



October 27, 2020

# **PARTIN SETTLEMENT ROAD PS-20-11504-DG**

## **NATURAL RESOURCES ASSESSMENT**

JMT PROJECT NUMBER 20-00219

**Submitted to**  
Osceola County Transportation & Transit Department





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## Objectives

The Partin Settlement Road project (PS-20-11504-DG) is intended to result in the widening/reconstruction of the existing, 2.7-mile, two-lane Partin Settlement Road from CR 525 (Neptune Road) to Lakeshore Boulevard. The project includes a four-lane divided roadway with multi-modal accommodations, associated drainage improvements and storm water ponds, modification of intersections at Neptune Road, Cross Prairie Parkway, US 192, and Lakeshore Boulevard, and modification/replacement of the double-box bridge-culvert over Fish Lake Canal.

To accommodate permitting the project, various tasks regarding natural resources are required, including background research on natural resources in the area (protected species, managed species, wetlands and other water resources, etc.), reconnaissance of the project area to determine the presence of resources during the project planning phase, detailed surveys for resources after plans are finalized, field data analysis, preparation of memoranda indicating findings, and environmental permitting.

The following pages summarize the background research on natural resources conducted for the project area and findings from the field reconnaissance effort undertaken during September 2020. Field reconnaissance comprised the corridor and ten candidate stormwater pond sites adjacent to the corridor.

## Land Use and Cover Types

Partin Settlement Road is an existing 2.7-mile long east-west roadway with a predominantly two-lane rural section, although there are sections of the project built as an urban section or as a three-lane undivided section with a center turn lane. There are no railroad crossings along the project limits, however, there is a major bridge over Florida's Turnpike, just east of the intersection of Partin Settlement at US-192. Land use in the corridor is approximately half residential and half commercial; the latter being primarily in the central portion of the project area (Figure 1). The land use and cover classifications were mapped in Figure 1 according to the Florida Department of Transportation Florida Land Use, Cover, and Forms Classification System (FLUCFCS) Manual, 1999. The figure also lists cover types and relative coverage; the dominant types being improved pastures (mostly in the candidate pond sites) and "Medium Density, Fixed Single Family Units," which are generally found along the road corridor.

## Soils

The project corridor was reviewed to evaluate soils, land uses, and vegetative communities. Soils within the project corridor were mapped according to the United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) soils data (2020 online data; see Appendix A soil data and map). Table 2 lists the soil types found in the area. Over 60% of the soils in the project area are composed of hydric soils, including frequently ponded Placid fine sand, frequently ponded Riviera fine sand, Samsula muck, and Basinger fine sand. Most candidate water treatment pond sites are associated with hydric soils.

**Table 1. Land Use and Cover Types Found in the Project Area**

FLUCFCS Code	Land Use Description	Acres	% Project Area
1110	Low Density, Fixed Single Family Units	3.9	5.2
1210	Medium Density, Fixed Single Family Units	10.8	14.4
1290	Medium Density, Under Construction	1.8	2.4
1330	High Density, Multiple Dwelling Units, Low Rise	1.5	2.0
1340	High Density, Multiple Dwelling Units, High Rise	0.01	0.01
1400	Commercial and services	4.4	5.8
1411	Shopping Centers	2.4	3.2
1550	Other Light Industrial	1.4	1.9
1700	Institutional	3.2	4.3
1710	Educational Facilities	1.3	1.8
1900	Open Land (Urban)	3.4	4.6
2110	Improved Pastures	23.4	31.2
2210	Citrus Groves	6.8	9.1
3200	Shrub and Brushland	1.3	1.8
5300	Reservoirs	0.4	0.6
6172	Mixed Shrubs	0.2	0.3
6430	Wet Prairies	2.4	3.2
8140	Roads and Highways	6.4	8.5

**Table 2. Soils Found in the Project Area**

Soil Description	Hydrologic Group	Hydric Status	Acres	% Project Area
Adamsville sand, 0 to 2 percent slopes	1	Not Hydric	17.1	8.8%
Basinger fine sand, 0 to 2 percent slopes	5	Hydric	44.9	23.2%
Immokalee fine sand, 0 to 2 percent slopes	16	Not Hydric	45.5	23.5%
Myakka fine sand, 0 to 2 percent slopes	22	Not Hydric	10.7	5.5%
Placid fine sand, frequently ponded, 0 to 1 percent	32	Hydric	49.3	25.5%
Riviera fine sand, frequently ponded, 0 to 1 percent	39	Hydric	5.4	2.8%
Samsula muck, frequently ponded, 0 to 1 percent	40	Hydric	20.4	10.6%
Water	99		0.2	0.1%

## Wetlands and Other Surface Waters

The project area is situated between two of central Florida's largest lakes, Lake Tohopekaliga (Toho) and East Lake Toho. Nearby Fish Lake drains the western portion of the project area to Lake Toho via a canal located just south of the project area. The majority of soils found along the road corridor and within pond sites are classified as hydric. Partin Settlement Road crosses a few wetland/surface water systems, one on the east side of the project (minor), one near the center (major), and one toward the west (minor). Figure 2 shows wetlands in the area identified by the National Wetland Inventory. Wetland quality varies from low (previously impacted areas with invasive plant species or existing within wet cattle pasture) to medium (scrub-shrub hydric areas near East Lake Tohopekaliga). Cumulatively, wetland and surface water impacts related to roadway improvements are estimated to comprise approximately 1.6 ac, while wetland and surface water impacts related to pond creation/expansion (among all ten candidate sites) are estimated to comprise nearly nine ac. Surface waters in the corridor include the Fish Lake Canal running north/south under a Partin-Settlement Road bridge as well as several upland-cut (Photo 1) and wet ditches (side slopes 4:1 or greater) and swales (side slopes 3:1 or less). Some proposed pond sites include expansion of existing stormwater ponds.

