

**ECOLOGICAL ASSESSMENT
OSCEOLA SUBSTATION TO CANE ISLAND
TAP TRANSMISSION LINE MAINTENANCE
OSCEOLA COUNTY, FLORIDA**

Prepared For:

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1.0 INTRODUCTION

The Orlando Utilities Commission (OUC) Osceola Substation to Cane Island Tap 230-kV transmission line is located in Osceola County, northwest of Kissimmee (Figures 1-1 and 1-2). Upgrades to the line required to meet the increased load from 1,000 to 1,250 amps, specifically cross-arm deterioration and pole replacements, were completed in June 2010. The transmission line structure access improvements requested herein (Table 1) are required to support utility maintenance/service trucks and equipment to perform maintenance work in and around the structures.

An environmental assessment of the Osceola to Cane Island Tap transmission line right-of-way (ROW) was conducted in December 2007, October 2008, and May 2011 including jurisdictional wetland delineation, documentation of threatened, endangered, and species of special concern (listed species), and wetland functional assessment utilizing the Florida Department of Environmental Protection (FDEP) Uniform Mitigation Assessment Methodology (UMAM). Methodology and results are discussed below.

2.0 METHODOLOGY

2.1 Wetland Delineation

Jurisdictional wetland areas were identified in accordance with applicable federal and state wetland criteria as set forth by the U.S. Army Corps of Engineers (ACOE) and the FDEP. Specifically, ROW was examined for the presence of hydrophytic vegetation, hydric soils, and hydrological indicators, by which the landward extent of wetlands was marked in the field with sequentially-numbered flagging tape and delineated upon aerial photography. The flagged boundaries were subsequently surveyed by a licensed professional survey crew; the completed survey is attached (Appendix A).

2.2 Listed Species

The transmission line ROW was assessed for the presence of threatened, endangered and/or species of special concern (listed species) in December 2007 and October 2008 via pedestrian and vehicular surveys. The locations of any listed species observations were recorded on aerial photographs. Listed plant species are those plants that are listed by the U.S. Fish and Wildlife

Service (USFWS) or the Florida Department of Agriculture and Consumer Services (FDACS) as endangered, threatened, of special concern, or commercially exploited. Listed animal species are those animals that are listed as endangered, threatened, or of special concern federally by the USFWS or within the State of Florida by the Florida Fish and Wildlife Conservation Commission (FFWCC). Prior to field reconnaissance, county-specific lists of threatened and endangered species were obtained from the FNAI (Table 2). In addition, geographic information system (GIS) data were obtained from the Florida Natural Areas Inventory (FNAI), who maintains a database of known occurrences of listed species throughout the State of Florida. The FNAI database was queried and documented locations of listed species within the vicinity of the transmission line ROW identified.

2.3 Wetland Functional Assessment

Rather than an acre-for-acre mitigation or the use of mitigation ratios, the calculation of mitigation requirements involves use of a wetland functional assessment value multiplied by the acreage of impact to determine the required number of mitigation credits. Wetland functional assessments typically involve ranking the subject wetland relative to several variables, such as vegetation, wildlife utilization, hydrology, and surrounding landscape conditions. The goal of the functional assessment is to determine the ecological value of the wetland prior to disturbance, to ensure that mitigation is designed to replace the wetland's ecological functions rather than merely the acreage of fill. Using this rationale, a 2-acre wetland dominated by exotic vegetation with altered hydrology and little wildlife utilization would have a lower functional value and thus require fewer mitigation credits as compared to a 2-acre wetland supporting a diverse assemblage of native flora and fauna and unaltered hydrologic regime.

Information was collected during the field reconnaissance to prepare a wetland functional assessment utilizing the FDEP's UMAM, which quantifies wetland quality or health through evaluation of several variables, including location and landscape support, water environment, and community structure. The variables are defined in 62-345 F.A.C., and summarized as follows:

Location and landscape support – The value of functions provided by an assessment area to fish and wildlife is influenced by the landscape position of the assessment area and its relationship with surrounding areas. Many species that nest, feed or find cover in a specific habitat or habitat type are also dependent in varying degrees upon other habitats, including upland, wetland and other surface waters, that are present in the regional landscape. The location of the assessment

area shall be considered to the extent that fish and wildlife utilizing the area have the opportunity to access other habitats necessary to fulfill their life history requirements. The availability, connectivity, and quality of offsite habitats, and offsite land uses which might adversely impact fish and wildlife utilizing these habitats, are factors to be considered in assessing the location of the assessment area. The location of the assessment area shall be considered relative to offsite and upstream hydrologic contributing areas and to downstream and other connected waters to the extent that the diversity and abundance of fish and wildlife and their habitats is affected in these areas. The opportunity for the assessment area to provide off site water quantity and quality benefits to fish and wildlife and their habitats downstream and in connected waters is assessed based on the degree of hydrologic connectivity between these habitats and the extent to which offsite habitats are affected by discharges from the assessment area.

Water Environment – The quantity of water in an assessment area, as well as the timing, frequency, depth and duration of inundation or saturation, flow characteristics, and the quality of that water, may facilitate or preclude its ability to perform certain functions and may benefit or adversely impact its capacity to support certain wildlife. Hydrologic requirements and tolerance to hydrologic alterations and water quality variations vary by ecosystem type and the wildlife utilizing the ecosystem. Hydrologic conditions within an assessment area, including water quantity and quality, must be evaluated to determine the effect of these conditions on the functions performed by area and the extent to which these conditions benefit or adversely affect wildlife. Water quality within wetlands and other surface waters is affected by inputs from surrounding and upstream areas and the ability of the wetland or surface water system to assimilate those inputs.

Community Structure (Vegetation and Structural Habitat) – The presence, abundance, health, condition, appropriateness, and distribution of plant communities in surface waters, wetlands, and uplands can be used as indicators to determine the degree to which the functions of the community type identified are provided. Vegetation is the base of the food web in any community and provides many additional structural habitat benefits to fish and wildlife. Overall condition of a plant community can often be evaluated by observing indicators such as dead or dying vegetation, regeneration and recruitment, size and age distribution of trees and shrubs, fruit production, chlorotic or spindly plant growth, structure of the vegetation strata, and the presence, coverage and distribution of inappropriate plant species. Human activities such as mowing, grazing, off-road vehicle activity, boat traffic, and fire suppression constitute more direct and easily observable impacts affecting the condition of plant communities. Although short-term

environmental factors such as excessive rainfall, drought, and fire can have temporary impacts, human activities such as flooding, drainage via groundwater withdrawal and conveyance canals, or construction of permanent structures such as seawalls in an aquatic system can permanently damage these systems. The plant community should be evaluated to consider whether natural successional patterns for the community type are permanently altered. Inappropriate plants, including invasive exotic species, other invasive species, or other species atypical of the community type being evaluated, do not support the functions attributable to that community type and can out-compete and replace native species. Native upland and wetland vegetation, such as wax myrtle, pines and willow, which are not typically considered as invasive, can occur in numbers and coverage not appropriate for the community type and can serve as indicators of disturbance. The relative degree of coverage by inappropriate species, inappropriate vegetation strata, condition of vegetation, and both biotic and abiotic structure all provide an indication of the degree to which the functions anticipated for the community type identified are being provided.

3.0 RESULTS

3.1 Wetlands

Wetland habitats associated with transmission line structures and access roads within the ROW are dominated by freshwater marsh (FLUCFCS 641), with additional areas of mixed wetland forests (FLUCFCS 630), hydric pine flatwoods (FLUCFCS 625), ditches (FLUCFCS 511), reservoirs (FLUCFCS 530), and Bonnet Creek (FLUCFCS 510). Soil series within the ROW are identified on Figures 2-1 and 2-2; dominant series include Myakka fine sand; Smyrna fine sand; Pompano fine sand, depressional; Immokalee fine sand; Placid fine sand, depressional; Pomello fine sand, 0 to 5% slopes. The 100-year floodplain zones within the ROW are illustrated in Figures 3-1 and 3-2. Descriptions of each wetland type found within the ROW are provided below. USACE wetland datasheets and jurisdictional determination (JD) forms are located in Appendix C. A summary of wetland habitat types, total acreage, impact acreage, UMAM scores, and the resulting number of mitigation credits required is provided in Table 3.

Freshwater Marsh (FLUCFCS 641)

Freshwater marsh wetlands are common along the ROW, occurring mostly within areas that were historically cleared forested wetlands (Appendix B, Photographs 1 and 2). These habitats are dominated by emergent herbaceous species, including redtop panicum (*Panicum rigidulum*), pickerelweed (*Pontederia cordata*), lemon bacopa (*Bacopa caroliniana*), spike rush (*Eleocharis* sp.), beaksedges (*Rhynchospora* spp.), sedges (*Cyperus* spp.), dogfennel (*Eupatorium capillifolium*), caesar weed (*Urena lobata*), Walter's sedge (*Carex walteriana*), mistflower (*Eupatorium coelestinum*), soft rush (*Juncus effusus*), slender amaranth (*Amaranthus viridis*), purple nightshade (*Solanum xanti*), American pokeweed (*Phytolacca americana*), nutrushes (*Scleria* spp.), Jamaica swamp sawgrass (*Cladium jamaicense*), maidencane (*Panicum hemitomon*), lizard's tail (*Saururus cernuus*), torpedo grass (*Panicum repens*), rattlebox (*Sesbania* spp.), marsh pennywort (*Hydrocotyle* sp.), sandweed (*Hypericum fasciculatum*), alligatorflag (*Thalia geniculata*), Virginia chain fern (*Woodwardia virginica*), bushy bluestem (*Andropogon glomeratus*), and broomsedge bluestem (*Andropogon virginicus*). Common shrub species within freshwater marsh habitats include Mexican primrosewillow (*Ludwigia octovalvis*) and Peruvian primrose willow (*Ludwigia peruviana*), as well as occasional individuals of groundsel tree (*Baccharis halimifolia*), red maple (*Acer rubrum*), dahoon holly (*Ilex cassine*), willows (*Salix* spp.), cabbage palm (*Sabal palmetto*), American elm (*Ulmus americana*), and pond cypress (*Taxodium ascendens*).

Wetland Forested Mixed (FLUCFCS 630)

There are two mixed forested wetlands along the ROW, adjacent to poles 206 and 212 (Appendix B, Photographs 3 and 4), dominated by cabbage palm, slash pine (*Pinus elliottii*), pond pine (*Pinus serotina*), pond cypress, dahoon holly, red maple, ash (*Fraxinus* sp.), sweetbay (*Magnolia virginiana*), bladderwort (*Utricularia* spp.), and blackgum (*Nyssa sylvatica*).

Hydric Pine Flatwoods (FLUCFCS 625)

There is one area of hydric pine flatwoods along the ROW, adjacent to pole 212 (Appendix B, Photographs 5 and 6). This habitat is dominated by cabbage palm, slash pine, pond pine, red maple, water oak (*Quercus nigra*), wax myrtle (*Myrica cerifera*), buttonbush (*Cephalanthus occidentalis*), Canada goldenrod (*Solidago canadensis*), gallberry (*Ilex glabra*), and sweetbay.

Stream (FLUCFCS 510)

Bonnet Creek occurs within the transmission line ROW. Bonnet Creek is a severely channelized waterway with altered banks significantly reducing the floodplain and the diversity of aquatic vegetation. Species found along Bonnet Creek within the ROW include coastal plain willow, spikerush, Mexican primrose willow (*Ludwigia octovalvis*), alligator weed (*Alternanthera philoxeroides*), torpedo grass, smartweed, Piedmont primrose willow (*Ludwigia arcuata*), dogfennel (*Eupatorium cappilifolium*), capeweed (*Phyla nodiflora*), savannah false pimpernel (*Lindernia grandiflora*), elderberry (*Sambucus canadensis*), cattail, marsh pennywort, camphorweed (*Pluchea* spp.), and bedstraw (*Galium* spp.).

Ditches (FLUCFCS 511)

There are several ditched areas occurring along the ROW (Appendix B, Photographs 7 and 8); some only occasionally inundated and others typically perennially containing water. These ditches are vegetated with a mixture of species such as bahiagrass (*Paspalum notatum*), lizard's tail, bristlegrasses (*Setaria* spp.), dogfennel, smartweeds (*Polygonum* spp.), willows, capeweed (*Phyla nodiflora*), alexandergrass (*Brachiaria plantaginea*), nutrushes, and torpedo grass.

Reservoirs <10 Acres (FLUCFCS 534)

Several reservoirs exist along the transmission ROW (Appendix B, Photographs 9 and 10) and serve as stormwater retention basins. The banks and littoral zones are vegetated with a mix of species that include torpedo grass, cattail (*Typha* spp.), lemon bacopa, beaksedge, red maple, wax myrtle, sandweed, bulltongue arrowhead (*Sagittaria lancifolia*), southern watergrass (*Luziola flutans*), watershield (*Brasenia schreberi*), jointvetch (*Aeschynomene* spp.), marsh pennywort, milkpea (*Galactia* spp.), water lily (*Nymphaea* spp.) bushy bluestem, anglestem primrosewillow (*Ludwigia leptocarpa*), Peruvian primrosewillow, Mexican primrosewillow, spatterdock (*Nuphar* spp.), bahiagrass, bermudagrass (*Cynodon dactylon*), hempvines (*Mikania* spp.), and broomsedge bluestem.

3.2 Listed Species

Listed species identified within the ROW were limited to the wood stork (*Mycteria americana*), sandhill crane (*Grus canadensis pratensis*), and American kestrel (*Falco sparverius paulus*) (see

Figure 4-1). The wood stork is classified by both the USFWS and the FFWCC as endangered; the sandhill crane is classified as threatened by the USFWS and the FFWCC; the Southeastern American kestrel is classified as threatened by the FFWCC, but is not listed federally by the USFWS.

Wood storks utilize forested and herbaceous wetlands throughout the state. The Florida sandhill crane occurs in wet prairies, freshwater marshes, and pastures. The southeastern American kestrel is found throughout Florida year-round, but identification is complicated by the arrival of migrant non-listed American kestrels (*Falco sparverius*) in the winter. Migrant kestrels generally arrive in September and depart by March; therefore, the kestrels observed could be the non-listed variety (FNAI, 2001).

Although not observed, wetland habitats within the ROW provide suitable habitat for additional wading birds that are not considered threatened or endangered, but are classified by the FFWCC as species of special concern, including the little blue heron (*Egretta caerulea*), white ibis (*Eudocimus albus*), tricolored heron (*Egretta tricolor*), and snowy egret (*Egretta thula*).

The FFWCC bald eagle nest location database (<https://public.myfwc.com/FWRI/EagleNests/nestlocator.aspx>) was queried and revealed five nests within a 5-mile radius of the ROW:

- Nest ID OS092, located approximately 1 mile southeast of the transmission line ROW (see Figure 4-1).
- Nest ID OS121, located approximately 3.9 mile east of the transmission line ROW.
- Nest OS151, located approximately 4.1 miles west southwest of the transmission line ROW.
- Nest OR014, located approximately 4.2 miles northeast of the transmission line ROW.
- Nest PO172, located approximately 4.8 miles south of the transmission line ROW.

The bald eagle was removed from the USFWS endangered species list on June 28, 2007 and is no longer protected under the Endangered Species Act, but remains protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (U.S. Department of Interior, 2007). The bald eagle has been delisted by the FFWCC through adoption of the Bald Eagle Management Plan on April 9, 2008 (FFWCC, 2008). The FFWCC bald eagle management plan recommends maintaining a 660 ft buffer zone around active nests, with certain activities allowable within between 330 and 660 ft of an active nest outside of the nesting season. The

ROW is well outside the primary protection zone (660') for these nests; therefore no limitations to maintenance of the transmission line with regards to bald eagle nests are anticipated.

The FNAI database search revealed no occurrences of listed species within the transmission line ROW (see Figure 4-1).

Non-listed wildlife either directly observed, observed through tracks, scat, and/or burrows, or likely to occur based upon habitat present include but are not limited to coyote (*Canis latrans*), bobcat (*Felis rufus*), otter (*Lutra canadensis*), white tailed deer (*Odocoileus virginianus*), armadillo (*Dasypus novemcinctus*), feral hogs (*Sus scrofa*), raccoon (*Procyon lotor*), gray fox (*Urocyon cinereoargenteus*), marsh rabbit (*Sylvilagus palustris*), cottontail (*Sylvilagus floridanus*), white ibis (*Eudocimus albus*), wood ducks (*Aix sponsa*), cormorant (*Phalacrocorax auritus*), glossy ibis (*Plegadis falcinellus*), black vulture (*Coragyps atratus*), osprey (*Pandion haliaetus*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), killdeer (*Charadrius vociferous*), cattle egret (*Bulbucis ibis*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), catbird (*Dumetella carolinensis*), yellow rumped warbler (*Dendroica coronata*), Wilson's snipe (*Gallinago delicata*), eastern phoebe (*Sayornis phoebe*), hooded merganser (*Lophodytes cucullatus*), green tree frog (*Hyla cinerea*), southern leopard frog (*Rana sphenoccephala*), ribbon snake (*Thamnophis sauritus*), and largemouth bass (*Micropterus salmoides*).

3.3 Wetland Functional Assessment

Wetlands associated with the existing transmission line ROW are of variable quality, with areas of relatively undisturbed natural systems as well as highly disturbed wetlands with altered hydrologic regimes, soils, and vegetative communities. Wetland functional value is influenced by the surrounding landscape characteristics along the ROW, which include roads and highways commercial and institutional areas, and relatively undisturbed natural wetlands and uplands (see Figures 5-1 and 5-2). Overall, the wetlands located within the ROW are of relatively low quality. Primrose willow, cattail, and other nuisance and/or exotic species of vegetation are present within some wetlands in the ROW. Hydrologic alteration (ditching and reservoirs) is common. The following describes the rationale for the functional assessment scores for the Location and Landscape Support, Water Environment, and Community Structure variables, in accordance with the protocol outlined in 62-345 F.A.C., as well as a summary of the total credits required for

mitigation. UMAM worksheets for each habitat type and individual parameter scores are located in Appendix D.

Location and landscape support

Much of the landscape surrounding the transmission line ROW is comprised of high traffic roads and highways. Other significant landscape features adjacent to the ROW include reservoirs and commercial service areas. These urban land uses reduce the quality of wildlife habitat, upland buffers, and hydrologic connections. For the Location and Landscape Support variable, the following scores were assigned, in descending order:

- Mixed Forested Wetlands (FLUCFCS 630) – 6
- Hydric Pine Flatwoods (FLUCFCS 625) – 6
- Freshwater Marshes (FLUCFCS 641) – 6
- Stream (FLUCFCS 510) - 6
- Reservoirs (FLUCFCS 534) – 4
- Ditches (FLUCFCS 511) – 4

Water Environment

Wetlands within the ROW experience a marginally disturbed hydrologic regime, with some impact to the timing, frequency, depth, and duration of inundation due to the existing transmission line access roads, structure pads, roads and highways, and commercial areas. Scores for the Water Environment variable were assigned as follows:

- Mixed Forested Wetlands (FLUCFCS 630) – 7
- Hydric Pine Flatwoods (FLUCFCS 625) – 7
- Freshwater Marshes (FLUCFCS 641) – 7
- Reservoirs (FLUCFCS 534) – 5
- Ditches (FLUCFCS 511) – 5
- Stream (FLUCFCS 510) - 5

Community Structure (Vegetation and structural habitat)

Freshwater marsh wetlands within the transmission line ROW are dominated by a diverse assemblage of native species, although some nuisance vegetation is evident, specifically primrose willow and cattail. Nuisance species are a dominant feature of the vegetative communities, and the overall community composition is typical of slightly disturbed conditions. For the Community Structure variable, the following scores were assigned, in descending order:

- Mixed Wetland Forests (FLUCFCS 630) – 8
- Freshwater Marshes (FLUCFCS 641) – 7
- Hydric Pine Flatwoods (FLUCFCS 625) – 7
- Reservoirs (FLUCFCS 534) – 6
- Ditches (FLUCFCS 511) – 5
- Stream (FLUCFCS 510) - 5

Summary of Mitigation Credits Required

Functional assessment evaluation using the UMAM protocol resulted in scores of 0.70 for mixed forested wetlands (FLUCFCS 630); 0.67 for freshwater marsh; 0.67 for hydric pine flatwoods (FLUCFCS 625); 0.50 for reservoirs (FLUCFCS 534); and 0.47 for ditches (FLUCFCS 511).

