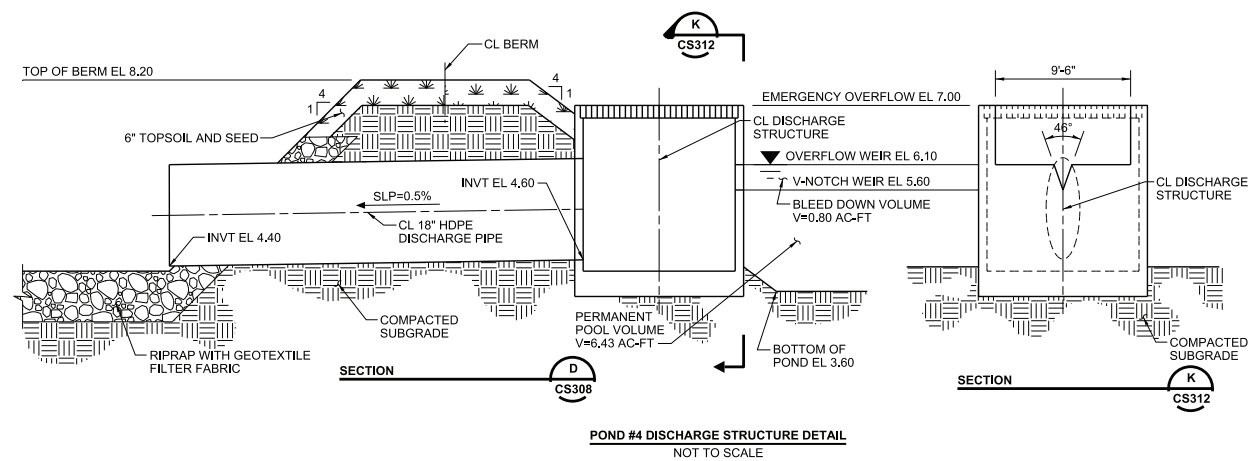
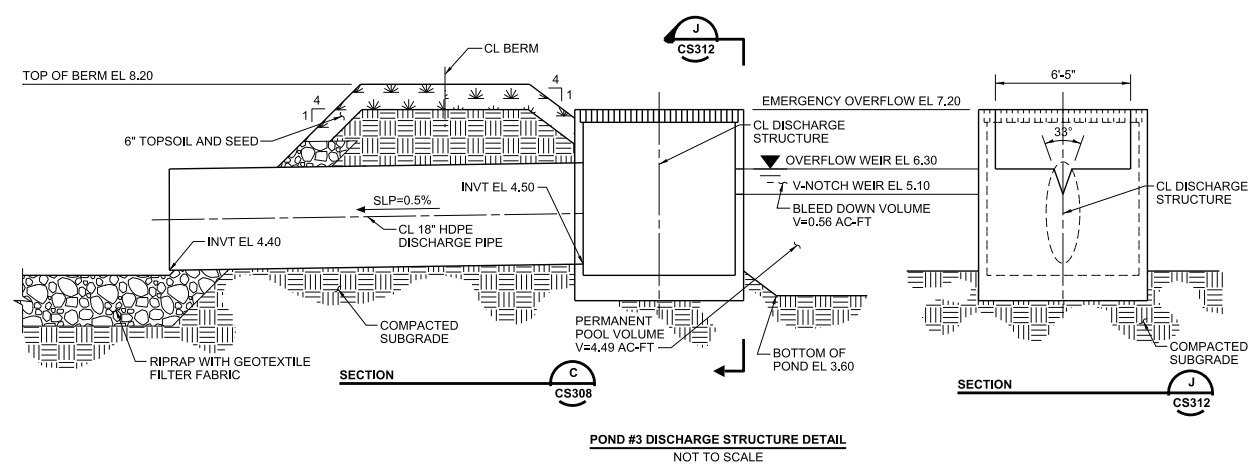
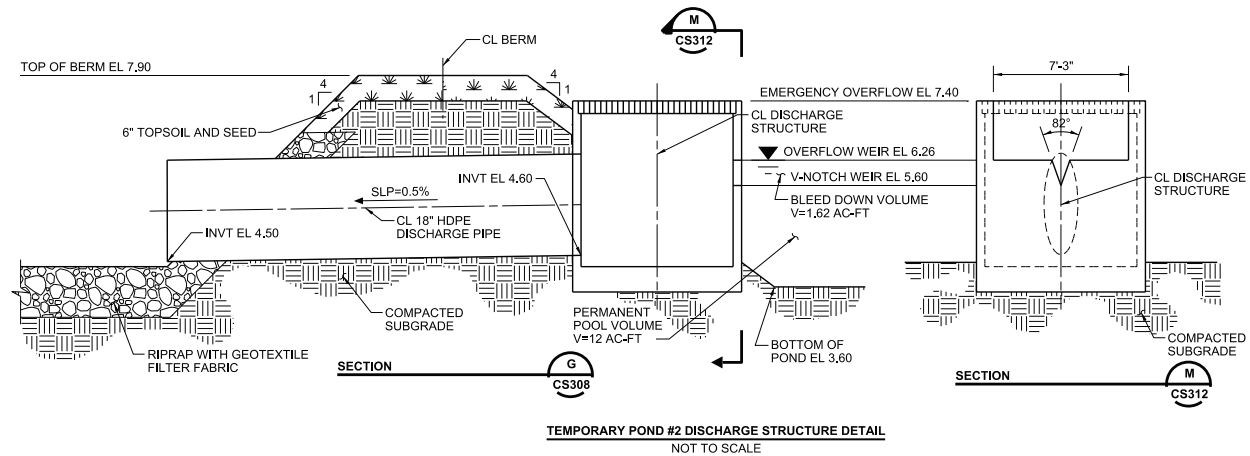
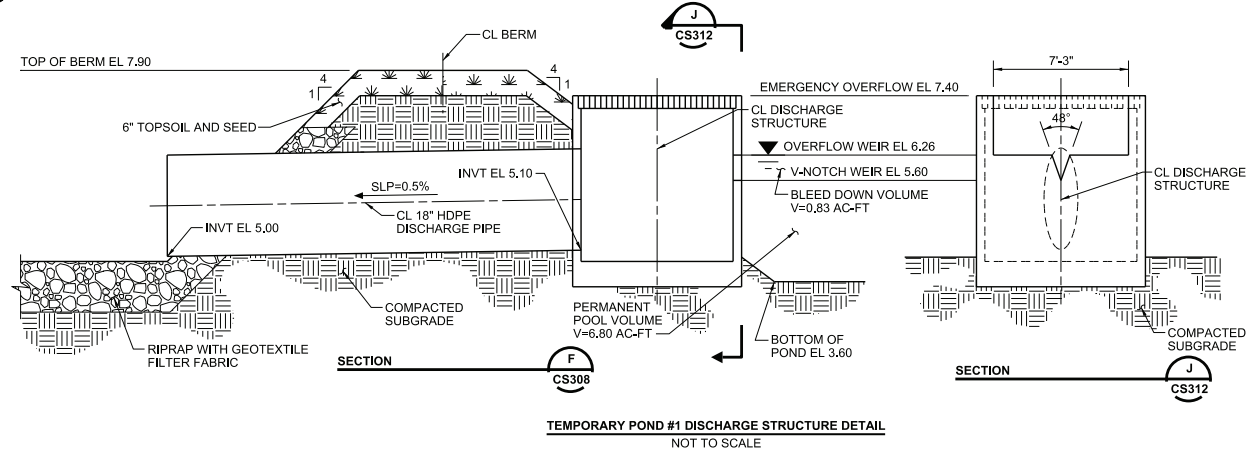
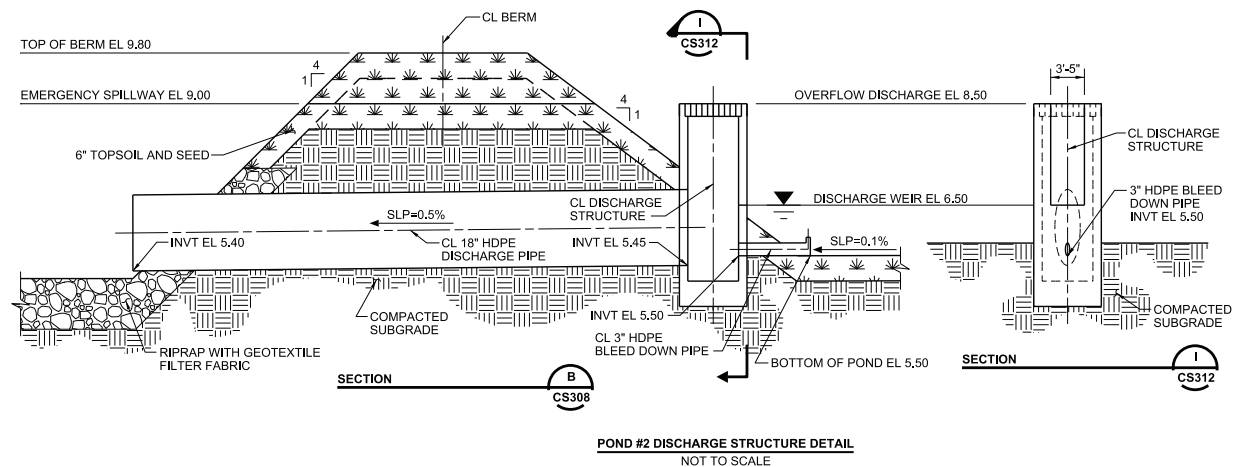
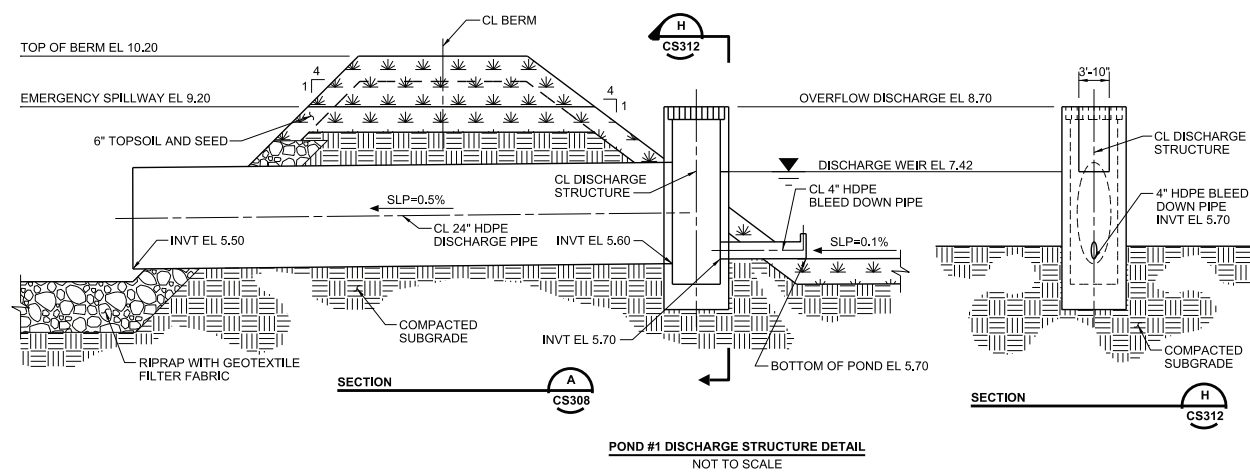
Junction "Peak flow" Results for Run "Post construction"



- Run:Post construction Element:PEAK FLOW Result:Outflow
- - - Run:Post construction Element:CRUSHED ROCK AREA Result:Outflow
- Run:Post construction Element:SEEDING AREA Result:Outflow
- · - · Run:Post construction Element:IMPERVIOUS AREA Result:Outflow

APPENDIX E

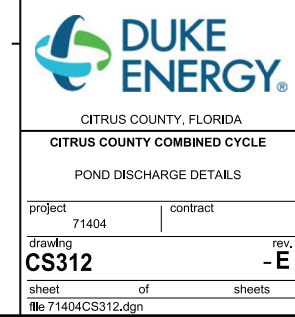
DRAWING CS312 OUTFALL STRUCTURE DETAILS



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[illegible]

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date MAY 7, 2014	detailed C. ALTES
designed R. OWENS	checked





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