Prior to field reconnaissance, potential wetlands and surface waters within the project corridor were identified through review of available site-specific data and a cursory field evaluation. Literature utilized to identify wetlands and surface waters included the following:

- Aerial Photography;
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps;
- United States Geological Survey (USGS) topographical quadrangle maps; 7.5-minute series; and
- USDA, Soil Conservation Service, Osceola County Online Soil Survey, 2020.

Using the information obtained from the above data sources, field reviews for the evaluation were conducted in September 2020 to verify approximate wetland and surface water locations and to generally characterize these habitats within the project corridor. Dominant vegetative composition was noted for each wetland/surface water area, as were indicators of hydrology. Jurisdictional wetlands and other surface waters (WOSW) were found both along the primary corridor and at certain candidate sites for installation of water treatment ponds (Figure 3 series). The areas observed to have wetland characteristics are detailed below, and are discussed generally in geographic order, from west to east (Figures 3.1, 3.2 and 3.3).

WOSW 1 is in the ROW on the south side of Partin Settlement Road and fronts a residential parcel. The low-quality wetland comprises Brazilian pepper (*Schinus terebinthifolia*), sabal palmetto (*Sabal palmetto*), and laurel oak (*Quercus laurifolia*). The estimated wetland impact is 0.05 ac.



Photo 1: Typical upland-cut ditch, adjacent to Pond Site 8A(1)

WOSW 2 is a wetland in an improved cattle pasture on Shady Lane (Photo 2). It is identified as a PEM1C Freshwater Emergent Wetland on NWI. Primary vegetation includes hybrid grasses used for grazing (*Bahia* sp.), and also *Carex* sp., *Juncus* sp., and *Spartina* sp. The site appears to drain to the canal that links Fish Lake to Lake Toho. Proposed pond 3A(1) placement in this location may impact approximately one acre.

WOSW 3 is in the ROW on the south side of Partin Settlement Road and fronts a residential parcel. It is located slightly west of an unpaved residential driveway. The low-quality wetland comprises Boston fern (*Nephrolepis exalta*), Brazilian pepper, sabal palmetto, and slash pine (*Pinus elliottii*). The estimated wetland impact is 0.07 ac.



Photo 2: WOSW 2 in pasture on Shady Lane, at/near Pond 3A(1) Site

WOSW 4 is a wetland-cut roadside ditch located in the southside ROW of Partin Settlement Road and just north of proposed Pond 3A(2) site. The impact to this wet ditch would be approximately 0.50 ac.

WOSW 5 is a low-quality wetland comprising wet improved pasture south of Partin Settlement Road (Photo 3). It is identified as a PEM1F Freshwater Emergent Wetland on NWI. The area is the headwaters of a stream system that drains to Fish Lake and is primarily covered by Bahia grass (*Paspalum notatum*), sedges, and *Juncus* (*Juncus* sp.). Installation of Pond 3A(2) in this location would affect approximately 0.60 ac.

WOSW 6 is the portion of Fish Lake Canal that passes underneath Partin-Settlement Road. Installation of a new culvert would temporarily disturb approximately 0.20 ac of surface waters and canal bed.



Photo 3: WOSW 5, in pasture south of Partin-Settlement Road, at/near Pond 3A(2) Site

WOSWs 7 and 8 is a wetland-cut roadside ditch located just south of Partin Settlement Road and just north of the proposed Pond 3B(2) site. These appear to drain to the Fish Lake Canal. Impacts from road widening may impact up to 0.20 ac of these wet ditches.

WOSWs 9 and 10 are located behind the 15-foot-wide berm along Fish Lake Canal, south of Partin Settlement Road and just east of an existing stormwater pond (Photos 4 and 5, respectively). These low-quality wetlands comprise primarily mowed fields/grazing areas, covered by Bahia grass, spartina, and juncus, and bordered by Brazilian pepper. They are identified as a PEM1F Freshwater Emergent Wetland on NWI. The estimated impact to this wetland would be nearly 1.00 ac if Pond 3B(2) were placed at this site.

WOSW 11 is a medium quality wetland located in the northern portion of the site proposed for Pond 3(B)1 and drains to the Fish Lake Canal (Photo 6). This otherwise isolated system comprises mostly invasive species such as Peruvian willow (*Ludwigia peruviana*), Chinese tallow (*Triadica sebifera*), Brazilian pepper, and Carolina willow (*Salix caroliniana*), but also the opportunistic, native *Baccharis* (*Baccharis halimifolia*). If the pond were constructed at this site, it would impact approximately 0.75 ac.





Photo 4: WOSW 9, in pasture at Pond 3B(2) Site, north side



Photo 5: WOSW 10, in pasture at Pond 3B(2) Site, south side



Photo 6: WOSW 11, north of existing stormwater pond, west of Publix shopping center

WOSW 12 is a wide ditch in/adjacent to the southern ROW of Partin Settlement Road and just west of Florida's Turnpike (Photo 7). The ditch is dominated by Brazilian pepper and various vines, such as Muscadine (*Vitis* sp.) and Greenbrier (*Smilax* sp.). Being on a slope, its primary source of hydrology is roadway runoff. The estimated impact to this wetland due to road expansion would be at approximately 0.13 ac.