The Osceola – Cane Island Tap reconductoring was designed to be conducted without impacting any jurisdictional wetland areas. Transmission structure pad and access road improvements have been designed to avoid/minimize wetland impacts to the greatest extent practicable, limiting total wetland impacts to only 0.15 acres, corresponding to 0.08 credits. A summary of wetland habitat types, total acreage, impact acreage, UMAM scores, and the resulting number of mitigation credits required is provided in Table 3.

OUC proposes to offset the loss of wetland functions associated with the proposed transmission line improvements through the purchase of mitigation credits from an agency-approved regional wetland mitigation banks.

TABLES

Table 1
Orlando - Lakeland 230 kv Transmission Line
Osceola to Cane Island Tap Segments

Summary of Proposed Access Improvements

Structure Number or Area	Proposed At-Grade Road & Pad Improvements		Proposed Raised Road & Pad Improvements				Clearing		Upland Impacts			Wetland Impacts			Floodplain Impacts
	At Grade Road Length (Ft.)	At Grade Pad	Raised Road Length (Ft.)	Raised Road Depth (Ft.)	Pad Type	Raised Pad Depth (Ft.)	Upland Clearing Length (Ft)	Forested Wetland Clearing Length (Ft)	Filling (AC)	Filling (Cu. Yds.)	Forested Upland Clearing (AC)	Filling (AC)	Filling (Cu. Yds.)	Forested Wetland Clearing (AC)	Filling (Cu. Yds.)
Osceola to Cane Island Tap Segment															
219															
218		PAD-2							0.30						
210-211	700								0.32						
210-211			660	2					0.22	792		0.15	528		
208															
206															
200			200	2					0.09	237					
199			200	2					0.09	237					
198			200	2					0.09	237					
197			200	2					0.09	237					
196E															
Segment Subtotal	700	1	1,460		1				1.21	1,740		0.15	528		0

Ecological Assessment

Osceola to Cane Island Tap Transmission Line Maintenance

Table 2. Threatened, Endangered, and Species of Special Concern Known to Occur in Osceola County, Florida.

Scientific Name	Common Name	Federal Status	State Status
<u>Plants</u>			
<i>Andropogon arctatus</i>	Pine-woods Bluestem	N	LT
<i>Bonamia grandiflora</i>	Florida Bonamia	LT	LE
<i>Calopogon multiflorus</i>	Many-flowered Grass-pink	N	LE
<i>Carex champmanii</i>	Chapman's Sedge	N	LE
<i>Chionanthus pygmaeus</i>	Pygmy Fringe Tree	LE	LE
<i>Conradina brevifolia</i>	Short-leaved Rosemary	LE	LE
<i>Conradina grandiflora</i>	Large-flowered Rosemary	N	LT
<i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i>	Scrub Buckwheat	LT	LE
<i>Lechea cernua</i>	Nodding Pinweed	N	LT
<i>Lupinus aridorum</i>	Scrub Lupine	LE	LE
<i>Nemastylis floridana</i>	Celestial Lily	N	LE
<i>Nolina atopocarpa</i>	Florida Beargrass	N	LT
<i>Nolina brittoniana</i>	Britton's Beargrass	LE	LE
<i>Ophioglossum palmatum</i>	Hand Fern	N	LE
<i>Panicum abscissum</i>	Cutthroat Grass	N	LE
<i>Paronychia chartacea</i> ssp. <i>chartacea</i>	Paper-like Nailwort	LT	LE
<i>Polygala lewtonii</i>	Lewton's Polygala	LE	LE
<i>Polygonella myriophylla</i>	Small's Jointweed	LE	LE
<i>Prunus geniculata</i>	Scrub Plum	LE	LE
<i>Pteroglossaspis ecristata</i>	Giant Orchid	N	LT
<i>Warea amplexifolia</i>	Clasping Warea	LE	LE
<u>Amphibians</u>			
<i>Rana capito</i>	Gopher Frog	N	LS

Ecological Assessment
Osceola to Cane Island Tap Transmission Line Maintenance

Table 2. Threatened, Endangered, and Species of Special Concern Known to Occur in Osceola County, Florida.

Scientific Name	Common Name	Federal Status	State Status
<u>Reptiles</u>			
<i>Alligator mississippiensis</i>	American Alligator	SAT	LS
<i>Drymarchon couperi</i>	Eastern Indigo Snake	LT	LT
<i>Eumeces egregius lividus</i>	Blue-tailed Mole Skink	LT	LT
<i>Gopherus polyphemus</i>	Gopher Tortoise	N	LT
<i>Neoseps reynoldsi</i>	Sand Skink	LT	LT
<u>Birds</u>			
<i>Ammodramus savannarum floridanus</i>	Florida Grasshopper Sparrow	LE	LE
<i>Aphelocoma coerulescens</i>	Florida Scrub-jay	LT	LT
<i>Aramus guarauna</i>	Limpkin	N	LS
<i>Athene cunicularia floridana</i>	Florida Burrowing Owl	N	LS
<i>Caracara cheriway</i>	Crested Caracara	LT	LT
<i>Egretta caerulea</i>	Little Blue Heron	N	LS
<i>Egretta thula</i>	Snowy Egret	N	LS
<i>Egretta tricolor</i>	Tricolored Heron	N	LS
<i>Eudocimus albus</i>	White Ibis	N	LS
<i>Falco peregrinus</i>	Peregrine Falcon	N	LE
<i>Falco sparverius paulus</i>	Southeastern American Kestrel	N	LT
<i>Grus americana</i>	Whooping Crane	LE	LS
<i>Grus canadensis pratensis</i>	Florida Sandhill Crane	N	LT
<i>Haliaeetus leucocephalus</i>	Bald Eagle	N	LT
<i>Mycteria americana</i>	Wood Stork	LE	LE
<i>Picoides borealis</i>	Red-cockaded Woodpecker	LE	LS
<i>Rostrhamus sociabilis plumbeus</i>	Snail Kite	LE	LE
<u>Mammals</u>			
<i>Peromyscus floridanus</i>	Florida Mouse	N	LS
<i>Puma concolor coryi</i>	Florida Panther	LE	LE
<i>Sciurus niger shermani</i>	Sherman's Fox Squirrel	N	LS
<i>Ursus americanus floridanus</i>	Florida Black Bear	N	LT

Source:
FNAI Tracking List, 2008.

Table 3. OUC Osceola Substation – Cane Island Tap Wetland Summary

Wetland ID	FLUCFCS	Total Acreage	Impact Acreage	UMAM	Functional Loss (credits)
196C-A	641	0.36	0	0.67	0
196C-B	641	0.60	0	0.67	0
196E-A	534	3.94	0	0.5	0
196F-A	641	1.03	0	0.67	0
196F-B	641	0.96	0	0.67	0
197A	534	1.53	0	0.5	0
198A	534	1.08	0	0.5	0
198B	511	0.23	0	0.47	0
198C	511	0.12	0	0.47	0
199A	511	0.07	0	0.47	0
199B	641	1.22	0	0.67	0
199C	641	0.23	0	0.67	0
200A	534	1.33	0	0.5	0
201A	534	1.81	0	0.5	0
202A	641	2.06	0	0.67	0
202B	641	1.53	0	0.67	0
203A	534	0.80	0	0.5	0
204A	641	1.55	0	0.67	0
205A	534	1.67	0	0.5	0
206A	630	3.08	0	0.7	0
206B	511	0.29	0	0.47	0
206C	534	1.31	0	0.5	0
207A	534	0.68	0	0.5	0
207B	641	0.71	0	0.67	0
208A	534	0.72	0	0.5	0
210A	534	0.90	0.15	0.5	0.08
212A	625	0.65	0	0.67	0
212B	534	0.46	0	0.5	0
212C	630	0.22	0	0.7	0
212D	641	0.44	0	0.67	0
213A	534	0.45	0	0.5	0
213B	511	0.03	0	0.47	0
214A	534	0.56	0	0.5	0
214B	534	1.16	0	0.5	0
218A	641	0.18	0	0.67	0
218B	641	0.15	0	0.67	0
219A	641	0.44	0	0.67	0
49A	510	0.35	0	0.53	0
TOTAL		34.90	0.15		0.08

FIGURES



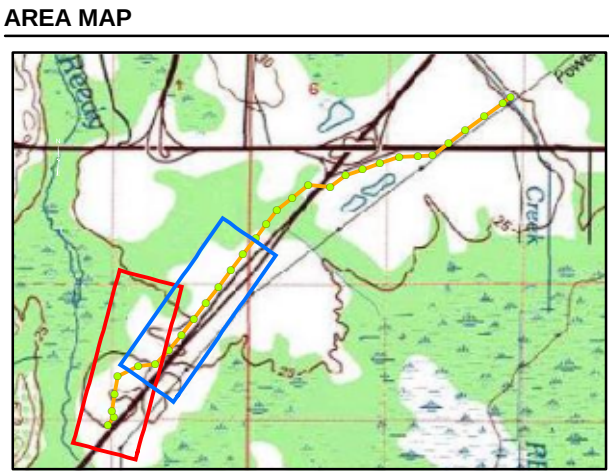
Sheet 1



Sheet 2

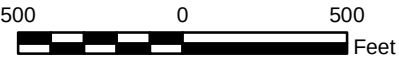
LEGEND

- Transmission Line Structures
- Transmission Line



REFERENCE

USGS Intercession City (FL) Quadrangle



PROJECT		Orlando Utilities Commission Osceola to Cane Island Tap Substation Transmission Line Right-of-Way Maintenance	
TITLE		USGS Topographic Map	
	PROJECT No. 063-7654		SCALE AS SHOWN
	DESIGN	AB 17 Mar. 2008	REV. 0
	GIS	AB 17 Mar. 2008	
	CHECK	SR 17 Mar. 2008	
		REVIEW	KB 17 Mar. 2008

FIGURE 1-1



Sheet 3

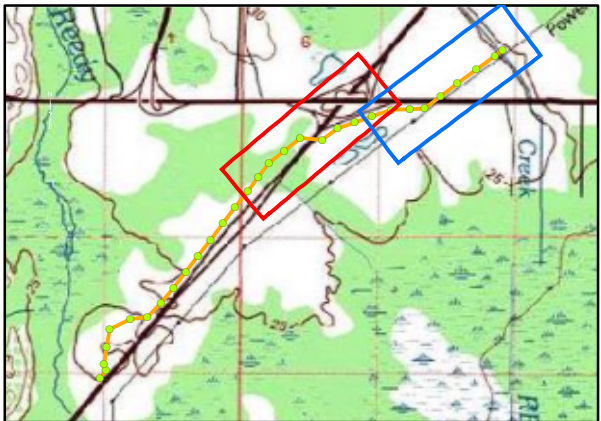


Sheet 4

LEGEND

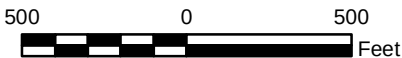
- Transmission Line Structures
- Transmission Line

AREA MAP



REFERENCE

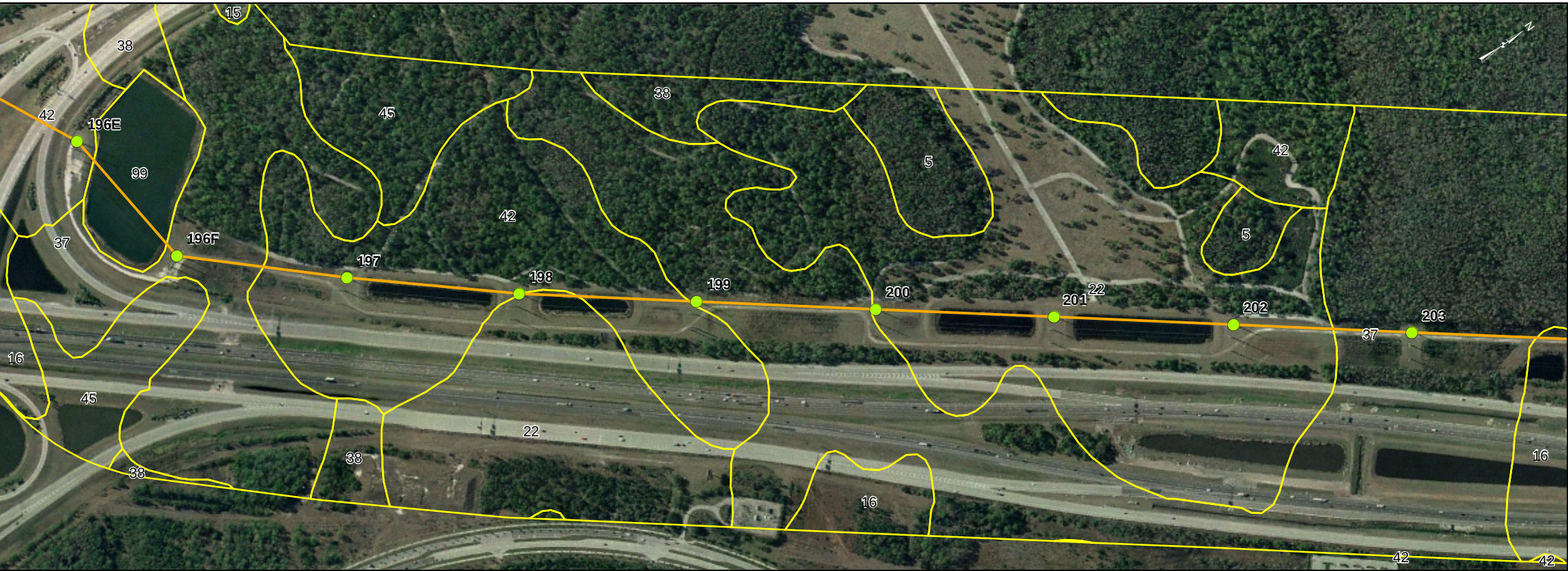
USGS Intercession City (FL) Quadrangle



PROJECT					Orlando Utilities Commission Osceola to Cane Island Tap Substation Transmission Line Right-of-Way Maintenance	
TITLE						
USGS Topographic Map						
 Golder Associates Gainesville, Florida		PROJECT No. 063-7654			SCALE AS SHOWN	REV
		DESIGN	AB	17 Mar. 2008	FIGURE 1-2	
		GIS	AB	17 Mar. 2008		
		CHECK	SR	17 Mar. 2008		
		REVIEW	KB	17 Mar. 2008		



Sheet 1



Sheet 2

LEGEND

●

Transmission Line Structures

—

Transmission Line

□

Soils

4 - ARENTS, 0 TO 5 PERCENT SLOPES

5 - BASINGER FINE SAND

14 - HOLOPAW FINE SAND

15 - HONTOON MUCK

16 - IMMOKALEE FINE SAND

22 - MYAKKA FINE SAND

24 - NARCOOSSEE FINE SAND

27 - ONA FINE SAND

32 - PLACID FINE SAND, DEPRESSIONAL

34 - POMELLO FINE SAND, 0 TO 5 PERCENT SLOPES

37 - POMPANO FINE SAND, DEPRESSIONAL

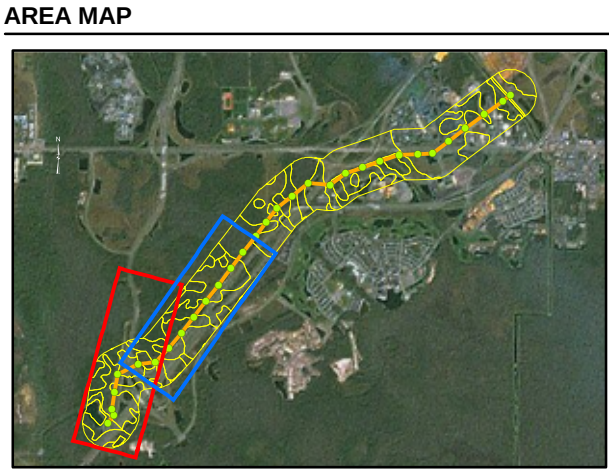
38 - RIVIERA FINE SAND

42 - SMYRNA FINE SAND

44 - TAVARES FINE SAND, 0 TO 5 PERCENT SLOPES

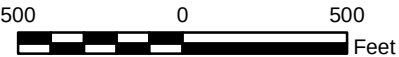
45 - VERO FINE SAND

99 - WATER



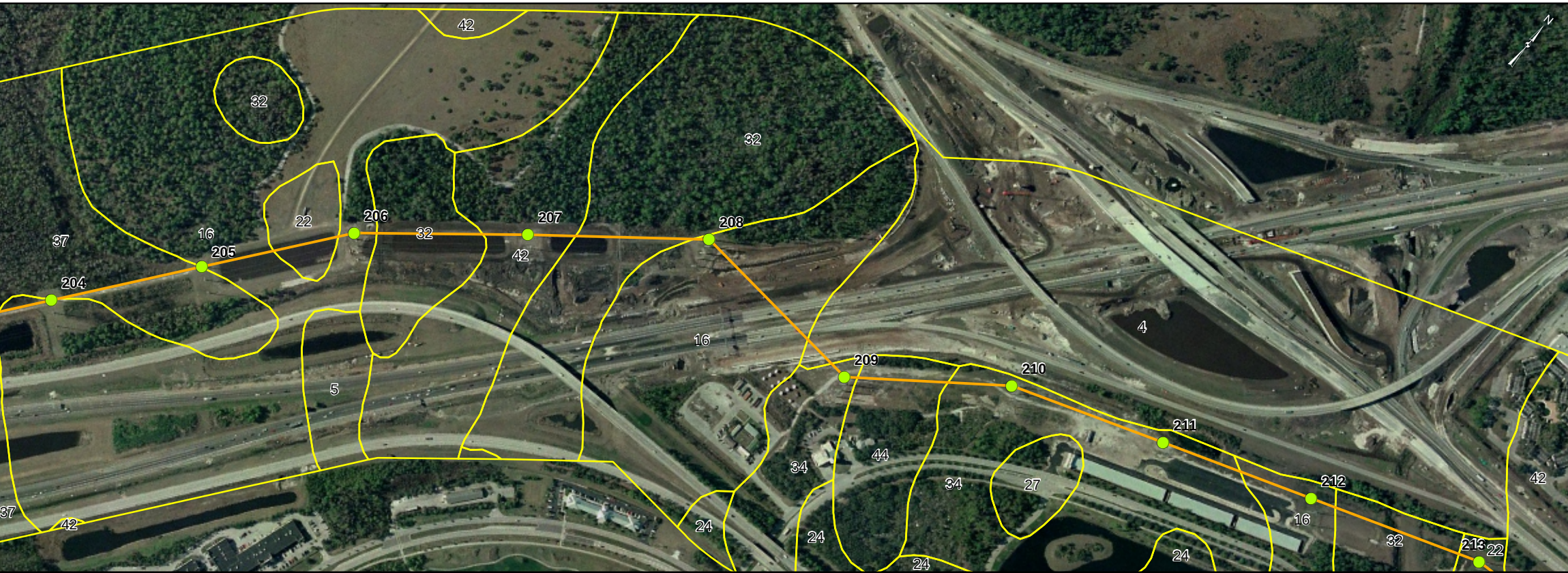
REFERENCE

U.S. Department of Agriculture, Natural Resources Conservation Service, 1990

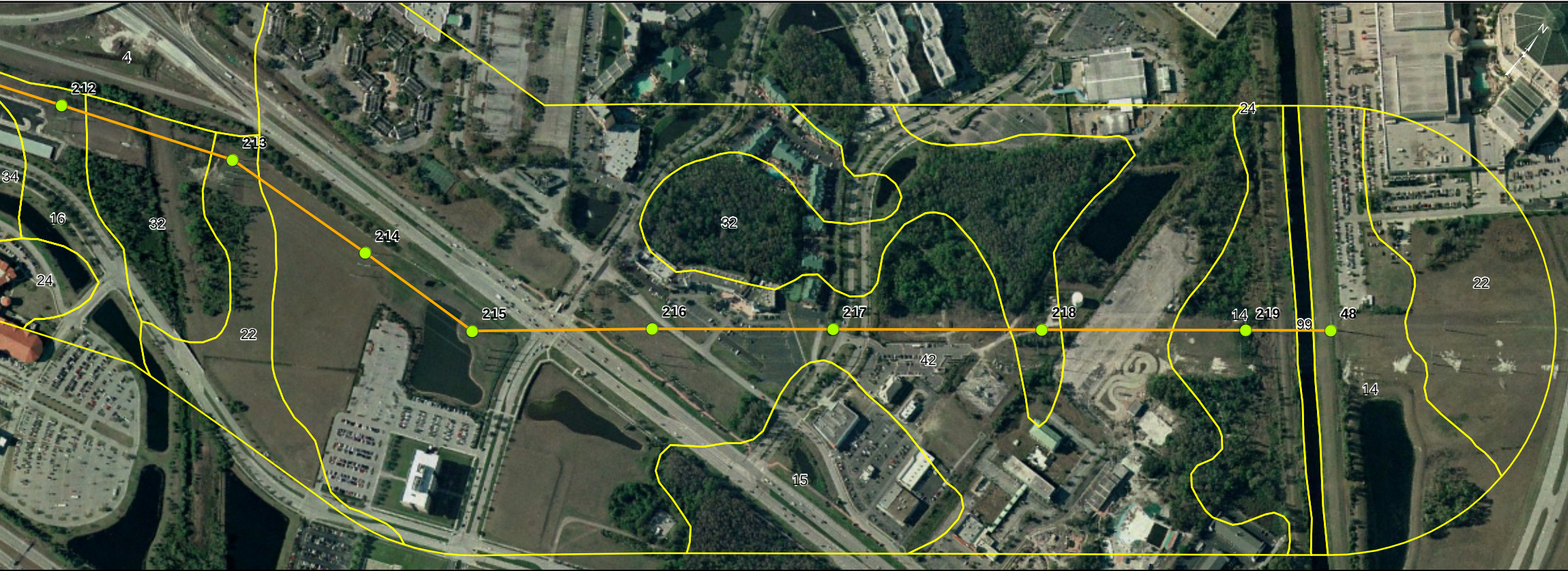


PROJECT		Orlando Utilities Commission Osceola to Cane Island Tap Substation Transmission Line Right-of-Way Maintenance	
TITLE		Soils	
 Golder Associates Gainesville, Florida	PROJECT No. 063-7654		SCALE AS SHOWN
	DESIGN	AB 28 Mar. 2008	REV. 0
	GIS	AB 28 Mar. 2008	
	CHECK	SR 28 Mar. 2008	
	REVIEW	KB 28 Mar. 2008	