WOSWs 13 (Photo 8) and 15 are wet ditches in the southern ROW of Partin Settlement Road located just north of the proposed sites for Ponds 8B(1) and 8B(2), respectively.

WOSW 14. This medium-quality wetland is in the site proposed for Pond 8(B)1 and is located in the historic floodplain of East Lake Toho (Photo 9). It comprises primrose willow (*Ludwigia* sp.), Sesbania (*Sesbania* sp.), Brazilian pepper, and grasses/sedges associated with wet meadow habitats, which covers a significant portion of the wetland. Impacts to this wetland to install the pond would range from 2.50 to 3.00 ac.

WOSW 16. This medium-quality wetland is located in the northern portion of the site proposed for Pond 8(B)2 and is located in the historic floodplain of East Lake Toho (Photo 10). Primary vegetation includes red maple (*Acer rubrum*), Caesar weed (*Urena lobata*), and Brazilian pepper. Impacts to this wetland to install the pond would range from 2.50 to 3.00 ac.



Photo 7: WOSW 12, a ditch north of Osceola County Fire Rescue Headquarters



Photo 8: WOSW 13, a roadside wet ditch north of Pond 8B(1) Site



Photo 9: WOSW 14, a wetland at Pond 8B(1) Site



Photo 10: WOSW 16, a wetland at Pond 8B(2) Site

WOSW 17 encompasses a tributary, wetland, and ROW ditch (Photo 11). Vegetation comprises cinnamon fern (*Osmundastrum cinnamomeum*), Brazilian pepper, sabal palmetto, laurel oak, and red maple. Expansion of the intersection/roadway would impact approximately 0.15 ac.



Photo 11: WOSW 17, a stream/ditch/wetland complex near E. Lakeshore Blvd intersection

## Protected Species

Prior to conducting a field visit to examine project area habitats, an updated literature search was performed to confirm the potential presence of any protected species and/or their critical habitats within or adjacent to the project area. General literature referenced included the following:

- The FWC's List of Florida's Endangered Wildlife Species (68A-27.003 FAC) and Species of Special Concern (68A-27.005 FAC)
- FWC's Florida's Imperiled Species Management Plan (January 2017)
- Florida Department of Agriculture and Consumer Services (FDACS) List of Florida's Endangered Plant Species (58-40.0055 FAC) (August 2017)
- USFWS Endangered & Threatened Wildlife and Plants. 50 CFR 17.11 and 17.12. (2017)
- Various USFWS, FWC, and Florida Natural Areas Inventory (FNAI) listed species occurrence GIS data.

Based on the habitat types present within and adjacent to the project, as well as information from the literature and database search, a list of protected wildlife species that *could* potentially occur within the project corridor was derived (Table 3). The potential for occurrence of each species was based on the previous assessment, literature review, aerial photography review, and field reconnaissance (September 2020). Listing does not preclude the possibility of other protected species occurring on-site. Findings relative to the proposed project for certain species are discussed below.

**Table 3. Protected Species and Potential to Occur Within the Project Corridor**

Specific Name	Common Name	Federal Status	State Status	Likelihood of Occurrence
<b>Plants and Lichens</b>				
<i>Bonamia grandiflora</i>	Florida Bonamia	T	E	Possible
<i>Centrosema arenicola</i>	Sand Butterfly Pea	NL	E	Possible
<i>Deeringothamnus pulchellus</i>	Beautiful Pawpaw	NL	E	Possible
<i>Eriogonum longifolium</i> var. <i>gnaphalifolium</i>	Scrub Buckwheat	T	E	Possible
<i>Illicium parviflorum</i>	Star Anise	NL	E	Possible
<i>Lupinus aridorum</i>	Scrub Lupine	E	E	Possible
<i>Matelea floridana</i>	Florida Spiny-pod	NL	E	Possible
<i>Nemastylis floridana</i>	Celestial Lily	NL	E	Possible
<i>Nolina brittoniana</i>	Britton's Beargrass	E	E	Possible
<i>Panicum abscissum</i>	Cutthroat Grass	NL	E	Possible
<i>Paronychia chartacea</i> ssp. <i>Chartacea</i>	Paper-like Nailwort	T	E	Possible
<i>Platanthera integra</i>	Yellow Fringeless Orchid	NL	E	Possible
<i>Polygala lewtonii</i>	Lewton's polygala	E	E	Possible
<i>Polygonella myriophylla</i>	Small's Jointweed	E	E	Possible
<i>Salix floridana</i>	Florida Willow	NL	E	Possible
<i>Schizachyrium niveum</i>	Scrub Bluestem	NL	E	Possible
<i>Warea carteri</i>	Carter's Warea	E	E	Possible
<b>Reptiles</b>				
<i>Drymarchon couperi</i>	Eastern Indigo Snake	T	T	Possible
<i>Gopherus polyphemus</i>	Gopher Tortoise	C	T	Possible
<b>Birds</b>				
<i>Mycteria americana</i>	Wood Stork	T	T	Likely
<i>Polyborus plancus</i>	Crested Caracara	T	T	Possible
<i>Aphelocoma coerulescens</i>	Florida Scrub-Jay	T	T	Possible
<i>Grus canadensis pratensis</i>	Florida Sandhill Crane	NL	T	Possible
<i>Picoides borealis</i>	Red-cockaded Woodpecker	E	E	Possible
<i>Rostrhamus sociabilis</i>	Snail Kite	E	NL	Possible
<b>Mammals</b>				
<i>Puma concolor coryi</i>	Florida Panther	E	E	Possible