FIGURE 2-1



Sheet 3



Sheet 4

LEGEND

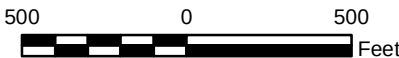
- Transmission Line Structures
- Transmission Line
- Soils
 - 4 - ARENTS, 0 TO 5 PERCENT SLOPES
 - 5 - BASINGER FINE SAND
 - 14 - HOLOPAW FINE SAND
 - 15 - HONTOON MUCK
 - 16 - IMMOKALEE FINE SAND
 - 22 - MYAKKA FINE SAND
 - 24 - NARCOOSSEE FINE SAND
 - 27 - ONA FINE SAND
 - 32 - PLACID FINE SAND, DEPRESSIONAL
 - 34 - POMELLO FINE SAND, 0 TO 5 PERCENT SLOPES
 - 37 - POMPANO FINE SAND, DEPRESSIONAL
 - 38 - RIVIERA FINE SAND
 - 42 - SMYRNA FINE SAND
 - 44 - TAVARES FINE SAND, 0 TO 5 PERCENT SLOPES
 - 45 - VERO FINE SAND
 - 99 - WATER

AREA MAP



REFERENCE

U.S. Department of Agriculture, Natural Resources Conservation Service, 1990



PROJECT		Orlando Utilities Commission Osceola to Cane Island Tap Substation Transmission Line Right-of-Way Maintenance	
TITLE		Soils	
	PROJECT No. 063-7654		SCALE AS SHOWN
	DESIGN	AB 28 Mar. 2008	REV. 0
	GIS	AB 28 Mar. 2008	
	CHECK	SR 28 Mar. 2008	
	REVIEW	KB 28 Mar. 2008	

FIGURE 2-2



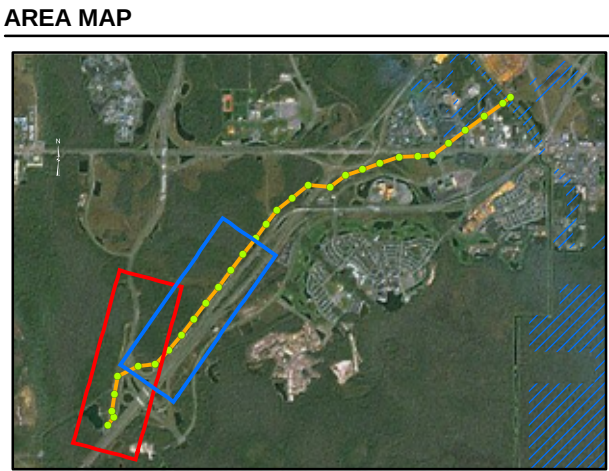
Sheet 1



Sheet 2

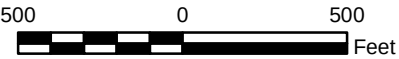
LEGEND

- Transmission Line Structures
- Transmission Line
- /// 100-Year Floodplain

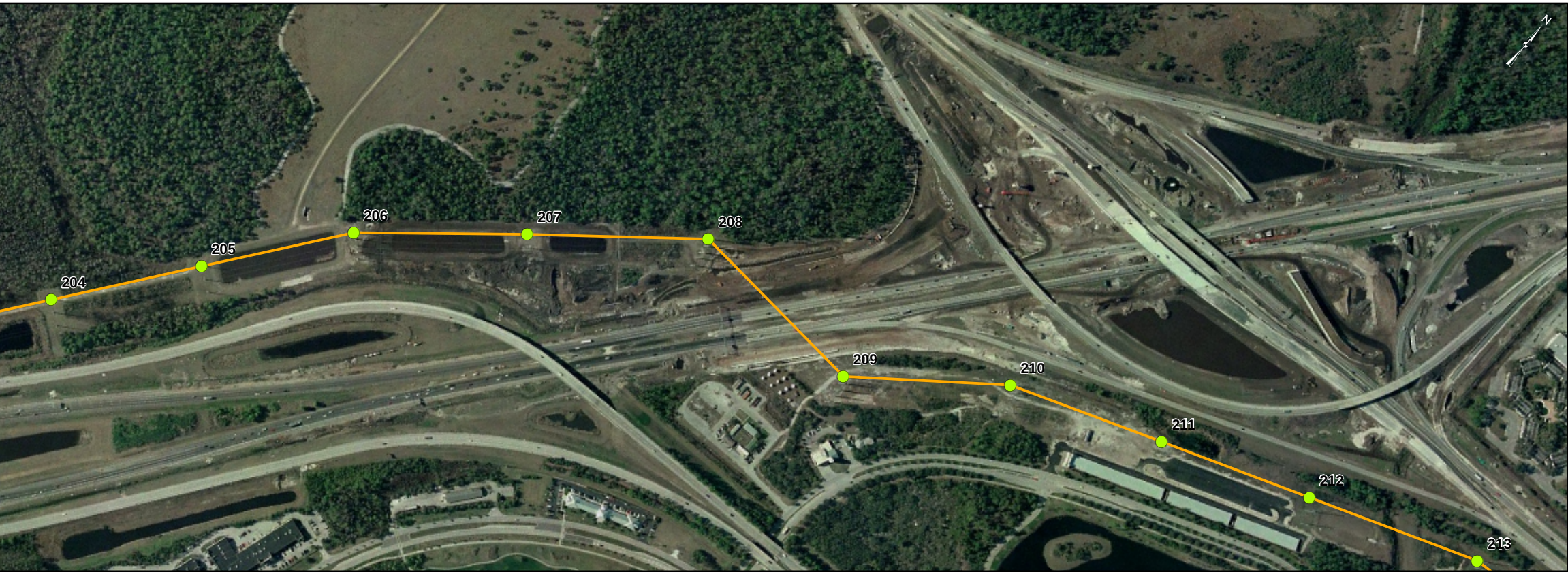


REFERENCE

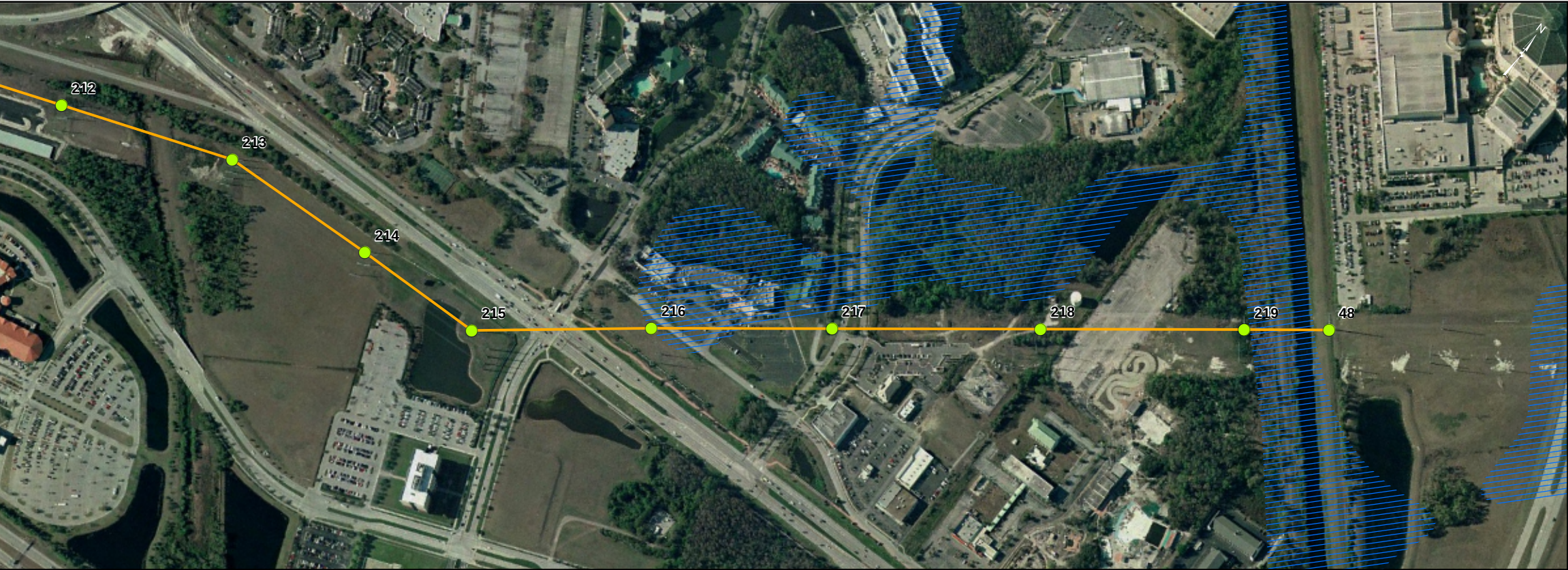
Federal Emergency Management Agency, 1995



PROJECT			
Orlando Utilities Commission Osceola to Cane Island Tap Substation Transmission Line Right-of-Way Maintenance			
TITLE			
Floodplain Zones			
	PROJECT No. 063-7654		SCALE AS SHOWN
	DESIGN	AB 28 Mar. 2008	REV. 0
	GIS	AB 28 Mar. 2008	
	CHECK	SR 28 Mar. 2008	
	REVIEW	KB 28 Mar. 2008	
FIGURE 3-1			



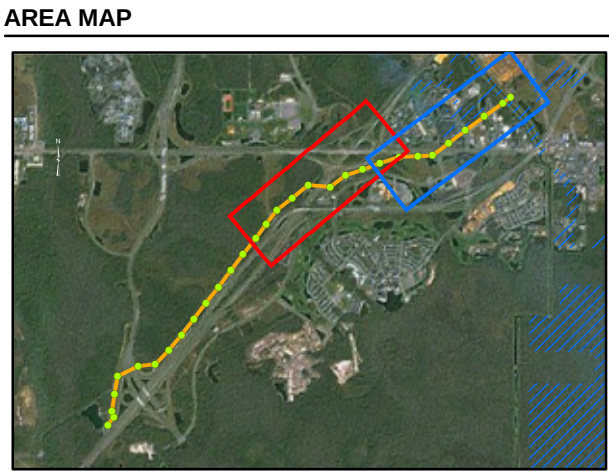
Sheet 3



Sheet 4

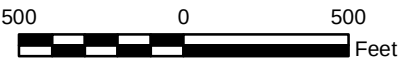
LEGEND

- Transmission Line Structures
- Transmission Line
- /// 100-Year Floodplain



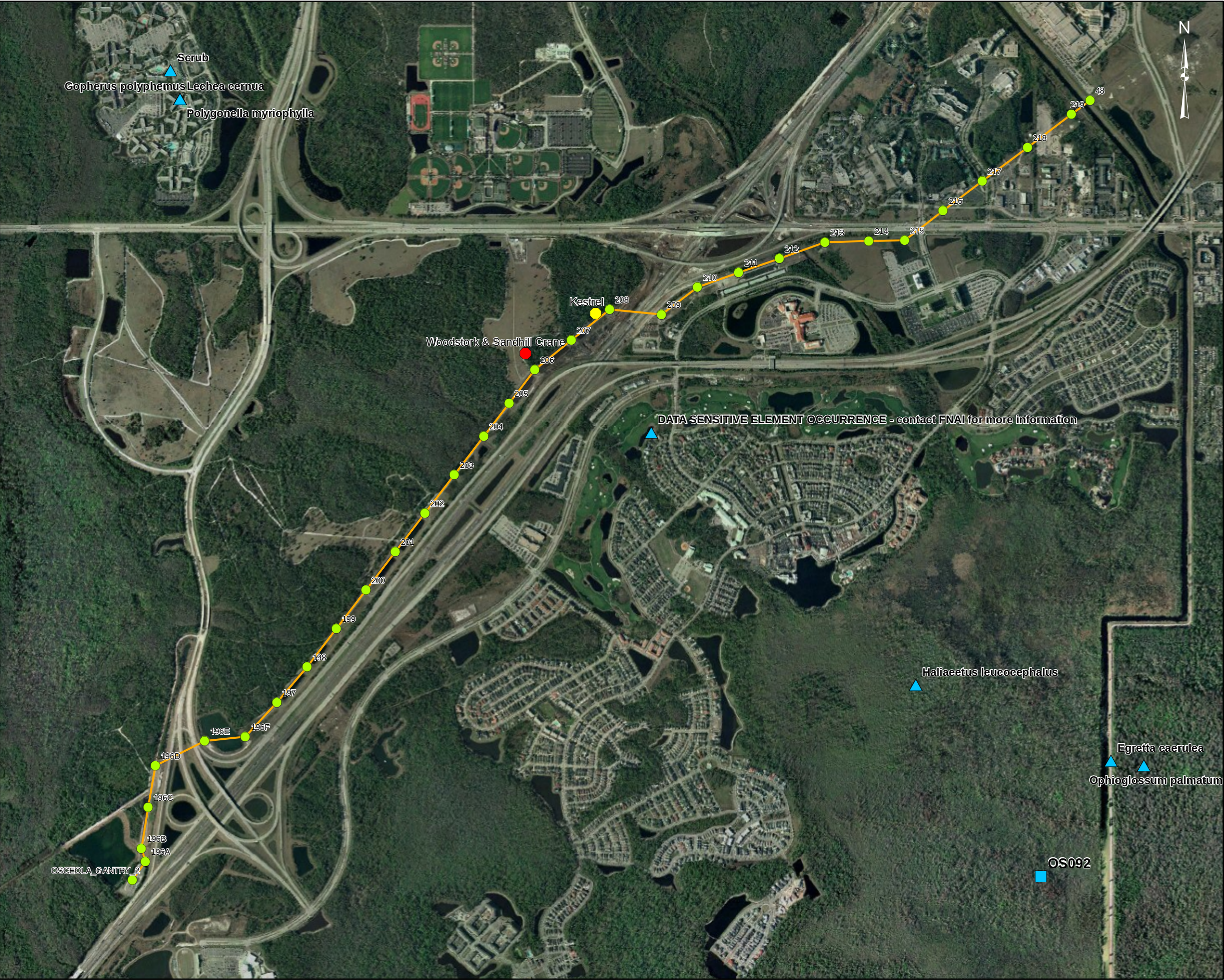
REFERENCE

Federal Emergency Management Agency, 1995



PROJECT			
Orlando Utilities Commission Osceola to Cane Island Tap Substation Transmission Line Right-of-Way Maintenance			
TITLE			
Floodplain Zones			
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	DESIGN	AB 17 Mar. 2008	REV. 0
	GIS	AB 17 Mar. 2008	
	CHECK	SR 17 Mar. 2008	
	REVIEW	KB 17 Mar. 2008	

FIGURE 3-2



LEGEND

- Transmission Line Structures
- Transmission Line
- FFWCC Bald Eagle Nests Locations
- FNAI Listed Species Occurrences

Golder Observed Listed Species

- Kestrel
- Woodstork and Sandhill Crane

REFERENCE

Florida Fish and Wildlife Conservation Commission

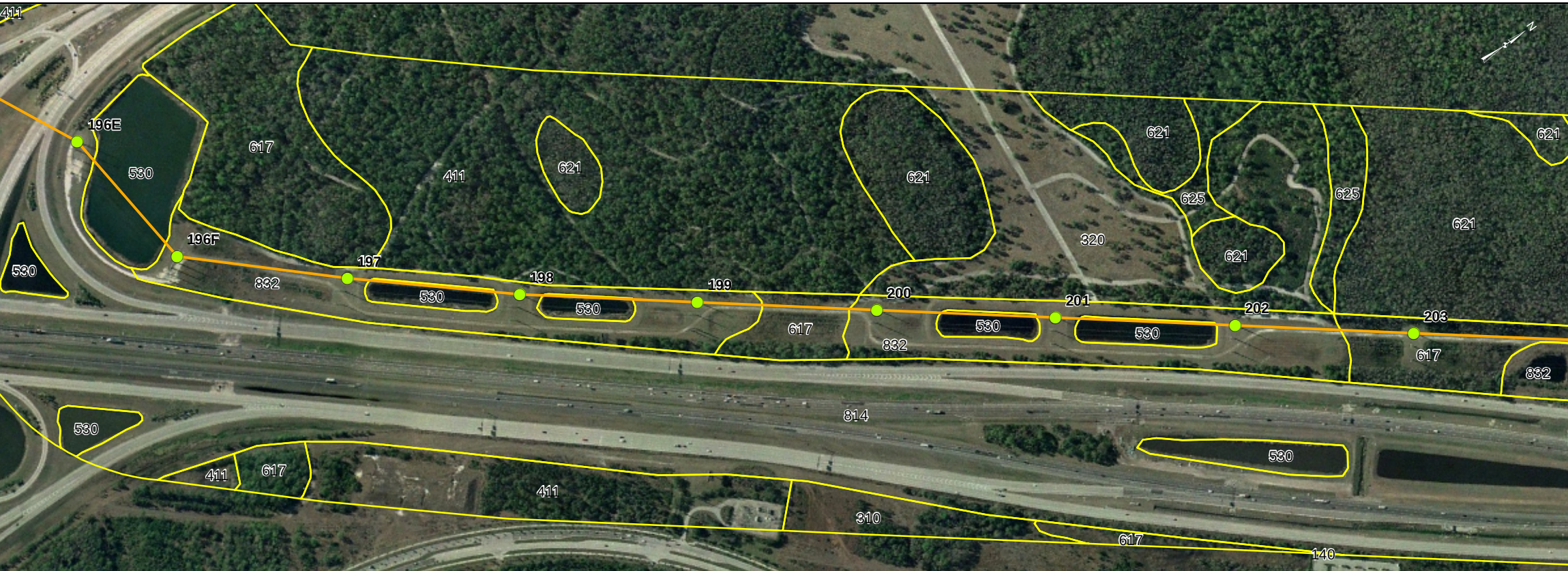
2,000 0 2,000 Feet

PROJECT			
Orlando Utilities Commission Osceola to Cane Island Tap Substation Transmission Line Right-of-Way Maintenance			
TITLE			
Listed Species Occurrences			
 Golder Associates Gainesville, Florida	PROJECT No. 063-7654		SCALE AS SHOWN
	DESIGN	AB	17 Mar. 2008
	GIS	AB	17 Mar. 2008
	CHECK	SR	17 Mar. 2008
	REVIEW	KB	17 Mar. 2008
			REV. 0

FIGURE 4-1



Sheet 1

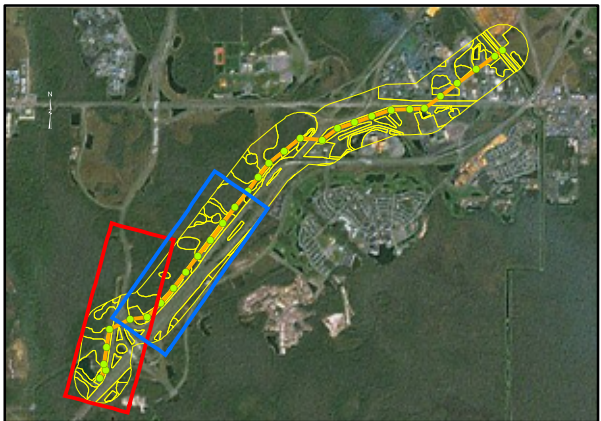


Sheet 2

LEGEND

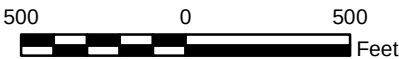
- Transmission Line Structures
- Transmission Line
- Land Use and Land Cover
 - 140 - Commercial and services
 - 141 - Light Commercial
 - 170 - Institutional
 - 310 - Herbaceous upland nonforested
 - 320 - Shrub and brushland
 - 411 - Pine flatwoods
 - 420 - Upland hardwood forests
 - 434 - Upland mixed coniferous/hardwood
 - 512 - Streams and waterways
 - 530 - Reservoirs - pits, retention ponds, dams
 - 617 - Mixed wetland hardwoods
 - 621 - Cypress
 - 625 - Hydric pine flatwoods
 - 630 - Wetland forested mixed
 - 743 - Spoil areas
 - 814 - Roads and highways
 - 831 - Electrical power facilities
 - 832 - Electrical power transmission lines

AREA MAP



REFERENCE

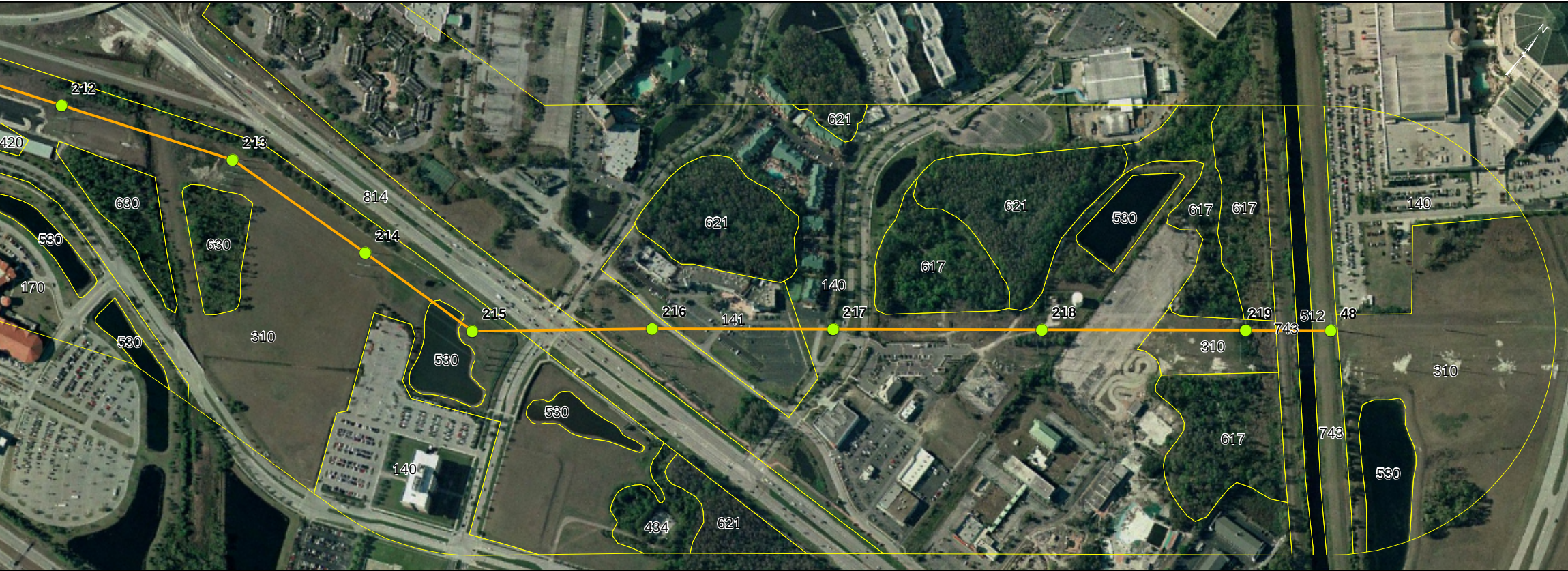
South Florida Water Management District, 2004



PROJECT			
Orlando Utilities Commission Osceola to Cane Island Tap Substation Transmission Line Right-of-Way Maintenance			
TITLE			
Land Use and Land Cover			
	PROJECT No. 063-7654		SCALE AS SHOWN
	DESIGN	AB	17 Mar. 2008
	GIS	AB	17 Mar. 2008
	CHECK	SR	17 Mar. 2008
	REVIEW	KB	17 Mar. 2008
FIGURE 5-1			REV. 0

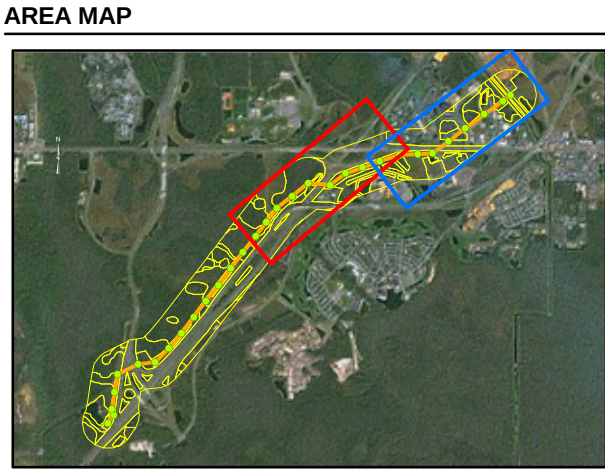


Sheet 3



Sheet 4

- LEGEND**
- Transmission Line Structures
 - Transmission Line
 - Land Use and Land Cover
 - 140 - Commercial and services
 - 141 - Light Commercial
 - 170 - Institutional
 - 310 - Herbaceous upland nonforested
 - 320 - Shrub and brushland
 - 411 - Pine flatwoods
 - 420 - Upland hardwood forests
 - 434 - Upland mixed coniferous/hardwood
 - 512 - Streams and waterways
 - 530 - Reservoirs - pits, retention ponds, dams
 - 617 - Mixed wetland hardwoods
 - 621 - Cypress
 - 625 - Hydric pine flatwoods
 - 630 - Wetland forested mixed
 - 743 - Spoil areas
 - 814 - Roads and highways
 - 831 - Electrical power facilities
 - 832 - Electrical power transmission lines



REFERENCE

South Florida Water Management District, 2004



PROJECT			
Orlando Utilities Commission Osceola to Cane Island Tap Substation Transmission Line Right-of-Way Maintenance			
TITLE			
Land Use and Land Cover			
 Golder Associates Gainesville, Florida	PROJECT No. 063-7654		SCALE AS SHOWN
	DESIGN	AB	17 Mar. 2008
	GIS	AB	17 Mar. 2008
	CHECK	SR	17 Mar. 2008
	REVIEW	KB	17 Mar. 2008
FIGURE 5-2			REV. 0

APPENDIX A

WETLAND SURVEY

APPENDIX B

SITE PHOTOGRAPHS



Photograph 1. Freshwater Marsh – FLUCFCS 641.



Photograph 2. Freshwater Marsh – FLUCFCS 641.



Photograph 3. Wetland Forested Mixed – FLUCFCS 630.



Photograph 4. Wetland Forested Mixed – FLUCFCS 630.



Photograph 5. Hydric Pine Flatwoods – FLUCFCS 625.



Photograph 6. Hydric Pine Flatwoods – FLUCFCS 625.



Photograph 7. Ditch – FLUCFCS 511.



Photograph 8. Ditch – FLUCFCS 511.



Photograph 9. Reservoir – FLUCFCS 530.



Photograph 10. Reservoir – FLUCFCS 530.

APPENDIX C

ACOE DATA SHEETS and JD FORMS

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 641</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>196C-A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hydrocotyle umbellata</i>	H	OBL	8		
2 <i>Eupatorium capillifolium</i>	H	FACW	9		
3 <i>Andropogon glomeratus</i>	H	FACW	10		
4 <i>Cladium jamaicense</i>	H	OBL	11		
5 <i>Acer rubrum</i>	S	FAC	12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
--	--

Remarks: These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.

SOILS

Map Unit Name (Series and Phase): <u>Pompano fine sand, depressional</u>	Drainage Class: <u>IIIw</u> Circle
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A11	10YR 4/1			Dk. gray fine sand
5-12	A12	10YR 5/2	10YR 6/6		Gray/brown fine sand w/ mottles

Hydric Soil Indicators:		
☒ Histosol	☒ Reducing Conditions	☒ High Organic Content in Surface Layer in Sandy Soils
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	☒ Yes	☐ No	Is this Sampling Point Within a Wetland?	☒ Yes	☐ No
Wetland Hydrology Present?	☒ Yes	☐ No			
Hydric Soils Present?	☒ Yes	☐ No			

Remarks: _____

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 641</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? <i>(if needed, explain on reverse)</i> ☐ Yes ☒ No	Plot ID: <u>196C-B</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hydrocotyle umbellata</i>	H	OBL	8		
2 <i>Eupatorium capillifolium</i>	H	FACW	9		
3 <i>Andropogon glomeratus</i>	H	FACW	10		
4 <i>Cladium jamaicense</i>	H	OBL	11		
5 <i>Acer rubrum</i>	S	FAC	12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Wetland Hydrology Indicators: <i>Primary Indicators:</i> ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands <i>Secondary Indicators (2 or more required):</i> ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
--	--

Remarks: These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.

SOILS

Map Unit Name (Series and Phase): <u>Pompano fine sand, depressional</u>	Drainage Class: <u>IIIw</u> <i>Circle</i>
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A11	10YR 4/1			Dk. gray fine sand
5-12	A12	10YR 5/2	10YR 6/6		Gray/brown fine sand w/ mottles

Hydric Soil Indicators:		
☒ Histosol	☒ Reducing Conditions	☒ High Organic Content in Surface Layer in Sandy Soils
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	☒ Yes	☐ No	Is this Sampling Point Within a Wetland?	☒ Yes	☐ No
Wetland Hydrology Present?	☒ Yes	☐ No			
Hydric Soils Present?	☒ Yes	☐ No			

Remarks: _____

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 534 (wet)</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>196E-A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Typha Spp.</u>	H	OBL	8		
2 <u>Panicum repens</u>	H	FACW	9		
3 <u>Bacopa caroliniana</u>	H	OBL	10		
4 <u>Andropogon glomeratus</u>	H	FACW	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): _____

Remarks: Most of the wetland plants are subject to cattle grazing which may affect species diversity,

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>36+</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
---	---

Remarks: Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development.

SOILS

Map Unit Name (Series and Phase): <u>Symrna fine sand</u>	Drainage Class: <u>IVw</u> Circle
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A-11	N 2/0			Fine sand
4-7	A-12	10YR 4/1	10YR 3/1		Fine sand

Hydric Soil Indicators:		
☒ Histosol	☒ Reducing Conditions	☐ High Organic Content in Surface Layer in Sandy Soils
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	

Remarks: _____

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	
Community ID: <u>FLUCFCS 641</u>	
Transect ID: <u>196F-A</u>	
Plot ID: <u>196F-A</u>	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hydrocotyle umbellata</i>	H	OBL	8		
2 <i>Eupatorium capillifolium</i>	H	FACW	9		
3 <i>Andropogon glomeratus</i>	H	FACW	10		
4 <i>Cladium jamaicense</i>	H	OBL	11		
5 <i>Acer rubrum</i>	S	FAC	12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: <i>Primary Indicators:</i> ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands <i>Secondary Indicators (2 or more required):</i> ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	
Remarks: <u>These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Pompano fine sand, depressional</u>	Drainage Class: <u>IIIw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A11	10YR 4/1			Dk. gray fine sand
5-12	A12	10YR 5/2	10YR 6/6		Gray/brown fine sand w/ mottles
Hydric Soil Indicators:					
☒ Histosol	☒ Reducing Conditions	☒ High Organic Content in Surface Layer in Sandy Soils			
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List			
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List			
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)			
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	☒ Yes	☐ No	Is this Sampling Point Within a Wetland?	☒ Yes	☐ No
Wetland Hydrology Present?	☒ Yes	☐ No			
Hydric Soils Present?	☒ Yes	☐ No			
Remarks: _____					

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 641</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>196F-B</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hydrocotyle umbellata</i>	H	OBL	8		
2 <i>Eupatorium capillifolium</i>	H	FACW	9		
3 <i>Andropogon glomeratus</i>	H	FACW	10		
4 <i>Cladium jamaicense</i>	H	OBL	11		
5 <i>Acer rubrum</i>	S	FAC	12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
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Remarks: These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.

SOILS

Map Unit Name (Series and Phase): <u>Pompano fine sand, depressional</u>	Drainage Class: <u>IIIw</u> Circle
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A11	10YR 4/1			Dk. gray fine sand
5-12	A12	10YR 5/2	10YR 6/6		Gray/brown fine sand w/ mottles

Hydric Soil Indicators:		
☒ Histosol	☒ Reducing Conditions	☒ High Organic Content in Surface Layer in Sandy Soils
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	☒ Yes	☐ No	Is this Sampling Point Within a Wetland?	☒ Yes	☐ No
Wetland Hydrology Present?	☒ Yes	☐ No			
Hydric Soils Present?	☒ Yes	☐ No			

Remarks: _____

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 534 (wet)</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? <i>(if needed, explain on reverse)</i> ☐ Yes ☒ No	Plot ID: <u>197A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Typha Spp.</u>	H	OBL	8		
2 <u>Panicum repens</u>	H	FACW	9		
3 <u>Bacopa caroliniana</u>	H	OBL	10		
4 <u>Andropogon glomeratus</u>	H	FACW	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): _____

Remarks: Most of the wetland plants are subject to cattle grazing which may affect species diversity,

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>36+</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0</u> (In.)	
Remarks: <u>Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Symrna fine sand</u>	Drainage Class: <u>IVw</u>				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? <u>Yes</u> Circle <u>No</u>				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A-11	N 2/0			Fine sand
4-7	A-12	10YR 4/1	10YR 3/1		Fine sand
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☐ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks: _____	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 534 (wet)</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>198A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Typha Spp.</u>	H	OBL	8		
2 <u>Panicum repens</u>	H	FACW	9		
3 <u>Bacopa caroliniana</u>	H	OBL	10		
4 <u>Andropogon glomeratus</u>	H	FACW	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC)-: _____

Remarks: Most of the wetland plants are subject to cattle grazing which may affect species diversity,

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>36+</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0</u> (In.)	
Remarks: <u>Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Symrna fine sand</u>	Drainage Class: <u>IVw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A-11	N 2/0			Fine sand
4-7	A-12	10YR 4/1	10YR 3/1		Fine sand
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☐ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks: _____	

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 511 ditches / swales</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: <u>198B</u>
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>198B</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Juncus effusus</u>	H	OBL	8		
2 <u>Saururus cernuus</u>	H	OBL	9		
3 <u>Ludwigia Peruviana</u>	H	OBL	10		
4 <u>Ludwigia octovalvis</u>	H	OBL	11		
5 <u>Panicum repens</u>	H	FACW	12		
6 <u>Salix caroliniana</u>	S	OBL	13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and feral hogs. Diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: Primary Indicators: <table style="width: 100%;"><tr><td>☒ Inundated</td><td>☒ Oxidized Root Channels in Upper 12"</td></tr><tr><td>☒ Saturated in Upper 12 inches</td><td>☒ Water-Stained Leaves</td></tr><tr><td>☐ Water Marks</td><td>☐ Local Soil Survey Data</td></tr><tr><td>☐ Drift Lines</td><td>☒ FAC-Neutral Test</td></tr><tr><td>☒ Sediment Deposits</td><td>☐ Other (explain in remarks)</td></tr><tr><td>☒ Drainage Patterns in Wetlands</td><td></td></tr></table>	☒ Inundated	☒ Oxidized Root Channels in Upper 12"	☒ Saturated in Upper 12 inches	☒ Water-Stained Leaves	☐ Water Marks	☐ Local Soil Survey Data	☐ Drift Lines	☒ FAC-Neutral Test	☒ Sediment Deposits	☐ Other (explain in remarks)	☒ Drainage Patterns in Wetlands	
☒ Inundated	☒ Oxidized Root Channels in Upper 12"												
☒ Saturated in Upper 12 inches	☒ Water-Stained Leaves												
☐ Water Marks	☐ Local Soil Survey Data												
☐ Drift Lines	☒ FAC-Neutral Test												
☒ Sediment Deposits	☐ Other (explain in remarks)												
☒ Drainage Patterns in Wetlands													
Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)													
Remarks: <u>These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.</u>													

SOILS

Map Unit Name (Series and Phase): <u>Myakka fine sand</u>	Drainage Class: <u>IVw</u> Circle																
Taxonomy (Subgroup): <u></u>	Field Observations Confirm Mapped Type? Yes No																
Profile Description:																	
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.												
0-7	A-1	10YR 3/1			Fine sand												
7-27	A-2	10YR 7/1	10YR 3/2		Fine sand												
Hydric Soil Indicators: <table style="width: 100%;"><tr><td>☒ Histosol</td><td>☒ Reducing Conditions</td><td>☒ High Organic Content in Surface Layer in Sandy Soils</td></tr><tr><td>☐ Histic Epipedon</td><td>☒ Gleyed or Low-Chroma Colors</td><td>☐ Listed on National Hydric Soils List</td></tr><tr><td>☐ Sulfidic Odor</td><td>☒ Concretions</td><td>☐ Listed on Local Hydric Soils List</td></tr><tr><td>☒ Aquic Moisture Regime</td><td>☐ Organic Streaking in Sandy Soils</td><td>☐ Other (explain in remarks)</td></tr></table>						☒ Histosol	☒ Reducing Conditions	☒ High Organic Content in Surface Layer in Sandy Soils	☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List	☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List	☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)
☒ Histosol	☒ Reducing Conditions	☒ High Organic Content in Surface Layer in Sandy Soils															
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List															
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List															
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)															
Remarks: <u></u>																	

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No		
Hydric Soils Present? ☒ Yes ☐ No		
Remarks: <u></u>		

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 511 ditches / swales</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>198C</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Juncus effusus</u>	H	OBL	8		
2 <u>Saururus cernuus</u>	H	OBL	9		
3 <u>Ludwigia Peruviana</u>	H	OBL	10		
4 <u>Ludwigia octovalvis</u>	H	OBL	11		
5 <u>Panicum repens</u>	H	FACW	12		
6 <u>Salix caroliniana</u>	S	OBL	13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and feral hogs. Diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Remarks: <u>These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Myakka fine sand</u>	Drainage Class: <u>IVw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-7	A-1	10YR 3/1			Fine sand
7-27	A-2	10YR 7/1	10YR 3/2		Fine sand
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☒ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks: _____	

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 511</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>199A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Paspalum notatum</u>	H	FACU+	8		
2 <u>Panicum repens</u>	H	FACW-	9		
3 <u>Cyperus spp.</u>	H	FACW	10		
4			11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 67%

Remarks: Most of these wetlands have experience grazing by cattle and diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Remarks: <u>These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.</u>

SOILS

Map Unit Name (Series and Phase): <u>Pompano fine sand, depressional</u>	Drainage Class: <u>IIIw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A11	10YR 4/1			Dk. gray fine sand
5-12	A12	10YR 5/2	10YR 6/6		Gray/brown fine sand w/ mottles
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☒ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	☒ Yes	☐ No	Is this Sampling Point Within a Wetland?	☒ Yes	☐ No
Wetland Hydrology Present?	☒ Yes	☐ No			
Hydric Soils Present?	☒ Yes	☐ No			
Remarks: _____					

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 641</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>199B</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hydrocotyle umbellata</i>	H	OBL	8		
2 <i>Eupatorium capillifolium</i>	H	FACW	9		
3 <i>Andropogon glomeratus</i>	H	FACW	10		
4 <i>Cladium jamaicense</i>	H	OBL	11		
5 <i>Acer rubrum</i>	S	FAC	12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
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Remarks: These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.