Table Notes: Abbreviations: E = Endangered, T =Threatened, T(S/A) = Similarity of appearance .NL = Not Listed, C = Candidate for Listing

### Gopher Tortoise

Gopher tortoises are designated as a threatened species by the FWC, and a candidate for threatened status by USFWS. The gopher tortoise prefers habitat with loose, well-drained, sandy soils for burrowing and an abundance of low growing herbaceous vegetation for food. The project corridor and certain pond sites contain potential upland habitat for gopher tortoise. However, no tortoise burrows were observed during habitat reconnaissance in September 2020. Regardless of which pond sites are selected, the project is anticipated to impact less than 25 ac of xeric habitat and less than 25 gopher tortoise burrows. A survey covering 15% of tortoise habitat in the project footprint and extending to 25 feet outside of the footprint limits will be conducted in the next project phase, in accordance with FWC guidelines.

### Eastern Indigo Snake

The eastern indigo snake is listed as Threatened by both the USFWS and the FFWCC. This species is found in a broad range of habitats, from scrub and sandhill to wet prairies and mangrove swamps, often wintering in gopher tortoise burrows but foraging in more hydric habitats (the species is considered a commensal to the gopher tortoise). Land in and adjacent to the project corridor and pond sites may be used as foraging habitat by the eastern indigo snake. Although no indigo snakes were observed during the field review, there are upland habitats within the project limits that could be used for tortoise burrows. As noted above, the project will impact less than 25 ac of xeric habitat and less than 25 gopher tortoise burrows. Standard protection measures following USFWS approved protocol will be employed throughout the project area during construction to assure no adverse effects to the species during construction. Per the updated eastern indigo snake Effect Determination Key, this project should receive a "may affect, not likely to adversely affect" determination.

### Wood Stork

The Wood Stork is classified as Threatened by the FFWCC and the USFWS. Habitats utilized most frequently by this species include cypress and mixed hardwood swamps, sloughs, and mangroves and shallow surface waters such as roadside swales and ditches. USFWS (2019) wood stork data indicates that the core foraging area (CFA) includes the project area (Figure 2). However, little or no Suitable Foraging Habitat (SFH) with relatively calm, open water with depths between 5 and 15 inches, was identified within the project corridor. There could be a few ditches which, after storm events, may have the above characteristics. Ditches will be present in the post-development scenario and additional SFH may be created on site should the creation of a new stormwater ponds be deemed appropriate.

### Caracara

USFWS listed the Audubon's Crested Caracara as threatened under the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 et seq.) on July 6, 1987, (52 FR 25229). The species is listed by both the State of Florida and USFWS as threatened. Critical habitat has not been designated for the caracara. However, the project area is within the northernmost portion of the consultation area for USFWS. The primary breeding season is November through April. Nest initiation and egg-laying peak from December through February. Caracaras construct new nests each nesting season, often in the same tree as the previous year. Nests are well concealed and most often 4 to 18 meters above the ground in cabbage palms (Morrison and Humphrey 2001), although nests have been found in live oaks (*Quercus*

*virginiana*), cypress (*Taxodium distichum*) (first record, Morrison et al. 1997), Australian pine (*Casuarina* spp.), saw palmetto (*Serenoa repens*), and black gum (*Nyssa sylvatica*). No nests or Caracara were observed during habitat reconnaissance, but several cabbage palms of appropriate height for nesting line the road corridor. According to USFWS email correspondence dated May 4, 2020, the nearest known nests are over a half-mile from the project area. Prior to construction, suitable trees in the project area should be reviewed for nests (prior to February 2021).

#### Florida Sandhill Crane

The Sandhill Crane is listed as Threatened by the FFWCC and is not listed by the USFWS. Sandhill cranes prefer wet prairie and open marsh habitat, low-lying pastureland, and shallow flooded open areas for foraging and nesting. They typically nest in open marshes that contain pickerelweed (*Pontederia cordata*), maidencane (*Panicum hemitomon*) and duck potato (*Sagittaria latifolia*). During the field reviews, no sandhill cranes were observed. Habitat for this species occurs within grassy roadside areas as well as some of the candidate pond site. The project will not impact suitable nesting habitat. Foraging habitat within the roadway right-of-way will be present in the post-development scenario, as well as in the riparian zone of new water treatment ponds.

#### Other Listed Wading Birds

It would be expected for wading bird species to regularly use surface waters within the project corridor and pond sites for foraging purposes. GIS database sources reveal that there are no wading bird rookeries located within the project corridor that would be affected by the project. Habitat in the form of surface waters, and ditches adjacent to the roadway will be present in the post-development scenario.

#### Southern Bald Eagle

While the Bald Eagle is no longer federally or state-listed as threatened or endangered, it is still afforded protection by the Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and state and federal management plans. These management plans dictate that activities beyond 660 feet from an eagle nest should not disturb the nest. The FFWCC Bald Eagle Nest Locator database (2017) was queried to review locations of documented eagle nests within proximity to the project (Figure 4; circle around legend character represents 660-foot buffer). No bald eagle nest sites are located within the vicinity of the project corridor or pond sites.

#### Florida Scrub-Jay

USFWS listed the Florida Scrub-Jay as threatened under the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 et seq.) on June 3, 1987 (52 FR 20715 20719). Territory size averages 22 to 25 ac (Woolfenden and Fitzpatrick 1990; Fitzpatrick et al. 1991), with a minimum size of about 12 ac (Woolfenden and Fitzpatrick 1984; Fitzpatrick et al. 1991). The availability of territories is a limiting factor for scrub-jay populations (Woolfenden and Fitzpatrick 1984). Nests are typically constructed in shrubby oaks, at a height of 1.6 to 8.2 feet (Woolfenden 1974). Sand live oak (*Quercus geminata*) and scrub oak (*Q. inopina*) are the preferred shrubs on the Lake Wales Ridge (Woolfenden and Fitzpatrick 1996b), and myrtle oak (*Q. myrtifolia*) is favored on the Atlantic Coastal Ridge (Toland 1991) and southern Gulf coast (Thaxton 1998). In suburban areas, scrub-jays nest in the same evergreen oak species, as well



as in introduced or exotic trees. However, they build their nests in a significantly higher position in these oaks than when in natural scrub habitat (Bowman et al. 1996). The project corridor is located within the northernmost portion of the Scrub Jay Service Area and Consultation Area. Preferred scrub oak habitat for scrub jays does not exist within the project corridor or candidate pond sites. However, there are oak trees within the project area. No scrub jay individuals were observed within the project corridor or pond sites during habitat reconnaissance. It is anticipated that this project will not adversely affect the scrub jay.

### Florida Panther

The Florida Panther has been listed as an endangered species since 1967. In recent years, its range has expanded, primarily for foraging males, outside of South Florida. Their published range (on fws.gov) now includes from south Florida to north of Kissimmee, and individuals are known to have migrated as far north as Duval County (pers com, Dave Onorato, FWC, Feb 13, 2019). No designated critical habitat currently exists for the species. Panthers require large, contiguous areas of suitable habitat, and habitat selection is related to prey availability, which means they select habitats that make prey vulnerable to stalking and capturing. For example, dense understory vegetation provides some of the most important feeding, resting, and denning cover for panthers. Telemetry monitoring and ground tracking indicate that panthers select forested habitats, marsh shrub swamps, and prairie grasslands with agricultural lands and other habitat types used in proportion to their availability. The only portion of the project area that conforms to these requirements is some of the pastures which are pond candidate sites. However, the project footprint, including ponds, are in an increasingly developed landscape which would be unappealing for the species. If any individuals were to access the project area, they would likely approach from the south, i.e., from corridors associated with Fish Lake and the other lakes and swamps associated with the Kissimmee Chain of Lakes.

### Listed Plants

While other protected plant species could be present within the project corridor, the plants listed in Table 2 are considered the most likely to occur based on habitat types present. No state or federally protected plant species were observed during the field reviews.

## **Permitting and Mitigation**

*Wetlands and Surface Waters.* Permits for wetland impacts likely to be required include an environmental resource permit (ERP) from the SFWMD. Also, due to the influence of, and connectivity of parts of the project to, Fish Lake, it may be possible that a federal dredge and fill permit from USACE will be necessary (Table 4 shows which wetlands/surface waters could be affected). Mitigation may be required by either or both agencies, and calculation of the mitigation required will be based on a functional loss analysis. The project site includes no Outstanding Florida Waters, Wild & Scenic Rivers, Aquatic Preserves, or Scenic Highways.

*Protected and Managed Species.* At this time, no species-oriented permitting is anticipated; no gopher tortoises were observed in the project area.

**Table 4: Wetland and Other Surface Water Estimated Impacts  
and Jurisdictional Agencies for Permits**

<b>WOSW ID</b>	<b>Type</b>	<b>Project Site</b>	<b>Impact Estimate</b>	<b>Regulatory Jurisdiction</b>
1	Ditch	ROW	0.05	SFWMD
2	Wetland	Pond	1.04	SFWMD/USACE
3	Ditch	ROW	0.07	SFWMD/USACE
4	Wet ditch	ROW	0.52	SFWMD/USACE
5	Wetland	Pond	0.61	SFWMD/USACE
6	Canal	ROW/Bridge	0.19	SFWMD/USACE
7	Wet ditch	ROW	0.15	SFWMD/USACE
8	Wet ditch	ROW	0.04	SFWMD/USACE
9	Wetland	Pond	0.46	SFWMD/USACE
10	Wetland	Pond	0.41	SFWMD/USACE
11	Wetland	Pond	0.75	SFWMD/USACE
12	Wetland/ditch	ROW	0.13	SFWMD
13	Wet ditch	ROW	0.12	SFWMD
14	Wetland	Pond	2.80	SFWMD
15	Wet ditch	ROW	0.16	SFWMD
16	Wetland	Pond	2.83	SFWMD
17	Stream/wet ditch	ROW	0.15	SFWMD