SOILS

Map Unit Name (Series and Phase): <u>Pompano fine sand, depressional</u>	Drainage Class: <u>IIIw</u> Circle
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A11	10YR 4/1			Dk. gray fine sand
5-12	A12	10YR 5/2	10YR 6/6		Gray/brown fine sand w/ mottles

Hydric Soil Indicators:		
☒ Histosol	☒ Reducing Conditions	☒ High Organic Content in Surface Layer in Sandy Soils
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	☒ Yes	☐ No	Is this Sampling Point Within a Wetland?	☒ Yes	☐ No
Wetland Hydrology Present?	☒ Yes	☐ No			
Hydric Soils Present?	☒ Yes	☐ No			

Remarks: _____

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DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	
Community ID: <u>FLUCFCS 641</u>	
Transect ID: <u>199C</u>	
Plot ID: <u>199C</u>	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Hydrocotyle umbellata</u>	H	OBL	8		
2 <u>Eupatorium capillifolium</u>	H	FACW	9		
3 <u>Andropogon glomeratus</u>	H	FACW	10		
4 <u>Cladium jamaicense</u>	H	OBL	11		
5 <u>Acer rubrum</u>	S	FAC	12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: <u>Primary Indicators:</u> ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands <u>Secondary Indicators (2 or more required):</u> ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	
Remarks: <u>These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Pompano fine sand, depressional</u>	Drainage Class: <u>IIIw</u> Circle				
Taxonomy (Subgroup): <u></u>	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A11	10YR 4/1			Dk. gray fine sand
5-12	A12	10YR 5/2	10YR 6/6		Gray/brown fine sand w/ mottles
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☒ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: <u></u>					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	☒ Yes	☐ No	Is this Sampling Point Within a Wetland?	☒ Yes	☐ No
Wetland Hydrology Present?	☒ Yes	☐ No			
Hydric Soils Present?	☒ Yes	☐ No			
Remarks: <u></u>					

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 534 (wet)</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>200A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Typha Spp.</u>	H	OBL	8		
2 <u>Panicum repens</u>	H	FACW	9		
3 <u>Bacopa caroliniana</u>	H	OBL	10		
4 <u>Andropogon glomeratus</u>	H	FACW	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Most of the wetland plants are subject to cattle grazing which may affect species diversity,

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>36+</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
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Remarks: Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development.

SOILS

Map Unit Name (Series and Phase): <u>Myakka fine sand</u>	Drainage Class: <u>IVw</u> Circle
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-7	A-1	10YR 3/1			Fine sand
7-27	A-2	10YR 7/1	10YR 3/2		Fine sand

Hydric Soil Indicators:		
☒ Histosol	☒ Reducing Conditions	☐ High Organic Content in Surface Layer in Sandy Soils
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	

Remarks: _____

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DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 534 (wet)</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>201A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Typha Spp.</u>	H	OBL	8		
2 <u>Panicum repens</u>	H	FACW	9		
3 <u>Bacopa caroliniana</u>	H	OBL	10		
4 <u>Andropogon glomeratus</u>	H	FACW	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Most of the wetland plants are subject to cattle grazing which may affect species diversity,

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>36+</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0</u> (In.)	
Remarks: Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development.	

SOILS

Map Unit Name (Series and Phase): <u>Myakka fine sand</u>	Drainage Class: <u>IVw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-7	A-1	10YR 3/1			Fine sand
7-27	A-2	10YR 7/1	10YR 3/2		Fine sand
Hydric Soil Indicators:					
☒ Histosol	☒ Reducing Conditions	☐ High Organic Content in Surface Layer in Sandy Soils			
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List			
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List			
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)			
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks:	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 641</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>202A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hydrocotyle umbellata</i>	H	OBL	8		
2 <i>Eupatorium capillifolium</i>	H	FACW	9		
3 <i>Andropogon glomeratus</i>	H	FACW	10		
4 <i>Cladium jamaicense</i>	H	OBL	11		
5 <i>Acer rubrum</i>	S	FAC	12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands
Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)

Remarks: These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.

SOILS

Map Unit Name (Series and Phase): <u>Pompano fine sand, depressional</u>	Drainage Class: <u>IIIw</u> Circle
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A11	10YR 4/1			Dk. gray fine sand
5-12	A12	10YR 5/2	10YR 6/6		Gray/brown fine sand w/ mottles

Hydric Soil Indicators:		
☒ Histosol	☒ Reducing Conditions	☒ High Organic Content in Surface Layer in Sandy Soils
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	☒ Yes	☐ No	Is this Sampling Point Within a Wetland?	☒ Yes	☐ No
Wetland Hydrology Present?	☒ Yes	☐ No			
Hydric Soils Present?	☒ Yes	☐ No			

Remarks: _____

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DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 641</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>202B</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hydrocotyle umbellata</i>	H	OBL	8		
2 <i>Eupatorium capillifolium</i>	H	FACW	9		
3 <i>Andropogon glomeratus</i>	H	FACW	10		
4 <i>Cladium jamaicense</i>	H	OBL	11		
5 <i>Acer rubrum</i>	S	FAC	12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	

Remarks: These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.

SOILS

Map Unit Name (Series and Phase): <u>Pompano fine sand, depressional</u>	Drainage Class: <u>IIIw</u> Circle
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A11	10YR 4/1			Dk. gray fine sand
5-12	A12	10YR 5/2	10YR 6/6		Gray/brown fine sand w/ mottles

Hydric Soil Indicators:	☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime	☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils	☒ High Organic Content in Surface Layer in Sandy Soils Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)
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Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	☒ Yes	☐ No	Is this Sampling Point Within a Wetland?	☒ Yes	☐ No
Wetland Hydrology Present?	☒ Yes	☐ No			
Hydric Soils Present?	☒ Yes	☐ No			

Remarks: _____

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 534 (wet)</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>203A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Typha Spp.</u>	H	OBL	8		
2 <u>Panicum repens</u>	H	FACW	9		
3 <u>Bacopa caroliniana</u>	H	OBL	10		
4 <u>Andropogon glomeratus</u>	H	FACW	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC): _____

Remarks: Most of the wetland plants are subject to cattle grazing which may affect species diversity,

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>36+</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0</u> (In.)	
Remarks: <u>Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Pompano fine sand, depressional</u>	Drainage Class: <u>VIIw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-5	A11	10YR 4/1			Dk. gray fine sand
5-12	A12	10YR 5/2	10YR 6/6		Gray/brown fine sand w/ mottles
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☐ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks: _____	

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	
Community ID: <u>FLUCFCS 641</u>	
Transect ID: <u>204A</u>	
Plot ID: <u>204A</u>	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Andropogon virginicus</u>	H	FAC-	8		
2 <u>Hypericum fasciculatum</u>	S	FACW+	9		
3			10		
4			11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 50%

Remarks: Most of the wetland plants are subject to cattle grazing which may affect species diversity,

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>36+</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0</u> (In.)	
Remarks: <u>Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Myakka fine sand</u>	Drainage Class: <u>IVw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-7	A-1	10YR 3/1			Fine sand
7-27	A-2	10YR 7/1	10YR 3/2		Fine sand
Hydric Soil Indicators:					
☒ Histosol	☒ Reducing Conditions	☐ High Organic Content in Surface Layer in Sandy Soils			
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List			
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List			
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)			
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Wetland Hydrology Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Hydric Soils Present? ☒ Yes ☐ No		
Remarks:		

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 534 (wet)</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>205A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Typha Spp.</u>	H	OBL	8		
2 <u>Panicum repens</u>	H	FACW	9		
3 <u>Bacopa caroliniana</u>	H	OBL	10		
4 <u>Andropogon glomeratus</u>	H	FACW	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Most of the wetland plants are subject to cattle grazing which may affect species diversity,

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>36+</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0</u> (In.)	
Remarks: Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development.	

SOILS

Map Unit Name (Series and Phase): <u>Immokalee fine sand</u>	Drainage Class: <u>IVw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-7	A-1	10YR 3/1			Fine sand
7-13	A-21	10YR 6/1			Loose fine sand
Hydric Soil Indicators:					
☒ Histosol	☒ Reducing Conditions	☐ High Organic Content in Surface Layer in Sandy Soils			
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List			
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List			
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)			
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks:	

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 630</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>206A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Juncus effusus</u>	H	OBL	8		
2 <u>Saururus cernuus</u>	H	OBL	9		
3 <u>Ludwigia Peruviana</u>	H	OBL	10		
4 <u>Ludwigia octovalvis</u>	H	OBL	11		
5 <u>Panicum repens</u>	H	FACW	12		
6 <u>Salix caroliniana</u>	S	OBL	13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and feral hogs. Diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Remarks: <u>These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Placid fine sand, depressional</u>	Drainage Class: <u>IIIw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-14	A-11	10YR 2/1			Black fine sand
14-24	A-12	10YR 3/1			Dk. gray fine sand
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☒ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks: _____	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 511</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>206B</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Juncus effusus</u>	H	OBL	8		
2 <u>Saururus cernuus</u>	H	OBL	9		
3 <u>Ludwigia Peruviana</u>	H	OBL	10		
4 <u>Ludwigia octovalvis</u>	H	OBL	11		
5 <u>Panicum repens</u>	H	FACW	12		
6 <u>Salix caroliniana</u>	S	OBL	13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and feral hogs. Diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Remarks: <u>These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Placid fine sand, depressional</u>	Drainage Class: <u>IIIw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-14	A-11	10YR 2/1			Black fine sand
14-24	A-12	10YR 3/1			Dk. gray fine sand
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☒ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks: _____	

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 534 (wet)</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>206C-1</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Typha Spp.</i>	H	OBL	8		
2 <i>Panicum repens</i>	H	FACW	9		
3 <i>Bacopa caroliniana</i>	H	OBL	10		
4 <i>Andropogon glomeratus</i>	H	FACW	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Most of the wetland plants are subject to cattle grazing which may affect species diversity,

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: <i>Primary Indicators:</i> ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands
Field Observations: Depth of Surface Water: <u>36+</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0</u> (In.)	<i>Secondary Indicators (2 or more required):</i> ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)

Remarks: Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development.

SOILS

Map Unit Name (Series and Phase): <u>Placid Fine Sand, Depressional</u>	Drainage Class: <u>IIIw</u> Circle
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-14	A-11	10YR 2/1			Black fine sand
14-24	A-12	10YR 3/1			Dk. gray fine sand

Hydric Soil Indicators:		
☒ Histosol	☒ Reducing Conditions	☐ High Organic Content in Surface Layer in Sandy Soils
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 534 (wet)</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>207A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Typha Spp.</u>	H	OBL	8		
2 <u>Panicum repens</u>	H	FACW	9		
3 <u>Bacopa caroliniana</u>	H	OBL	10		
4 <u>Andropogon glomeratus</u>	H	FACW	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Most of the wetland plants are subject to cattle grazing which may affect species diversity,

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>36+</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
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Remarks: Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development.

SOILS

Map Unit Name (Series and Phase): <u>Symrna fine sand, Placid fine sand depressional</u>	Drainage Class: <u>IVw, IIlw</u> Circle
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A-11	N 2/0			Fine sand
4-7	A-12	10YR 4/1		10YR 3/1	Fine sand
0-14	A-11	10YR 2/1			Black fine sand
14-24	A-12	10YR 3/1			Dk. gray fine sand

Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime	☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils	☐ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)
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Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Wetland Hydrology Present? ☒ Yes ☐ No	Hydric Soils Present? ☒ Yes ☐ No
Is this Sampling Point Within a Wetland? ☒ Yes ☐ No		
Remarks: _____		

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 641</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>207B</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Juncus effusus</i>	H	OBL	8		
2 <i>Saururus cernuus</i>	H	OBL	9		
3 <i>Ludwigia Peruviana</i>	H	OBL	10		
4 <i>Ludwigia octovalvis</i>	H	OBL	11		
5 <i>Panicum repens</i>	H	FACW	12		
6 <i>Salix caroliniana</i>	S	OBL	13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and feral hogs. Diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Remarks: <u>These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Symrna fine sand & Placid fine sand, depressional</u>	Drainage Class: <u>IVw, IIIw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A-11	N 2/0			Fine sand
4-7	A-12	10YR 4/1		10YR 3/1	Fine sand
0-14	A-11	10YR 2/1			Black fine sand
14-24	A-12	10YR 3/1			Dk. gray fine sand
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☒ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks: _____	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 534 (wet)</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>210A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Typha Spp.</u>	H	OBL	8		
2 <u>Panicum repens</u>	H	FACW	9		
3 <u>Bacopa caroliniana</u>	H	OBL	10		
4 <u>Andropogon glomeratus</u>	H	FACW	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Most of the wetland plants are subject to cattle grazing which may affect species diversity,

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>36+</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Remarks: <u>Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Pomello fine sand, 0 to 5% slopes</u>	Drainage Class: <u>VI</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A11	10YR 5/1			Loose fine sand
4-15	A21	10YR 6/1			Loose fine sand
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☐ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks: _____	

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 625</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>212A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Pinus elliottii</i>	T	FACW	8 <i>Solidago canadensis</i>	H	FACU
2 <i>Pinus serotina</i>	T	FACW	9 <i>Ilex glabra</i>	S	FACW
3 <i>Sabal palmetto</i>	T	FAC	10 <i>Magnolia virginiana</i>	T	FACW+
4 <i>Acer rubrum</i>	T	OBL	11		
5 <i>Quercus nigra</i>	T	FAC	12		
6 <i>Myrica cerifera</i>	S	FAC+	13		
7 <i>Cephalanthus occidentalis</i>	S	OBL	14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 90%

Remarks: Most of these wetlands have experience grazing by cattle and feral hogs. Diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
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Remarks: These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.

SOILS

Map Unit Name (Series and Phase): <u>Placid fine sand, depressional</u>	Drainage Class: _____
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? <u>Yes</u> <u>No</u>

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-14	A-11	10YR 2/1			Black fine sand
14-24	A-12	10YR 3/1			Dk. gray fine sand

Hydric Soil Indicators:		
☒ Histosol	☒ Reducing Conditions	☒ High Organic Content in Surface Layer in Sandy Soils
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	

Remarks: _____

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	
Community ID: <u>FLUCFCS 534 (dry)</u>	
Transect ID: _____	
Plot ID: <u>212B</u>	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hydrocotyle umbellata</i>	H	OBL	8		
2 <i>Cyperus lanceolatus</i>	H	FACW	9		
3 <i>Cyperus surinamensis</i>	H	FACW	10		
4 <i>Ludwigia octovalvis</i>	H	OBL	11		
5 <i>Paspalum notatum</i>	H	UP	12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 80%

Remarks: Retention areas sodded with wetland species emerging through bahia squares.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: <i>Primary Indicators:</i> ☐ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands <i>Secondary Indicators (2 or more required):</i> ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>0</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	
Remarks: <u>Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development recently constructed.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Placid fine sand, depressional</u>	Drainage Class: <u>IIIw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-14	A-11	10YR 2/1			Black fine sand
14-24	A-12	10YR 3/1			Dk. gray fine sand
Hydric Soil Indicators:					
☒ Histosol	☒ Reducing Conditions	☒ High Organic Content in Surface Layer in Sandy Soils			
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List			
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List			
☐ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)			
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No	Wetland Hydrology Present? ☒ Yes ☐ No
Hydric Soils Present? ☒ Yes ☐ No		
Remarks: _____		

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 630</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>212C</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Acer rubrum</i>	C	FAC	8		
2 <i>Taxodium ascendans</i>	C	OBL	9		
3 <i>Ilex cassine</i>	C	FACW	10		
4 <i>Pinus serotina</i>	H	FACW+	11		
5 <i>Sabal palmetto</i>	H	FAC	12		
6 <i>Magnolia virginiana</i>	S	FACW+	13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and feral hogs. Diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
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Remarks: These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.

SOILS

Map Unit Name (Series and Phase): <u>Placid fine sand, depressional</u>	Drainage Class: <u>IIIw</u> Circle
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-14	A-11	10YR 2/1			Black fine sand
14-24	A-12	10YR 3/1			Dk. gray fine sand

Hydric Soil Indicators:		
☒ Histosol	☒ Reducing Conditions	☒ High Organic Content in Surface Layer in Sandy Soils
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	

Remarks: _____

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 641</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>212D</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Juncus effusus</i>	H	OBL	8		
2 <i>Saururus cernuus</i>	H	OBL	9		
3 <i>Ludwigia Peruviana</i>	H	OBL	10		
4 <i>Ludwigia octovalvis</i>	H	OBL	11		
5 <i>Panicum repens</i>	H	FACW	12		
6 <i>Salix caroliniana</i>	S	OBL	13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and feral hogs. Diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Remarks: <u>These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Placid fine sand, depressional</u>	Drainage Class: <u>IIIw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-14	A-11	10YR 2/1			Black fine sand
14-24	A-12	10YR 3/1			Dk. gray fine sand
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☒ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks: _____	

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 534 (dry)</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>213A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Hydrocotyle umbellata</i>	H	OBL	8		
2 <i>Cyperus lanceolatus</i>	H	FACW	9		
3 <i>Cyperus surinamensis</i>	H	FACW	10		
4 <i>Ludwigia octovalvis</i>	H	OBL	11		
5 <i>Paspalum notatum</i>	H	UP	12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 80%

Remarks: Retention areas sodded with wetland species emerging through bahia squares.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: Primary Indicators: ☐ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>0</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	
Remarks: <u>Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development recently constructed.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Symrna fine sand</u>	Drainage Class: <u>IVw</u>				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? <u>Yes</u> Circle No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A-11	N 2/0			Fine sand
4-7	A-12	10YR 4/1		10YR 3/1	Fine sand
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☐ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☒ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks: _____	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 511 ditches / swales</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>213B</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Juncus effusus</i>	H	OBL	8		
2 <i>Saururus cernuus</i>	H	OBL	9		
3 <i>Ludwigia Peruviana</i>	H	OBL	10		
4 <i>Ludwigia octovalvis</i>	H	OBL	11		
5 <i>Panicum repens</i>	H	FACW	12		
6 <i>Salix caroliniana</i>	S	OBL	13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and feral hogs. Diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Remarks: <u>These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Myakka fine sand</u>	Drainage Class: <u>IVw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-7	A-1	10YR 3/1			Fine sand
7-27	A-2	10YR 7/1	10YR 3/2		Fine sand
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☒ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks: _____	

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 534 (wet)</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>214A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Typha Spp.</u>	H	OBL	8		
2 <u>Panicum repens</u>	H	FACW	9		
3 <u>Bacopa caroliniana</u>	H	OBL	10		
4 <u>Andropogon glomeratus</u>	H	FACW	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Most of the wetland plants are subject to cattle grazing which may affect species diversity,

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>36+</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
---	---

Remarks: Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development.

SOILS

Map Unit Name (Series and Phase): <u>Symrna fine sand</u>	Drainage Class: <u>IVw</u>
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? <u>Yes</u> Circle No

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A-11	N 2/0			<u>Fine sand</u>
4-7	A-12	10YR 4/1		10YR 3/1	<u>Fine sand</u>

Hydric Soil Indicators:		
☒ Histosol	☒ Reducing Conditions	☐ High Organic Content in Surface Layer in Sandy Soils
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	

Remarks: _____

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 534 (wet)</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>214B</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Typha Spp.</u>	H	OBL	8		
2 <u>Panicum repens</u>	H	FACW	9		
3 <u>Bacopa caroliniana</u>	H	OBL	10		
4 <u>Andropogon glomeratus</u>	H	FACW	11		
5			12		
6			13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Most of the wetland plants are subject to cattle grazing which may affect species diversity,

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☐ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
Field Observations: Depth of Surface Water: <u>36+</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0</u> (In.)	
Remarks: <u>Reservoirs area used as compensating storage / retention ponds associated with I-4 access and Celebration development.</u>	

SOILS

Map Unit Name (Series and Phase): <u>Symrna fine sand</u>	Drainage Class: <u>IVw</u>				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? <u>Yes</u> Circle No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A-11	N 2/0			<u>Fine sand</u>
4-7	A-12	10YR 4/1		10YR 3/1	<u>Fine sand</u>
Hydric Soil Indicators: ☒ Histosol ☐ Histic Epipedon ☐ Sulfidic Odor ☒ Aquic Moisture Regime ☒ Reducing Conditions ☒ Gleyed or Low-Chroma Colors ☒ Concretions ☐ Organic Streaking in Sandy Soils ☐ High Organic Content in Surface Layer in Sandy Soils ☐ Listed on National Hydric Soils List ☐ Listed on Local Hydric Soils List ☐ Other (explain in remarks)					
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	
Remarks: _____	

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 641</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>217A</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <i>Juncus effusus</i>	H	OBL	8		
2 <i>Saururus cernuus</i>	H	OBL	9		
3 <i>Ludwigia Peruviana</i>	H	OBL	10		
4 <i>Ludwigia octovalvis</i>	H	OBL	11		
5 <i>Panicum repens</i>	H	FACW	12		
6 <i>Salix caroliniana</i>	S	OBL	13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and feral hogs. Diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)	Wetland Hydrology Indicators: Primary Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☒ Sediment Deposits ☒ Drainage Patterns in Wetlands Secondary Indicators (2 or more required): ☒ Oxidized Root Channels in Upper 12" ☒ Water-Stained Leaves ☐ Local Soil Survey Data ☒ FAC-Neutral Test ☐ Other (explain in remarks)
--	--

Remarks: These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.

SOILS

Map Unit Name (Series and Phase): <u>Symrna fine sand & Placid fine sand, depressional</u>	Drainage Class: <u>IVw, IIIw</u> Circle
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A-11	N 2/0			Fine sand
4-7	A-12	10YR 4/1		10YR 3/1	Fine sand
0-14	A-11	10YR 2/1			Black fine sand
14-24	A-12	10YR 3/1			Dk. gray fine sand

Hydric Soil Indicators:		
☒ Histosol	☒ Reducing Conditions	☒ High Organic Content in Surface Layer in Sandy Soils
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)

Remarks: _____

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No	
Hydric Soils Present? ☒ Yes ☐ No	

Remarks: _____

Form Content Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project Site: <u>063-7654-0130 - Osceola Sub to Cane Island Tap T-line Corridor</u>	Date: <u>December 07</u>
Applicant/Owner: <u>Orlando Utilities Commission (OUC)</u>	County: <u>Osceola</u>
Investigator: <u>M. Arrants</u>	State: <u>Florida</u>
Do Normal Circumstances exist on the site? ☐ Yes ☒ No	Community ID: <u>FLUCFCS 641</u>
Is the site significantly disturbed (Atypical Situation)? ☒ Yes ☐ No	Transect ID: _____
Is Area a Potential Problem Area? (if needed, explain on reverse) ☐ Yes ☒ No	Plot ID: <u>217B</u>

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1 <u>Juncus effusus</u>	H	OBL	8		
2 <u>Saururus cernuus</u>	H	OBL	9		
3 <u>Ludwigia Peruviana</u>	H	OBL	10		
4 <u>Ludwigia octovalvis</u>	H	OBL	11		
5 <u>Panicum repens</u>	H	FACW	12		
6 <u>Salix caroliniana</u>	S	OBL	13		
7			14		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): 100%

Remarks: Most of these wetlands have experience grazing by cattle and feral hogs. Diversity could be biased.

HYDROLOGY

☐ Recorded Data (describe in Remarks) ☐ Stream, Lake, or Tide Gauge ☒ Aerial Photographs ☐ Other ☐ No recorded data available	Wetland Hydrology Indicators: Primary Indicators: <table style="width: 100%;"><tr><td>☒ Inundated</td><td>☒ Oxidized Root Channels in Upper 12"</td></tr><tr><td>☒ Saturated in Upper 12 inches</td><td>☒ Water-Stained Leaves</td></tr><tr><td>☐ Water Marks</td><td>☐ Local Soil Survey Data</td></tr><tr><td>☐ Drift Lines</td><td>☒ FAC-Neutral Test</td></tr><tr><td>☒ Sediment Deposits</td><td>☐ Other (explain in remarks)</td></tr><tr><td>☒ Drainage Patterns in Wetlands</td><td></td></tr></table>	☒ Inundated	☒ Oxidized Root Channels in Upper 12"	☒ Saturated in Upper 12 inches	☒ Water-Stained Leaves	☐ Water Marks	☐ Local Soil Survey Data	☐ Drift Lines	☒ FAC-Neutral Test	☒ Sediment Deposits	☐ Other (explain in remarks)	☒ Drainage Patterns in Wetlands	
☒ Inundated	☒ Oxidized Root Channels in Upper 12"												
☒ Saturated in Upper 12 inches	☒ Water-Stained Leaves												
☐ Water Marks	☐ Local Soil Survey Data												
☐ Drift Lines	☒ FAC-Neutral Test												
☒ Sediment Deposits	☐ Other (explain in remarks)												
☒ Drainage Patterns in Wetlands													
Field Observations: Depth of Surface Water: <u>0 to 6</u> (In.) Depth to Free Water in Pit: <u>n/a</u> (In.) Depth to Saturated Soil: <u>0 to 12</u> (In.)													
Remarks: <u>These areas impacted by elevated t-line access roads and swales and berms constructed during construction and development of I-4 and Celebration Development.</u>													

SOILS

Map Unit Name (Series and Phase): <u>Symrna fine sand & Placid fine sand, depressional</u>	Drainage Class: <u>IVw, IIIw</u> Circle				
Taxonomy (Subgroup): _____	Field Observations Confirm Mapped Type? Yes No				
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Size/Contrast	Texture, Concretions, Structure, etc.
0-4	A-11	N 2/0			Fine sand
4-7	A-12	10YR 4/1		10YR 3/1	Fine sand
0-14	A-11	10YR 2/1			Black fine sand
14-24	A-12	10YR 3/1			Dk. gray fine sand
Hydric Soil Indicators:					
☒ Histosol	☒ Reducing Conditions	☒ High Organic Content in Surface Layer in Sandy Soils			
☐ Histic Epipedon	☒ Gleyed or Low-Chroma Colors	☐ Listed on National Hydric Soils List			
☐ Sulfidic Odor	☒ Concretions	☐ Listed on Local Hydric Soils List			
☒ Aquic Moisture Regime	☐ Organic Streaking in Sandy Soils	☐ Other (explain in remarks)			
Remarks: _____					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? ☒ Yes ☐ No	Is this Sampling Point Within a Wetland? ☒ Yes ☐ No	
Wetland Hydrology Present? ☒ Yes ☐ No		
Hydric Soils Present? ☒ Yes ☐ No		
Remarks: _____		

Project Name/No.: 063-7654
 Applicant: OUC County/State: Osceola Co, FL
 Date: 4/2/07 By: M. Arrants, N. Goddard

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Do Normal Circumstances exist on the site	Yes	No	Community ID: <u>FLUCFCS 641 –Freshwater marsh</u>
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Transect ID: <u>Wetland 219-A</u>
Is the area a potential Problem Area?	Yes	No	Plot ID: _____

VEGETATION

1.	<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>	9.	<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>
1.	<u>Salix caroliniana</u>	<u>S</u>	<u>OBL</u>	9.	_____	_____	_____
2.	<u>Ludwigia peruviana</u>	<u>S</u>	<u>OBL</u>	10.	_____	_____	_____
3.	<u>Cephalanthus occidentalis</u>	<u>S</u>	<u>OBL</u>	11.	_____	_____	_____
4.	<u>Justicia americana</u>	<u>H</u>	<u>OBL</u>	12.	_____	_____	_____
5.	<u>Phyla nodiflora</u>	<u>H</u>	<u>OBL</u>	13.	_____	_____	_____
6.	<u>Polygonum sp.</u>	<u>H</u>	<u>OBL</u>	14.	_____	_____	_____
7.	<u>Alternanthera philoxeroides</u>	<u>H</u>	<u>OBL</u>	15.	_____	_____	_____
8.	<u>Panicum repens</u>	<u>H</u>	<u>FACW-</u>	16.	_____	_____	_____

Percent of Dominant Species that are OBL, FACW, or FAC (except FAC+). 8/8 = 100%

Remarks:

HYDROLOGY

____ Recorded Data (Describe in Remarks): ____ Stream, Lake, or Tide Gage ☒ Aerial Photographs ____ Other ☒ No Recorded Data Available	Wetland Hydrology Indicators: <table style="width: 100%;"> <tr><td>____</td><td>Inundated</td></tr> <tr><td><u>X</u></td><td>Saturated in Upper 12 inches</td></tr> <tr><td>____</td><td>Water Marks</td></tr> <tr><td>____</td><td>Drift Lines</td></tr> <tr><td>____</td><td>Sediment Deposits</td></tr> <tr><td><u>X</u></td><td>Drainage Patterns in Wetlands</td></tr> <tr><td>____</td><td>Oxidized Root Channels in Upper 12 Inches</td></tr> <tr><td>____</td><td>Water-Stained Leaves</td></tr> <tr><td><u>X</u></td><td>Local Soil Survey Data</td></tr> <tr><td>____</td><td>Other (Explain in Remarks)</td></tr> </table>	____	Inundated	<u>X</u>	Saturated in Upper 12 inches	____	Water Marks	____	Drift Lines	____	Sediment Deposits	<u>X</u>	Drainage Patterns in Wetlands	____	Oxidized Root Channels in Upper 12 Inches	____	Water-Stained Leaves	<u>X</u>	Local Soil Survey Data	____	Other (Explain in Remarks)
____	Inundated																				
<u>X</u>	Saturated in Upper 12 inches																				
____	Water Marks																				
____	Drift Lines																				
____	Sediment Deposits																				
<u>X</u>	Drainage Patterns in Wetlands																				
____	Oxidized Root Channels in Upper 12 Inches																				
____	Water-Stained Leaves																				
<u>X</u>	Local Soil Survey Data																				
____	Other (Explain in Remarks)																				
Field Observations: Depth of Surface Water: <u>0</u> (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: <u><12"</u> (in.)																					
Remarks:																					

SOILS

Map Unit Name:	Holopaw Fine Sand	Drainage Class:	Poorly drained
Taxonomy (Subgroup):		Field Observations Confirm Mapped Type?	Yes No

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Rhizospheres, etc.
0-3	A	10YR 3/2			Fine sand
3-8	A	10YR 4/1			Fine sand
8-19	A	10 YR 7/1	10YR 5/6		Fine sand

Hydric Soil Indicators:	
☐ Histosol	☐ Concretions
☐ Histic Epipedon	☐ High Organic Content in Surface Layer
☐ Sulfidic Odor	☐ Organic Streaking
☐ Probable Aquic Moisture Regime	☐ Listed in Local Hydric Soils List
☐ Reducing Conditions	☐ Listed on National Hydric Soils Lists
☒ Gleyed or Low-Chroma Colors	☐ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	Is this Sampling Point Within a Wetland? Yes No
Hydric Soils Present?	Yes No	
Wetland Hydrology Present?	Yes No	

Remarks:

Project Name/No.: 063-7654
 Applicant: OUC County/State: Osceola Co, FL
 Date: 4/2/07 By: M. Arrants, N. Goddard

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Do Normal Circumstances exist on the site	Yes	No	Community ID: <u>FLUCFCS 510 – Channelized Stream</u>
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Transect ID: <u>Wetland 49-A</u>
Is the area a potential Problem Area?	Yes	No	Plot ID: _____

VEGETATION

1.	<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>	9.	<u>Dominant Plant Species</u>	<u>Stratum</u>	<u>Indicator</u>
	<u>Salix caroliniana</u>	<u>S</u>	<u>OBL</u>		<u>Lindernia grandiflora</u>	<u>H</u>	<u>OBL</u>
2.	<u>Ludwigia octovalvis</u>	<u>S</u>	<u>OBL</u>	10.	<u>Sambucus canadensis</u>	<u>S</u>	<u>FACW-</u>
3.	<u>Alternanthera philoxeroides</u>	<u>H</u>	<u>OBL</u>	11.	_____	_____	_____
4.	<u>Panicum repens</u>	<u>H</u>	<u>FACW-</u>	12.	_____	_____	_____
5.	<u>Ludwigia peruviana</u>	<u>S</u>	<u>OBL</u>	13.	_____	_____	_____
6.	<u>Polygonum sp.</u>	<u>H</u>	<u>OBL</u>	14.	_____	_____	_____
7.	<u>Bacopa monnieri</u>	<u>H</u>	<u>OBL</u>	15.	_____	_____	_____
8.	<u>Typha latifolia</u>	<u>H</u>	_____	16.	_____	_____	_____

Percent of Dominant Species that are OBL, FACW, or FAC (except FAC+). 10/10 = 100%

Remarks:

HYDROLOGY

☐ Recorded Data (Describe in Remarks): ☐ Stream, Lake, or Tide Gage ☐ Aerial Photographs ☐ Other ☒ No Recorded Data Available	Wetland Hydrology Indicators: ☒ Inundated ☒ Saturated in Upper 12 inches ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☒ Drainage Patterns in Wetlands ☐ Oxidized Root Channels in Upper 12 Inches ☐ Water-Stained Leaves ☒ Local Soil Survey Data ☐ Other (Explain in Remarks)
Field Observations: Depth of Surface Water: <u>2 – 4'</u> (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: <u>0</u> (in.)	
Remarks:	

SOILS

Map Unit Name:	Holopaw fine sand	Drainage Class:	Poorly drained
Taxonomy (Subgroup):		Field Observations Confirm Mapped Type?	Yes No

Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Rhizospheres, etc.
0-3	A	10YR 3/2			Fine sand
3-8	A	10YR 4/1			Fine sand
8-19	A	10 YR 7/1	10YR 5/6		Fine sand

Hydric Soil Indicators:

☐ Histosol	☐ Concretions
☐ Histic Epipedon	☐ High Organic Content in Surface Layer
☐ Sulfidic Odor	☐ Organic Streaking
☐ Probable Aquic Moisture Regime	☐ Listed in Local Hydric Soils List
☐ Reducing Conditions	☐ Listed on National Hydric Soils Lists
☒ Gleyed or Low-Chroma Colors	☐ Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No	Is this Sampling Point Within a Wetland?	Yes No
Hydric Soils Present?	Yes No		
Wetland Hydrology Present?	Yes No		

Remarks:

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION: Osceola Substation to Cane Island Tap

State: FL County/parish/borough: Osceola City:

Center coordinates of site (lat/long in degree decimal format): Lat. 28.32106° **N**, Long. -81.557819° **W**.

Universal Transverse Mercator:

Name of nearest waterbody: Reedy Creek

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Lake Marion

Name of watershed or Hydrologic Unit Code (HUC): Reedy Creek

☐ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: 4-29-08

☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

☐ Waters subject to the ebb and flow of the tide.

☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- ☐ TNWs, including territorial seas
- ☐ Wetlands adjacent to TNWs
- ☐ Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
- ☐ Non-RPWs that flow directly or indirectly into TNWs
- ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- ☒ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- ☐ Impoundments of jurisdictional waters
- ☒ Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: linear feet: width (ft) and/or acres.

Wetlands: 24.19 acres.

c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual

Elevation of established OHWM (if known): .

2. Non-regulated waters/wetlands (check if applicable):³

- ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **Wetlands 197A, 198A, 198B, 199A, 200A, 201A, 203A, 205A, 212D, 213B, 214A, and 214B (10.71 acres) are stormwater ponds or other systems that were determined to be isolated from other wetlands, and were considered to be non-jurisdictional.**

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**

Identify TNW: _____.

Summarize rationale supporting determination: _____.

2. **Wetland adjacent to TNW**

Summarize rationale supporting conclusion that wetland is “adjacent”: _____.

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are “relatively permanent waters” (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

(i) **General Area Conditions:**

Watershed size: **Pick List**

Drainage area: **Pick List**

Average annual rainfall: _____ inches

Average annual snowfall: _____ inches

(ii) **Physical Characteristics:**

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.

☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: _____.

Identify flow route to TNW⁵: _____.

Tributary stream order, if known: _____.

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):

Average width: feet
Average depth: feet
Average side slopes: **Pick List**.

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .

Presence of run/riffle/pool complexes. Explain: .

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime: .

Other information on duration and volume: .

Surface flow is: **Pick List**. Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

☐ Dye (or other) test performed: .

Tributary has (check all that apply):

☐ Bed and banks	
☐ OHWM ⁶ (check all indicators that apply):	
☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	
☐ Discontinuous OHWM. ⁷ Explain: .	

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☒ High Tide Line indicated by:	☒ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: .

Identify specific pollutants, if known: .

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
 - ☐ Federally Listed species. Explain findings: .
 - ☐ Fish/spawn areas. Explain findings: .
 - ☐ Other environmentally-sensitive species. Explain findings: .
 - ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

- Wetland size: acres
- Wetland type. Explain: .
- Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
 - ☐ Discrete wetland hydrologic connection. Explain: .
 - ☐ Ecological connection. Explain: .
 - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain: .
- ☐ Habitat for:
 - ☐ Federally Listed species. Explain findings: .
 - ☐ Fish/spawn areas. Explain findings: .
 - ☐ Other environmentally-sensitive species. Explain findings: .
 - ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately () acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: Wetlands 196C-A, 196C-B, 196E-A, 196F-A, 196F-B, 198-C, 199B, 199C, 202A, 202B, 204A, 206A, 206B, 206C, 207A, 207B, 208A, 210A, 212A, 212B, 212C, 213A, 218A, 218B, 219A, and 49A are located within the Reedy Creek watershed, and are wetlands adjacent to but not directly abutting Reedy Creek, an RPW that flows directly into several TNWs. Reedy Creek originates in the vicinity of Reedy Lake immediately west of Walt Disney World, and is a major tributary to the Kissimmee chain of lakes (Lake Hatchineha, Lake Tohopekaliga, East Lake Tohopekaliga, Cypress Lake, and Lake Kissimmee, all TNWs). Swamps surrounding Reedy Creek, including the wetlands within the review area are contiguous with these TNWs and Lake Marion, a TNW located west of the Kissimmee chain of lakes. Because Reedy Creek and adjacent wetlands are a major tributary to these lakes, flow volume, flow frequency, and flow duration of Reedy Creek is significant to the water levels of these lakes. Reedy Creek provides significant habitat and life cycle support functions for wildlife present in the TNWs, and provides nutrients and organic carbon to downstream foodwebs. Reedy Creek contributes significantly to the physical, chemical, and biological integrity of the TNWs.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
☐ TNWs: linear feet width (ft), Or, acres.
☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

- ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
- ☐ Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
- Identify type(s) of waters: .

3. **Non-RPWs⁸ that flow directly or indirectly into TNWs.**

- ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
- Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
- ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
- ☐ Wetlands directly abutting an RPW where tributaries typically flow “seasonally.” Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- ☒ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **24.19** acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.⁹**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- ☐ Demonstrate that impoundment was created from “waters of the U.S.,” or
- ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
- ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
- ☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ Interstate isolated waters. Explain: .
- ☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
- ☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 - ☐ Prior to the Jan 2001 Supreme Court decision in “SWANCC,” the review area would have been regulated based solely on the “Migratory Bird Rule” (MBR).
- ☒ Waters do not meet the “Significant Nexus” standard, where such a finding is required for jurisdiction. Explain: **Wetlands 197A, 198A, 198B, 199A, 200A, 201A, 203A, 205A, 212D, 213B, 214A, and 214B were determined to be isolated from other wetlands, and did not appear to contribute substantially to Reedy Creek or its watershed.**
- ☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the “Significant Nexus” standard, where such a finding is required for jurisdiction (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☒ Wetlands: 10.71 acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - ☐ Office concurs with data sheets/delineation report.
 - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters’ study: .
- ☒ U.S. Geological Survey Hydrologic Atlas: .
 - ☐ USGS NHD data.
 - ☒ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: 1:24000, Intercession City.
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
- ☐ National wetlands inventory map(s). Cite name: .
- ☐ State/Local wetland inventory map(s): .
- ☐ FEMA/FIRM maps: .

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

- ☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): Google Earth, 2008.
or ☐ Other (Name & Date): .
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☒ Other information (please specify): 1:150,000 USGS topographic map, Florida Atlas & Gazetteer, 2003.