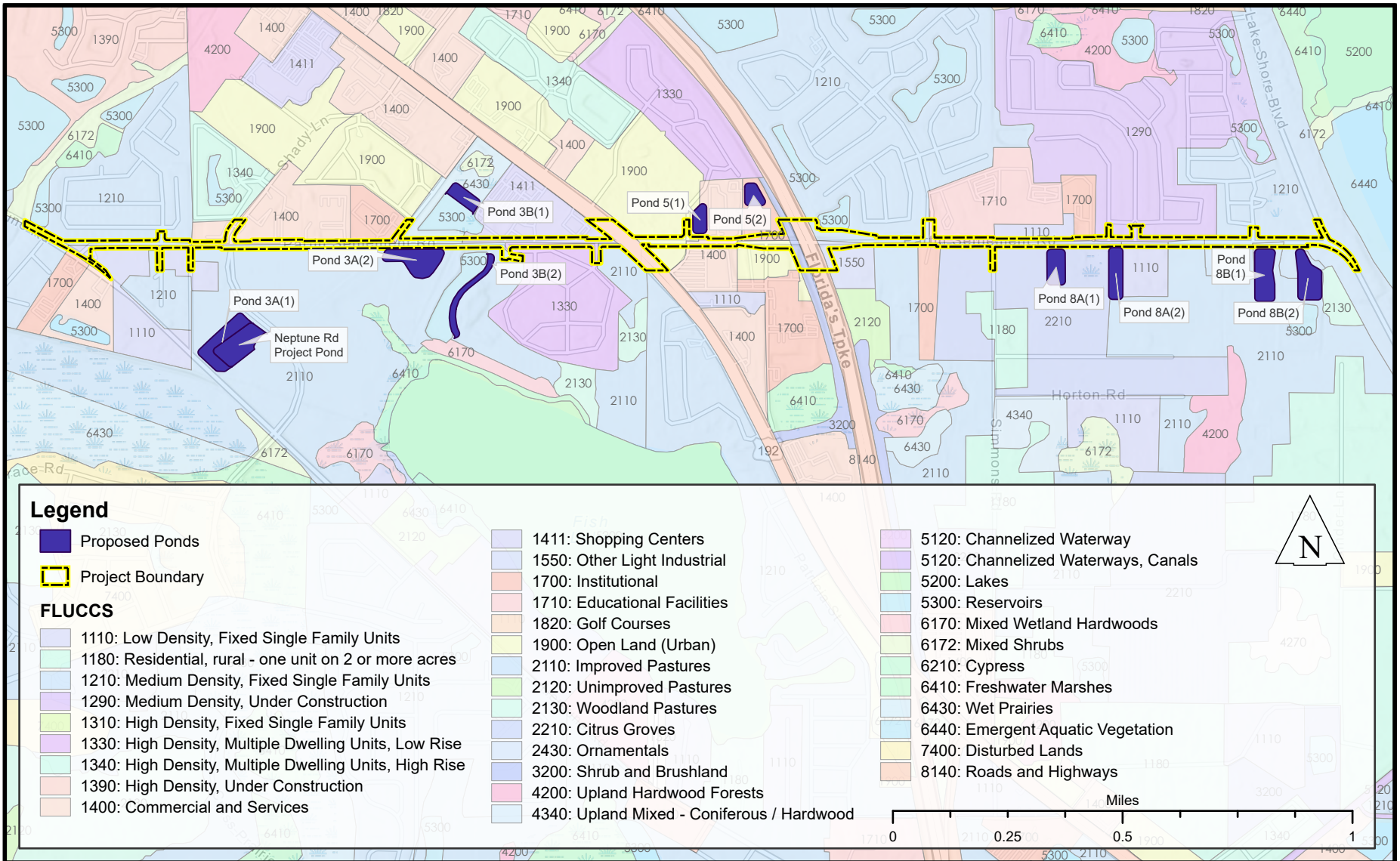


Figure Number:	1
Source:	FDEP (2012-2019), ESRI Basemap
Date:	October 2020
Scale:	1:20,000