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

APPENDIX D

UMAM SPREADSHEETS

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

Site/Project Name OUC- Osceola to Cane Island Tap		Application Number		Assessment Area Name or Number Wetlands 198-B, 198-C, 199-A, 206-B, 213-B	
FLUCCs code 511 - Ditches		Further classification (optional)		Impact or Mitigation Site? Impact	Assessment Area Size 0.74 acres
Basin/Watershed Name/Number	Affected Waterbody (Class) III		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 The ditches are isolated and are located along highway ROWs. They do not appear to connect with other wetlands in the ROW.					
Assessment area description There are three ditched areas occurring along the transmission corridor; none had water at the time of the site visit. They are vegetated with a mixture of species such as bahiagrass (<i>Paspalum notatum</i>), alexandergrass (<i>Brachiaria plantaginea</i>), nutrushes (<i>Scleria</i> spp.), and torpedo grass (<i>Panicum repens</i>).					
Significant nearby features highways, transmission lines			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions drainage			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, deer, and feral hogs			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Occasional use by wading birds such as white ibis (<i>Eudocimus albus</i>) (SSC), wood stork (<i>Mycteria americana</i>) (E), and little blue heron (<i>Egretta caerulea</i>) (SSC).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Nine-banded armadillo (<i>Dasypus novemcinctus</i>) burrows were observed at the time of the site visit.					
Additional relevant factors: 					
Assessment conducted by: M. Arrants			Assessment date(s): December-07		

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

Site/Project Name OUC- Osceola to Cane Island Tap	Application Number	Assessment Area Name or Number Wetlands 198-B, 198-C, 199-A, 206-B, 213-B (FLUCFCS 511)
Impact or Mitigation Existing Condition	Assessment conducted by: M. Arrants	Assessment date: Dec-07

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
--	---	---	--	---

.500(6)(a) Location and Landscape Support w/o pres or current 4 with 0	Location and landscape support variable is decreased due to proximity of highways and transmission line ROW. Please see the following page for the individual parameter scores.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 5 with 0	The water environment of the ditches exhibits mostly typical conditions; however impacts are present due to drought. Please see the following page for the individual parameter scores.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 5 with 0	Wetlands are dominated by a mixture of native and exotic/invasive species. Please see the following page for the individual parameter scores.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres
0.47 0

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

For impact assessment areas
FL = delta x acres =

Delta = [with-current]
-0.47

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

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

	Location Landscape Support	10	7	4	0	PARAMETER SCORE
a	Quality of habitats outside area for wildlife	fulfill optimal life history requirements of wildlife	fulfill most but not all requirement	habitat availability outside area fair but excludes some wildlife	no habitats available outside site to support wildlife	4
b	Invasive exotics and other exotics	Not present	some invasive exotics in plant community	many invasive exotics and other exotics in community	plant community consists mainly of invasive exotics	4
c	Wildlife access to and from assessment area and other areas	unobstructed	partially limited	substantially limited	access completely blocked	4
d	Areas downstream of assessment area	beneficial and unobstructed	benefits partially limited by either distance or obstructions	benefits substantially limited by either distance or obstructions	no benefits to downstream areas	4
e	Effects of land use outside of area on wildlife	no ill effects	minimal impacts	substantial impacts	severe impacts	4
f	Hydrologically connected areas downstream of area	not limited by hydrological flow restriction	partially limited	substantially limited	no benefits to downstream areas	4
g	Dependency of downstream areas on assessment area	Downstream areas critically dependant and would suffer from alterations to hydrology	Downstream areas significantly dependent on assessment area	minimal benefits from assessment area	little or no benefit to downstream areas	4
h	For upland areas, location in relation to benefit and protection of wetland	upland provides optimal protection	upland provides some protection	upland provides little protection	upland provides no protection of wetland	N/A

LOCATION/LANDSCAPE SCORE
4

	Water Environment	10	7	4	0	PARAMETER SCORE
a	Water levels and flow	appropriate water levels considering season, tidal cycle, and weather	water level slightly higher or lower than appropriate	water levels and flow are moderately higher or lower than appropriate	water levels or flow exhibit an extreme degree of deviation	4
b	Water level indicators in relation to type of system being evaluatec	distinct water level indicators	indicators not as distinct, but still consistent with expected	indicators not distinct, and not consistent with expected	indicators not present or are greatly inconsistent with expected	6
c	Soil moisture for system type	appropriate soil type and moisture	soil oxidation or subsidence is minimal, soil drier than expected	soil moisture has deviated from appropriate for system and season	strong evidence of substantial soil desiccation, oxidation, or subsidence	7
d	Soil erosion or deposition patterns	typical, not indicative of altered flow rates	patterns indicate minor alterations in flow rates	patterns strongly atypical and indicate alterations in flow rates	patterns greatly atypical indicating alterations in flow rates	6
e	Evidence of fire history	typical for frequency and severity	indicative that frequency or severity may be greater than expected	indicative of much greater frequency and severity	great deviation from typical	N/A
f	Vegetation or benthic community zonation of all strata	appropriate for the type of system being evaluated	zonation in some strata inappropriate for system type	zonation in most strata inappropriate for system type	all strata inappropriate for system type	6
g	Signs of hydrologic stress on vegetation	no signs of stress on vegetation	slightly greater mortality of vegetation, signs of stress	strong evidence of greater than normal mortality	vegetation has strong evidence of much greater than normal mortality	6
h	Evidence of use by animals with specific hydrological requirements	expected for site hydrology	less than expected evidence of animals	greatly reduced evidence of animals with specific requirements	lacking those species with specific requirements	5
i	Composition of wetland plants with respect to tolerance	plant community not characterized by species tolerant to quality degradation	some of community consists of tolerant species	most of community composed of tolerant species	community predominantly consists of tolerant species	4
j	Direct observation of standing water with respect to discoloration, turbidity, or oil sheen	no indicators of water quality degradation	slight indication of water quality degradation	moderate water quality degradation such as discoloration, turbidity, or oil sheen	significant water quality degradation	4
k	Existing water quality data indicates conditions supporting ecological value	water quality indicates optimal conditions for community type	slight deviation from what is normal	moderate deviation from the normal	severe deviation from the normal	N/A
l	Water depth, wave energy, currents, and light penetration	optimal for community type	generally sufficient for type of community	not well suited for the type of community	inappropriate for community type	4

WATER ENVIRONMENT SCORE
5

	Vegetation Community Structure	10	7	4	0	PARAMETER SCORE
a	Plant cover - desirable species in canopy, shrub, or ground stratum	all or nearly all plant cover is appropriate	majority of plant cover is appropriate	majority of plant cover is inappropriate	no appropriate or desirable species	4
b	Presence of invasive exotics or other exotics	no invasives present	minimal invasives present	majority of plant cover is invasive exotic or exotic	high presence of cover by invasives	4
c	Evidence of regeneration or recruitment	strong evidence of regeneration and or recruitment	near normal evidence of regeneration or recruitment	minimal evidence of regeneration or recruitment	no evidence of regeneration or recruitment	4
d	Age and size distribution	typical of the system	slightly atypical age and size distribution	atypical distribution and indicative of permanent deviation	high percentage of dead or dying vegetation	6
e	Density and quality of coarse woody debris, snags, den and cavities	optimal structural habitat for system type	adequate structural habitat for system type	either not present or greater than normal because of poor plant community health	either not present or greater than normal because of dead or dying plant community	N/A
f	Plant condition- evidence of chlorotic or spindly growth or insect damage	good plant condition no evidence of abnormalities	generally good plant condition with little evidence stress	generally poor plant condition with evidence of stress	very poor plant condition	6
g	Land management practices for long-term viability of plant community	optimal	generally appropriate, but there may be some fire suppression or water control	partial removal or alteration of natural structures or introduction of artificial features	removal or alteration of natural structure intro of ditches or furrows	N/A
h	Topographic features, such as refugia ponds, creek channels, flats or hummocks	all present and normal for area being assessed	slightly less than optimal for area being assessed	reduction in extent substantial	lack of features being assessed	N/A
i	Submerged aquatic plant communities are present, any evidence of siltation or algal growth	no evidence of siltation or algal growth	minor degree of siltation or algal growth	moderate degree of siltation or algal growth	high degree of siltation or algal growth	6
j	If upland mitigation area, life history support for fish and wildlife	plant community provides optimal level of habitat	plant community provides adequate level of habitat	plant community provides moderate level of habitat	little or no habitat	N/A

VEGETATION SCORE
5

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

Site/Project Name OUC- Osceola to Cane Island Tap		Application Number		Assessment Area Name or Number Wetlands 196E-A, 197A, 198A, 200A, 201A, 203A, 205A, 206C, 207A, 210A, 212B, 213A, 214A, 214B	
FLUCCs code 534 - Reservoirs		Further classification (optional)		Impact or Mitigation Site? Impact	Assessment Area Size 18.4 acres
Basin/Watershed Name/Number		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 Wetlands are isolated, located within road and highway areas, occasionally bordered by forested areas. Some are hydrologically connected to mixed forested wetlands and cypress forests.					
Assessment area description Small reservoirs exist along the transmission corridor ROW and serve as stormwater retention basins. The banks and littoral zones are vegetated with a mix of species that include torpedo grass (<i>Panicum repens</i>), cattail (<i>Typha</i> spp.), lemon bacopa (<i>Bacopa caroliniana</i>), beaksedge (<i>Rhynchospora</i> spp.), red maple (<i>Acer rubrum</i>), wax myrtle (<i>Myrica cerifera</i>), sandweed (<i>Hypericum fasciculatum</i>), bulltounge arrowhead (<i>Sagittaria lancifolia</i>), southern watergrass (<i>Luziola flutans</i>), watershield (<i>Brasenia schreberi</i>), water lily (<i>Nymphaea</i> sp.) bushy bluestem (<i>Andropogon glomeratus</i>), and broomsedge bluestem (<i>Andropogon virginicus</i>).					
Significant nearby features highways, transmission lines		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Water treatment and storage		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, deer, and feral hogs		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Occasional use by wading birds such as white ibis (<i>Eudocimus albus</i>) (SSC), wood stork (<i>Mycteria americana</i>) (E), and little blue heron (<i>Egretta caerulea</i>) (SSC).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Largemouth bass (<i>Micropterus salmoides</i>), Wilson's snipe (<i>Gallinago gallinago</i>), southern leopard frog (<i>Rana sphenoccephala</i>), and raccoon (<i>Procyon lotor</i>) were observed during the site visit.					
Additional relevant factors:					
Assessment conducted by: M. Arrants		Assessment date(s): December-07			

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

Site/Project Name OUC- Osceola to Cane Island Tap	Application Number	Assessment Area Name or Number Wetlands 196E-A, 197A, 198A, 200A, 201A, 203A, 205A, 206C-1, 207A, 210A, 212B, 213A, 214A, 214B (FLUCFCS 530)
Impact or Mitigation Impact	Assessment conducted by: M. Arrants	Assessment date: Dec-07

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 4 with 0	Location and landscape support variable is decreased due to location within road and highway areas. Please see the following page for the individual parameter scores.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 5 with 0	The water environment of the reservoirs exhibits mostly typical conditions; however some impacts are present due to drought. Please see the following page for the individual parameter scores.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 6 with 0	Wetlands are dominated by a mixture of native and exotic/invasive species. Please see the following page for the individual parameter scores.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.50	0

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

For impact assessment areas
FL = delta x acres = (0.15 x 0.50) = 0.08

Delta = [with-current]
-0.50

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

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

Uniform Mitigation Assessment Method - Individual Parameter Scores

SITE: OUC-Osceola -Cane Island Tap

OVERALL UMAM SCORE
0.50

	Location Landscape Support	10	7	4	0	PARAMETER SCORE
a	Quality of habitats outside area for wildlife	fulfill optimal life history requirements of wildlife	fulfill most but not all requirements	habitat availability outside area fair but excludes some wildlife	no habitats available outside site to support wildlife	4
b	Invasive exotics and other exotics	Not present	some invasive exotics in plant community	many invasive exotics and other exotics in community	plant community consists mainly of invasive exotics	4
c	Wildlife access to and from assessment area and other areas	unobstructed	partially limited	substantially limited	access completely blocked	4
d	Areas downstream of assessment area	beneficial and unobstructed	benefits partially limited by either distance or obstructions	benefits substantially limited by either distance or obstructions	no benefits to downstream areas	4
e	Effects of land use outside of area on wildlife	no ill effects	minimal impacts	substantial impacts	severe impacts	4
f	Hydrologically connected areas downstream of area	not limited by hydrological flow restrictions	partially limited	substantially limited	no benefits to downstream areas	4
g	Dependency of downstream areas on assessment area	Downstream areas critically dependant and would suffer from alterations to hydrology	Downstream areas significantly dependent on assessment area	minimal benefits from assessment area	little or no benefit to downstream areas	4
h	For upland areas, location in relation to benefit and protection of wetland	upland provides optimal protection	upland provides some protection	upland provides little protection	upland provides no protection of wetland	N/A

LOCATION/LANDSCAPE SCORE
4.0

	Water Environment	10	7	4	0	PARAMETER SCORE
a	Water levels and flow	appropriate water levels considering season, tidal cycle, and weather	water level slightly higher or lower than appropriate	water levels and flow are moderately higher or lower than appropriate	water levels or flow exhibit an extreme degree of deviation	4
b	Water level indicators in relation to type of system being evaluated	distinct water level indicators	indicators not as distinct, but still consistent with expected	indicators not distinct, and not consistent with expected	indicators not present or are greatly inconsistent with expected	5
c	Soil moisture for system type	appropriate soil type and moisture	soil oxidation or subsidence is minimal, soils drier than expected	soil moisture has deviated from appropriate for system and season	strong evidence of substantial soil desiccation, oxidation, or subsidence	4
d	Soil erosion or deposition patterns	typical, not indicative of altered flow rates	patterns indicate minor alterations in flow rates	patterns strongly atypical and indicate alterations in flow rates	patterns greatly atypical indicating alterations in flow rates	6
e	Evidence of fire history	typical for frequency and severity	indicative that frequency or severity may be greater than expected	indicative of much greater frequency and severity	great deviation from typical	N/A
f	Vegetation or benthic community zonation of all strata	appropriate for the type of system being evaluated	zonation in some strata inappropriate for system type	zonation in most strata inappropriate for system type	all strata inappropriate for system type	5
g	Signs of hydrologic stress on vegetation	no signs of stress on vegetation	slightly greater mortality of vegetation, signs of stress	strong evidence of greater than normal mortality	vegetation has strong evidence of much greater than normal mortality	5
h	Evidence of use by animals with specific hydrological requirements	expected for site hydrology	less than expected evidence of animals	greatly reduced evidence of animals with specific requirements	lacking those species with specific requirements	6
i	Composition of wetland plants with respect to tolerance	plant community not characterized by species tolerant to quality degradation	some of community consists of tolerant species	most of community composed of tolerant species	community predominantly consists of tolerant species	6
j	Direct observation of standing water with respect to discoloration, turbidity, or oil sheen	no indicators of water quality degradation	slight indication of water quality degradation	moderate water quality degradation such as discoloration, turbidity, or oil sheen	significant water quality degradation	4
k	Existing water quality data indicates conditions supporting ecological value	water quality indicates optimal conditions for community type	slight deviation from what is normal	moderate deviation from the normal	severe deviation from the normal	N/A
l	Water depth, wave energy, currents, and light penetration	optimal for community type	generally sufficient for type of community	not well suited for the type of community	inappropriate for community type	6

WATER ENVIRONMENT SCORE
5

	Vegetation Community Structure	10	7	4	0	PARAMETER SCORE
a	Plant cover - desirable species in canopy, shrub, or ground stratum	all or nearly all plant cover is appropriate	majority of plant cover is appropriate	majority of plant cover is inappropriate	no appropriate or desirable species	7
b	Presence of invasive exotics or other exotics	no invasives present	minimal invasives present	majority of plant cover is invasive exotic or exotic	high presence of cover by invasives	5
c	Evidence of regeneration or recruitment	strong evidence of regeneration and or recruitment	near normal evidence of regeneration or recruitment	minimal evidence of regeneration or recruitment	no evidence of regeneration or recruitment	7
d	Age and size distribution	typical of the system	slightly atypical age and size distribution	atypical distribution and indicative of permanent deviation	high percentage of dead or dying vegetation	8
e	Density and quality of coarse woody debris, snags, den and cavities	optimal structural habitat for system type	adequate structural habitat for system type	either not present or greater than normal because of poor plant community health	either not present or greater than normal because of dead or dying plant community	N/A
f	Plant condition- evidence of chlorotic or spindly growth or insect damage	good plant condition no evidence of abnormalities	generally good plant condition with little evidence stress	generally poor plant condition with evidence of stress	very poor plant condition	7
g	Land management practices for long-term viability of plant community	optimal	generally appropriate, but there may be some fire suppression or water control	partial removal or alteration of natural structures or introduction of artificial features	removal or alteration of natural structure intro of ditches or furrows	N/A
h	Topographic features, such as refugia ponds, creek channels, flats or hummocks	all present and normal for area being assessed	slightly less than optimal for area being assessed	reduction in extent substantial	lack of features being assessed	N/A
i	Submerged aquatic plant communities are present, any evidence of siltation or algal growth	no evidence of siltation or algal growth	minor degree of siltation or algal growth	moderate degree of siltation or algal growth	high degree of siltation or algal growth	4
j	If upland mitigation area, life history support for fish and wildlife	plant community provides optimal level of habitat	plant community provides adequate level of habitat	plant community provides moderate level of habitat	little or no habitat	N/A

VEGETATION SCORE
6

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

Site/Project Name OUC Cane Island Tap to Taft Substation		Application Number		Assessment Area Name or Number Wetland 49-A	
FLUCFCS code 510		Further classification (optional)		Impact or Mitigation Site? Baseline	Assessment Area Size
Basin/Watershed Name/Number Bonnet Creek		Affected Waterbody (Class)		Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) none	
Geographic relationship to any hydrologic connection with wetlands, other surface water, uplands Wetland is a channelized creek that serves as a drainage canal					
Assessment area description Wetland is a channelized stream with improved banks. Flora observed include <i>Salix caroliniana</i> , <i>Ludwigia octovalvis</i> , <i>Alternanthera philoxeroides</i> , <i>Panicum repens</i> , <i>Ludwigia peruviana</i> , <i>Polygonum</i> spp., <i>Bacopa monnieri</i> , and <i>Typha latifolia</i>					
Significant nearby features Transmission Lines, urban development and major roadways			Uniqueness (considering the relative rarity in relation to the regional Not unique		
Functions Drainage, wildlife habitat			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 fishes, herpetofauna, raccoons, avifauna			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the Possible occasional use by foraging wading birds: White ibis (SSC), little blue heron (SSC), snowy egret (SSC), tricolored heron (SSC), wood stork (E)		
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: M. Arrants, N Goddard			Assessment date(s): April-07		

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

Site/Project Name OUC Cane Island Tap to Taft Substation	Application Number	Assessment Area Name or Number 49-A Bonnet Creek
Impact or Mitigation Baseline	Assessment conducted by: M Arrants, N. Goddard	Assessment date: April-07

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 N/A	Provides drainage for surrounding areas (A-5, B-7, C-5, D-5, E-4, F-8)
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with 5 N/A	Provides little beneficial habitat due to channelized conditions (A-6, B-7, C-6, D-3, E-n/a, F-6, G-7, H-7, I-5, J-4)
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with 5 N/A	Vegetative community and benthic communities are poor due to land use and canal design (A-6, B-7, C-6, D-5, E-0, F-7, G-2, H-4, I-4)

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

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

For impact assessment areas
FL = delta x acres =

Delta = [with-current]
No impact

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 OUC- Osceola to Cane Island Tap		Application Number		Assessment Area Name or Number Wetland 212A	
FLUCCs code 625 - Hydric Pine Flatwoods		Further classification (optional)		Impact or Mitigation Site? Impact	
Assessment Area Size 0.65 acres					
Basin/Watershed Name/Number		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 The wetland is located within the transmission line ROW adjacent to the highway and commercial areas. It is not hydrologically connected to any other wetlands within the transmission line ROW. The wetland is intersected by a drainage ditch.					
Assessment area description There is one hydric pine flatwoods wetland along the ROW. This habitat is dominated by cabbage palm (<i>Sabal palmetto</i>), slash pine (<i>Pinus elliottii</i>), pond pine (<i>Pinus serotina</i>), red maple (<i>Acer rubrum</i>), water oak (<i>Quercus nigra</i>), wax myrtle (<i>Myrica cerifera</i>), buttonbush (<i>Cephalanthus occidentalis</i>), Canada goldenrod (<i>Solidago canadensis</i>), gallberry (<i>Ilex glabra</i>), and sweetbay (<i>Magnolia virginiana</i>).					
Significant nearby features highways, transmission lines		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Wildlife habitat, natural water treatment and storage		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, deer, and feral hogs		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) None			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): No wildlife was observed during the site visit.					
Additional relevant factors:					
Assessment conducted by: M. Arrants		Assessment date(s): 12/12/2007- 12/13/2007			

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

Site/Project Name OUC- Osceola to Cane Island Tap	Application Number	Assessment Area Name or Number Wetland 212A (FLUCFCS 625)
Impact or Mitigation Existing Condition	Assessment conducted by: M. Arrants	Assessment date: Dec-07

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 0	Location and landscape support variable is decreased due to proximity of roadways, the Osceola substation, and transmission lines. Some wetlands are hydrologically connected to forested systems. Please see the following page for the individual parameter scores.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 7 with 0	The water environment is impacted due to drought conditions. Please see the following page for the individual parameter scores.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 7 with 0	Wetlands are dominated by native species with several exotic/nuisance species. Please see the following page for the individual parameter scores.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres with
0.67 0

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

For impact assessment areas
FL = delta x acres

Delta = [with-current]
-0.67

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

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

	Location Landscape Support	10	7	4	0	PARAMETER SCORE
a	Quality of habitats outside area for wildlife	fulfill optimal life history requirements of wildlife	fulfill most but not all requirement	habitat availability outside area fair but excludes some wildlife	no habitats available outside site to support wildlife	7
b	Invasive exotics and other exotics	Not present	some invasive exotics in plant community	many invasive exotics and other exotics in community	plant community consists mainly of invasive exotics	5
c	Wildlife access to and from assessment area and other areas	unobstructed	partially limited	substantially limited	access completely blocked	7
d	Areas downstream of assessment area	beneficial and unobstructed	benefits partially limited by either distance or obstructions	benefits substantially limited by either distance or obstructions	no benefits to downstream areas	7
e	Effects of land use outside of area on wildlife	no ill effects	minimal impacts	substantial impacts	severe impacts	6
f	Hydrologically connected areas downstream of area	not limited by hydrological flow restriction	partially limited	substantially limited	no benefits to downstream areas	6
g	Dependency of downstream areas on assessment area	Downstream areas critically dependant and would suffer from alterations to hydrology	Downstream areas significantly dependent on assessment area	minimal benefits from assessment area	little or no benefit to downstream areas	6
h	For upland areas, location in relation to benefit and protection of wetland	upland provides optimal protection	upland provides some protection	upland provides little protection	upland provides no protection of wetland	N/A

LOCATION/LANDSCAPE SCORE
6

	Water Environment	10	7	4	0	PARAMETER SCORE
a	Water levels and flow	appropriate water levels considering season, tidal cycle, and weather	water level slightly higher or lower than appropriate	water levels and flow are moderately higher or lower than appropriate	water levels or flow exhibit an extreme degree of deviation	6
b	Water level indicators in relation to type of system being evaluatec	distinct water level indicators	indicators not as distinct, but still consistent with expected	indicators not distinct, and not consistent with expected	indicators not present or are greatly inconsistent with expected	7
c	Soil moisture for system type	appropriate soil type and moisture	soil oxidation or subsidence is minimal, soil drier than expected	soil moisture has deviated from appropriate for system and season	strong evidence of substantial soil desiccation, oxidation, or subsidence	6
d	Soil erosion or deposition patterns	typical, not indicative of altered flow rates	patterns indicate minor alterations in flow rates	patterns strongly atypical and indicate alterations in flow rates	patterns greatly atypical indicating alterations in flow rates	7
e	Evidence of fire history	typical for frequency and severity	indicative that frequency or severity may be greater than expected	indicative of much greater frequency and severity	great deviation from typical	N/A
f	Vegetation or benthic community zonation of all strata	appropriate for the type of system being evaluated	zonation in some strata inappropriate for system type	zonation in most strata inappropriate for system type	all strata inappropriate for system type	7
g	Signs of hydrologic stress on vegetation	no signs of stress on vegetation	slightly greater mortality of vegetation, signs of stress	strong evidence of greater than normal mortality	vegetation has strong evidence of much greater than normal mortality	7
h	Evidence of use by animals with specific hydrological requirements	expected for site hydrology	less than expected evidence of animals	greatly reduced evidence of animals with specific requirements	lacking those species with specific requirement	7
i	Composition of wetland plants with respect to tolerance	plant community not characterized by species tolerant to quality degradation	some of community consists of tolerant species	most of community composed of tolerant species	community predominantly consists of tolerant species	7
j	Direct observation of standing water with respect to discoloration, turbidity, or oil sheen	no indicators of water quality degradation	slight indication of water quality degradation	moderate water quality degradation such as discoloration, turbidity, or oil sheen	significant water quality degradation	N/A
k	Existing water quality data indicates conditions supporting ecological value	water quality indicates optimal conditions for community type	slight deviation from what is normal	moderate deviation from the normal	severe deviation from the normal	N/A
l	Water depth, wave energy, currents, and light penetration	optimal for community type	generally sufficient for type of community	not well suited for the type of community	inappropriate for community type	N/A

WATER ENVIRONMENT SCORE
7

	Vegetation Community Structure	10	7	4	0	PARAMETER SCORE
a	Plant cover - desirable species in canopy, shrub, or ground stratum	all or nearly all plant cover is appropriate	majority of plant cover is appropriate	majority of plant cover is inappropriate	no appropriate or desirable species	6
b	Presence of invasive exotics or other exotics	no invasives present	minimal invasives present	majority of plant cover is invasive exotic or exotic	high presence of cover by invasives	5
c	Evidence of regeneration or recruitment	strong evidence of regeneration and or recruitment	near normal evidence of regeneration or recruitment	minimal evidence of regeneration or recruitment	no evidence of regeneration or recruitment	7
d	Age and size distribution	typical of the system	slightly atypical age and size distribution	atypical distribution and indicative of permanent deviation	high percentage of dead or dying vegetation	7
e	Density and quality of coarse woody debris, snags, den and cavities	optimal structural habitat for system type	adequate structural habitat for system type	either not present or greater than normal because of poor plant community health	either not present or greater than normal because of dead or dying plant community	N/A
f	Plant condition- evidence of chlorotic or spindly growth or insect damage	good plant condition no evidence of abnormalities	generally good plant condition with little evidence stress	generally poor plant condition with evidence of stress	very poor plant condition	7
g	Land management practices for long-term viability of plant community	optimal	generally appropriate, but there may be some fire suppression or water control	partial removal or alteration of natural structures or introduction of artificial features	removal or alteration of natural structure intro of ditches or furrows	7
h	Topographic features, such as refugia ponds, creek channels, flats or hummocks	all present and normal for area being assessed	slightly less than optimal for area being assessed	reduction in extent substantial	lack of features being assessed	7
i	Submerged aquatic plant communities are present, any evidence of siltation or algal growth	no evidence of siltation or algal growth	minor degree of siltation or algal growth	moderate degree of siltation or algal growth	high degree of siltation or algal growth	N/A
j	If upland mitigation area, life history support for fish and wildlife	plant community provides optimal level of habitat	plant community provides adequate level of habitat	plant community provides moderate level of habitat	little or no habitat	N/A

VEGETATION SCORE
7

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

Site/Project Name OUC- Osceola to Cane Island Tap		Application Number		Assessment Area Name or Number Wetlands 206A, 212C	
FLUCCs code 630 - Wetland Forested Mixed		Further classification (optional)		Impact or Mitigation Site? Impact	Assessment Area Size 3.3 acres
Basin/Watershed Name/Number		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 Mixed forested wetlands are located along the transmission line ROW. Wetland 212C is hydrologically connected to nearby freshwater marshes within the transmission line ROW and other forested wetlands. Wetland 206A appears to be isolated.					
Assessment area description Two parcels of mixed wetland forest occur along the ROW. These habitats are dominated by cabbage palm (<i>Sabal palmetto</i>), slash pine (<i>Pinus elliotii</i>), pond pine (<i>Pinus serotina</i>), cypress (<i>Taxodium distichum</i>), dahoon holly (<i>Ilex cassine</i>), red maple (<i>Acer rubrum</i>), ash (<i>Fraxinus</i> spp.), sweetbay (<i>Magnolia virginiana</i>), bladderwort (<i>Utricularia</i> spp.), and blackgum (<i>Nyssa sylvatica</i>).					
Significant nearby features highways, transmission lines			Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique		
Functions Wildlife habitat, natural water treatment and storage			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, deer, and feral hogs			Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Occasional use by wading birds such as white ibis (<i>Eudocimus albus</i>) (SSC), wood stork (<i>Mycteria americana</i>) (E), and little blue heron (<i>Egretta caerulea</i>) (SSC).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): White tailed deer (<i>Odocoileus virginianus</i>), gray fox (<i>Urocyon cinereoargenteus</i>), bobcat, (<i>Lynx rufus</i>), coyote (<i>Canis latrans</i>), raccoon (<i>Procyon lotor</i>), river otter (<i>Lutra canadensis</i>), nine banded armadillo (<i>Dasypus novemcinctus</i>), killdeer (<i>Charadrius vociferus</i>), wood duck (<i>Aix sponsa</i>), double crested cormorant (<i>Phalacrocorax auritus</i>), great blue heron (<i>Ardea herodias</i>), white ibis, glossy ibis (<i>Plegadis falcinellus</i>), great egret (<i>Casmerodius albus</i>), and wood stork were observed during the site visit.					
Additional relevant factors:					
Assessment conducted by: M. Arrants			Assessment date(s): 12/12/2007- 12/13/2007		

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

Site/Project Name OUC- Osceola to Cane Island Tap	Application Number	Assessment Area Name or Number Wetlands 206A, 212C (FLUCFCS 630)
Impact or Mitigation Existing Condition	Assessment conducted by: M. Arrants	Assessment date: Dec-07

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 0	Location and landscape support variable is decreased due to proximity of roadways and transmission lines. Some wetlands are hydrologically connected to forested systems. Please see the following page for the individual parameter scores.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 7 with 0	The water environment is impacted due to drought conditions. Please see the following page for the individual parameter scores.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 8 with 0	Wetlands are dominated by native species with some exotic/nuisance species. Please see the following page for the individual parameter scores.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres 0.70 with 0

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

For impact assessment areas
FL = delta x acres =

Delta = [with-current]
-0.70

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

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

SITE: OUC- Osceola to Cane Island
Tap

OVERALL UMAM SCORE

0.70

LOCATION/LANDSCAPE SCORE
6

WATER ENVIRONMENT SCORE
7

VEGETATION SCORE

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

Site/Project Name OUC- Osceola to Cane Island Tap		Application Number		Assessment Area Name or Number Wetlands 196 C-A, 196C-B, 196 F-A, 196F-B, 199B, 199C, 202A, 202B, 204A, 207B, 212A, 217A, 217B, 219A	
FLUCCs code 641 - Freshwater Marshes		Further classification (optional)		Impact or Mitigation Site? Impact	Assessment Area Size 11.46 acres
Basin/Watershed Name/Number		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 Wetlands are located along the transmission line ROW. Some are hydrologically connected to nearby forested wetlands adjacent to the the transmission line ROW. Most are isolated.					
Assessment area description Freshwater marsh wetlands are common along the ROW. These habitats are dominated by emergent herbaceous species, including redtop panicum (<i>Panicum rigidulum</i>), pickerelweed (<i>Pontederia cordata</i>), lemon bacopa (<i>Bacopa caroliniana</i>), spike rush (<i>Eleocharis</i> sp.), beaksedge (<i>Rhynchospora</i> sp.), sedges (<i>Cyperus</i> spp.), dogfennel (<i>Eupatorium capillifolium</i>), ceasar weed (<i>Urena lobata</i>), Walter's sedge (<i>Carex walteriana</i>), mistflower (<i>Eupatorium coelestinum</i>), slender amaranth (<i>Amaranthus viridis</i>), purple nightshade (<i>Solanum xanti</i>), American pokeweed (<i>Phytolacca americana</i>), nutrushes (<i>Scleria</i> spp.), Jamaica swamp sawgrass (<i>Cladium jamaicense</i>), maidencane (<i>Panicum hemitomon</i>), lizard's tail (<i>Saururus cernuus</i>), rattlebox (<i>Sesbania</i> spp.), marsh pennywort (<i>Hydrocotyle</i> sp), sandweed (<i>Hypericum fasciculatum</i>), alligatorflag (<i>Thalia geniculata</i>), Virginia chain fern (<i>Woodwardia virginica</i>), bushy bluestem (<i>Andropogon glomeratus</i>), and broomsedge bluestem (<i>Andropogon virginicus</i>). Common shrub species within freshwater marsh habitats include Peruvian primrose willow (<i>Ludwigia peruviana</i>), as well as occasional individuals of groundsel tree (<i>Baccharis halimifolia</i>), red maple (<i>Acer rubrum</i>), dahoon holly (<i>Ilex cassine</i>), and pond cypress (<i>Taxodium ascendens</i>).					
Significant nearby features roadways, transmission lines		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique			
Functions Wildlife habitat, natural water treatment and storage		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, deer, and feral hogs		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Occasional use by wading birds such as white ibis (<i>Eudocimus albus</i>) (SSC), wood stork (<i>Mycteria americana</i>) (E), and little blue heron (<i>Egretta caerulea</i>) (SSC).			
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): White tailed deer (<i>Odocoileus virginianus</i>), gray fox (<i>Urocyon cinereoargenteus</i>), black vulture (<i>Coragyps atratus</i>), red-shouldered hawk (<i>Buteo lineatus</i>), catbird (<i>Dumetella carolinensis</i>), yellow rumped warbler (<i>Dendroica coronata</i>), Eastern phoebe (<i>Sayornis phoebe</i>), green tree frog (<i>Hyla cinerea</i>), ribbon snake (<i>Thamnophis sauritus</i>), and evidence of feral hog (<i>Sus scrofa</i>) were observed during the site visit.					
Additional relevant factors:					
Assessment conducted by: M. Arrants		Assessment date(s): 12/12/2007- 12/13/2007			

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

Site/Project Name OUC- Osceola to Cane Island Tap	Application Number	Assessment Area Name or Number Wetlands 196 C-A, 196C-B, 196 F-A, 196F-B, 199B, 199C, 202A, 202B, 204A, 207B, 212A, 217A, 217B, 219A (FLUCFCS 641)
Impact or Mitigation Existing Condition	Assessment conducted by: M. Arrants	Assessment date: Dec-07

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 0	Location and landscape support variable is decreased due to proximity of roadways and transmission lines. Some wetlands are hydrologically connected to forested systems. Please see the following page for the individual parameter scores.
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 7 with 0	The water environment is impacted due to drought conditions. Please see the following page for the individual parameter scores.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 7 with 0	Wetlands are dominated by a mixture of native and exotic/nuisance species. Please see the following page for the individual parameter scores.

Score = sum of above scores/30 (if uplands, divide by 20)
current or w/o pres
0.67 0

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

For impact assessment areas
FL = delta x acres =

Delta = [with-current]
-0.67

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

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

Uniform Mitigation Assessment Method - Individual Parameter Scores

SITE: OUC- Osceola to Cane Island
TapWETLAND ID: 196 C-A, 196C-B, 196
F-A, 196F-B, 199B, 199C, 202A, 202B,
204A, 207B, 212A, 217A, 217B, 219A
Freshwater Marshes (FLUCFCS 641)OVERALL UMAM SCORE
0.67

	Location Landscape Support	10	7	4	0	PARAMETER SCORE
a	Quality of habitats outside area for wildlife	fulfill optimal life history requirements of wildlife	fulfill most but not all requirements	habitat availability outside area fair but excludes some wildlife	no habitats available outside site to support wildlife	7
b	Invasive exotics and other exotics	Not present	some invasive exotics in plant community	many invasive exotics and other exotics in community	plant community consists mainly of invasive exotics	5
c	Wildlife access to and from assessment area and other areas	unobstructed	partially limited	substantially limited	access completely blocked	7
d	Areas downstream of assessment area	beneficial and unobstructed	benefits partially limited by either distance or obstructions	benefits substantially limited by either distance or obstructions	no benefits to downstream areas	7
e	Effects of land use outside of area on wildlife	no ill effects	minimal impacts	substantial impacts	severe impacts	6
f	Hydrologically connected areas downstream of area	not limited by hydrological flow restrictions	partially limited	substantially limited	no benefits to downstream areas	7
g	Dependency of downstream areas on assessment area	Downstream areas critically dependant and would suffer from alterations to hydrology	Downstream areas significantly dependent on assessment area	minimal benefits from assessment area	little or no benefit to downstream areas	5
h	For upland areas, location in relation to benefit and protection of wetland	upland provides optimal protection	upland provides some protection	upland provides little protection	upland provides no protection of wetland	N/A

LOCATION/LANDSCAPE SCORE
6

	Water Environment	10	7	4	0	PARAMETER SCORE
a	Water levels and flow	appropriate water levels considering season, tidal cycle, and weather	water level slightly higher or lower than appropriate	water levels and flow are moderately higher or lower than appropriate	water levels or flow exhibit an extreme degree of deviation	6
b	Water level indicators in relation to type of system being evaluated	distinct water level indicators	indicators not as distinct, but still consistent with expected	indicators not distinct, and not consistent with expected	indicators not present or are greatly inconsistent with expected	7
c	Soil moisture for system type	appropriate soil type and moisture	soil oxidation or subsidence is minimal, soils drier than expected	soil moisture has deviated from appropriate for system and season	strong evidence of substantial soil desiccation, oxidation, or subsidence	6
d	Soil erosion or deposition patterns	typical, not indicative of altered flow rates	patterns indicate minor alterations in flow rates	patterns strongly atypical and indicate alterations in flow rates	patterns greatly atypical indicating alterations in flow rates	7
e	Evidence of fire history	typical for frequency and severity	indicative that frequency or severity may be greater than expected	indicative of much greater frequency and severity	great deviation from typical	N/A
f	Vegetation or benthic community zonation of all strata	appropriate for the type of system being evaluated	zonation in some strata inappropriate for system type	zonation in most strata inappropriate for system type	all strata inappropriate for system type	7
g	Signs of hydrologic stress on vegetation	no signs of stress on vegetation	slightly greater mortality of vegetation, signs of stress	strong evidence of greater than normal mortality	vegetation has strong evidence of much greater than normal mortality	7
h	Evidence of use by animals with specific hydrological requirements	expected for site hydrology	less than expected evidence of animals	greatly reduced evidence of animals with specific requirements	lacking those species with specific requirements	7
i	Composition of wetland plants with respect to tolerance	plant community not characterized by species tolerant to quality degradation	some of community consists of tolerant species	most of community composed of tolerant species	community predominantly consists of tolerant species	7
j	Direct observation of standing water with respect to discoloration, turbidity, or oil sheen	no indicators of water quality degradation	slight indication of water quality degradation	moderate water quality degradation such as discoloration, turbidity, or oil sheen	significant water quality degradation	N/A
k	Existing water quality data indicates conditions supporting ecological value	water quality indicates optimal conditions for community type	slight deviation from what is normal	moderate deviation from the normal	severe deviation from the normal	N/A
l	Water depth, wave energy, currents, and light penetration	optimal for community type	generally sufficient for type of community	not well suited for the type of community	inappropriate for community type	N/A

WATER ENVIRONMENT SCORE
7

	Vegetation Community Structure	10	7	4	0	PARAMETER SCORE
a	Plant cover - desirable species in canopy, shrub, or ground stratum	all or nearly all plant cover is appropriate	majority of plant cover is appropriate	majority of plant cover is inappropriate	no appropriate or desirable species	6
b	Presence of invasive exotics or other exotics	no invasives present	minimal invasives present	majority of plant cover is invasive exotic or exotic	high presence of cover by invasives	6
c	Evidence of regeneration or recruitment	strong evidence of regeneration and or recruitment	near normal evidence of regeneration or recruitment	minimal evidence of regeneration or recruitment	no evidence of regeneration or recruitment	7
d	Age and size distribution	typical of the system	slightly atypical age and size distribution	atypical distribution and indicative of permanent deviation	high percentage of dead or dying vegetation	7
e	Density and quality of coarse woody debris, snags, den and cavities	optimal structural habitat for system type	adequate structural habitat for system type	either not present or greater than normal because of poor plant community health	either not present or greater than normal because of dead or dying plant community	N/A
f	Plant condition- evidence of chlorotic or spindly growth or insect damage	good plant condition no evidence of abnormalities	generally good plant condition with little evidence stress	generally poor plant condition with evidence of stress	very poor plant condition	7
g	Land management practices for long-term viability of plant community	optimal	generally appropriate, but there may be some fire suppression or water control	partial removal or alteration of natural structures or introduction of artificial features	removal or alteration of natural structure intro of ditches or furrows	7
h	Topographic features, such as refugia ponds, creek channels, flats or hummocks	all present and normal for area being assessed	slightly less than optimal for area being assessed	reduction in extent substantial	lack of features being assessed	7
i	Submerged aquatic plant communities are present, any evidence of siltation or algal growth	no evidence of siltation or algal growth	minor degree of siltation or algal growth	moderate degree of siltation or algal growth	high degree of siltation or algal growth	N/A
j	If upland mitigation area, life history support for fish and wildlife	plant community provides optimal level of habitat	plant community provides adequate level of habitat	plant community provides moderate level of habitat	little or no habitat	N/A

VEGETATION SCORE
7