**Project Area Land Use and Cover Types**

Existing Conditions  
 Partin Settlement Road  
 PS-20-11504-DG



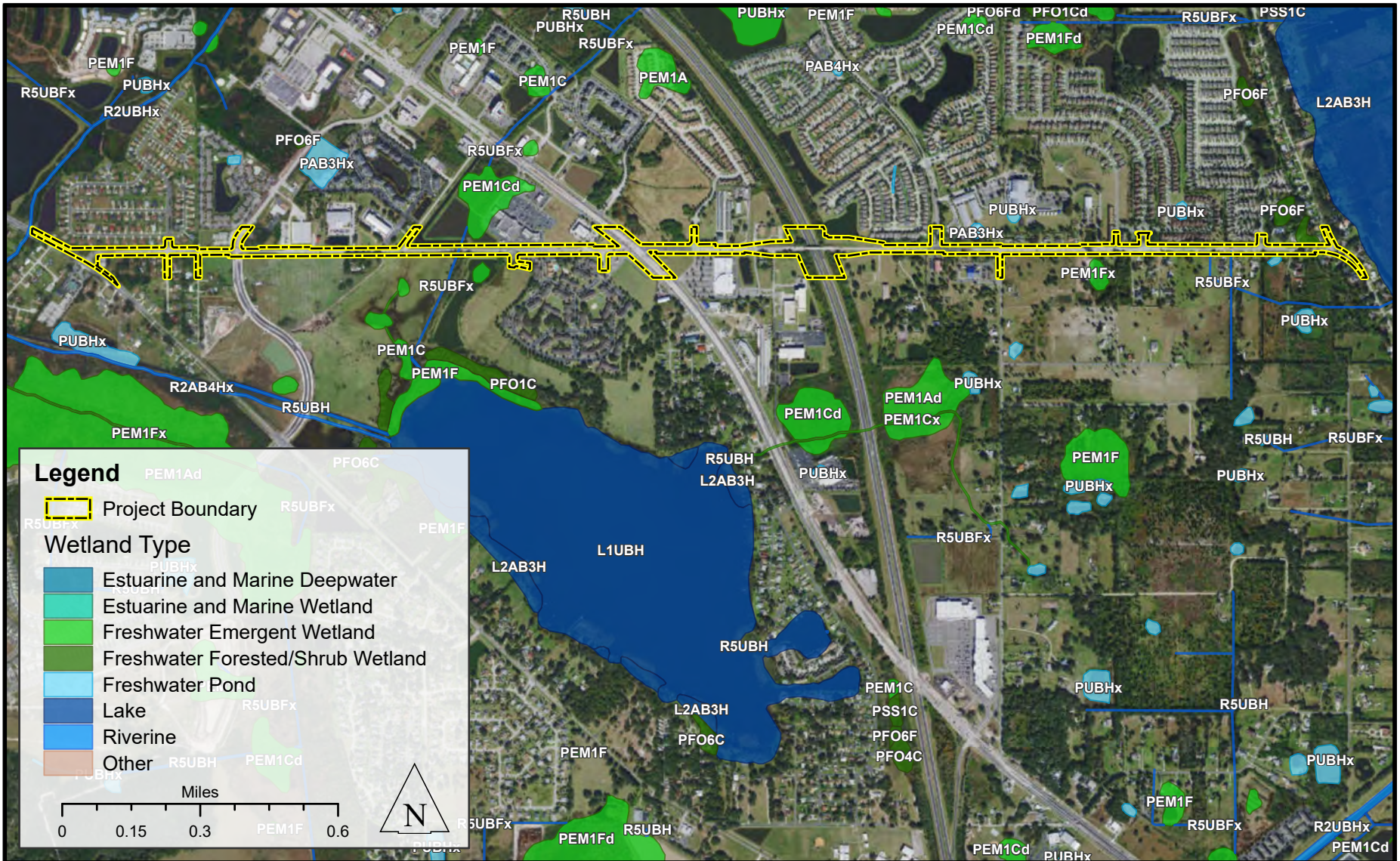


Figure Number:	2
Source:	FWS, ESRI Basemap
Date:	October 2020
Scale:	1:20,000

**National Wetlands Inventory Map**  
 Existing Conditions  
 Partin Settlement Road  
 PS-20-11504-DG



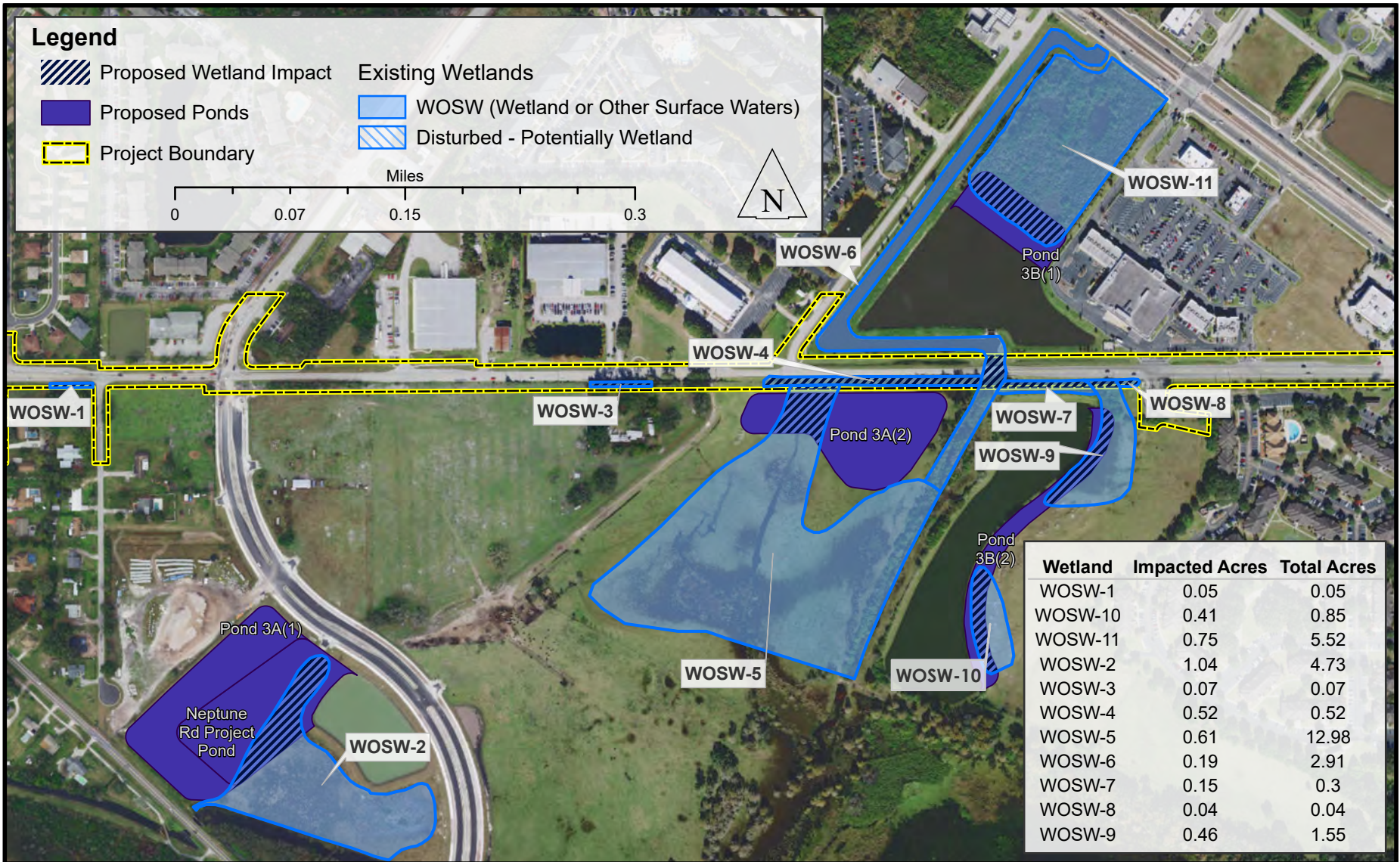


Figure Number:	3.1
Source:	ESRI Basemap
Date:	October 2020
Scale:	1:6,000

**Wetland Map 1**  
 Existing Conditions  
 Partin Settlement Road  
 PS-20-11504-DG



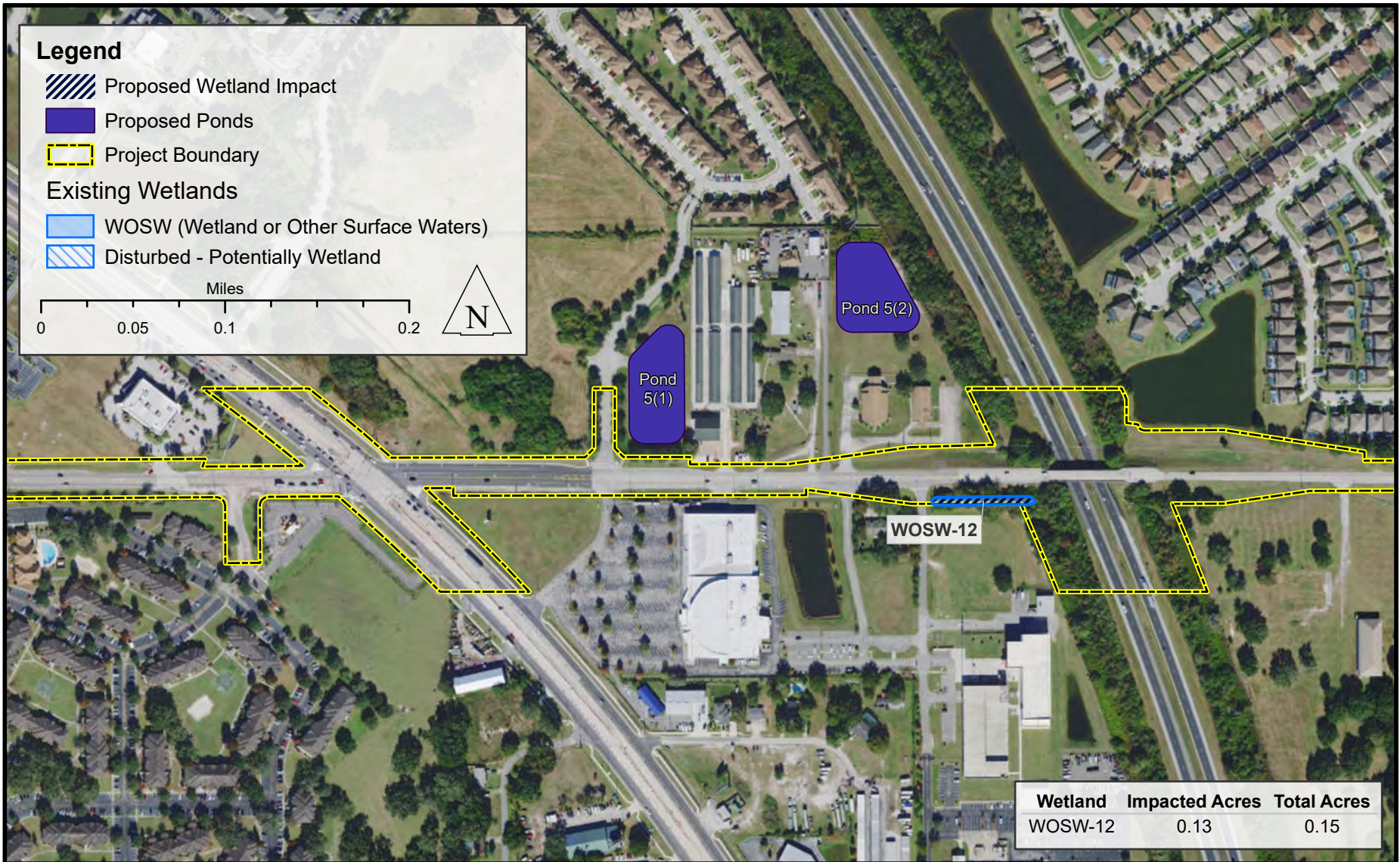


Figure Number:	3.2
Source:	ESRI Basemap
Date:	October 2020
Scale:	1:5,000

**Wetland Map 2**  
 Existing Conditions  
 Partin Settlement Road  
 PS-20-11504-DG





Wetland	Impacted Acres	Total Acres
Disturbed - Potentially Wetland	2.18	2.18
WOSW-13	0.12	0.23
WOSW-14	2.8	3.1
WOSW-15	0.16	0.21
WOSW-16	2.83	3.27
WOSW-17	0.15	0.23

Figure Number:	3.3
Source:	ESRI Basemap
Date:	October 2020
Scale:	1:5,000

**Wetland Map 3**  
 Existing Conditions  
 Partin Settlement Road  
 PS-20-11504-DG



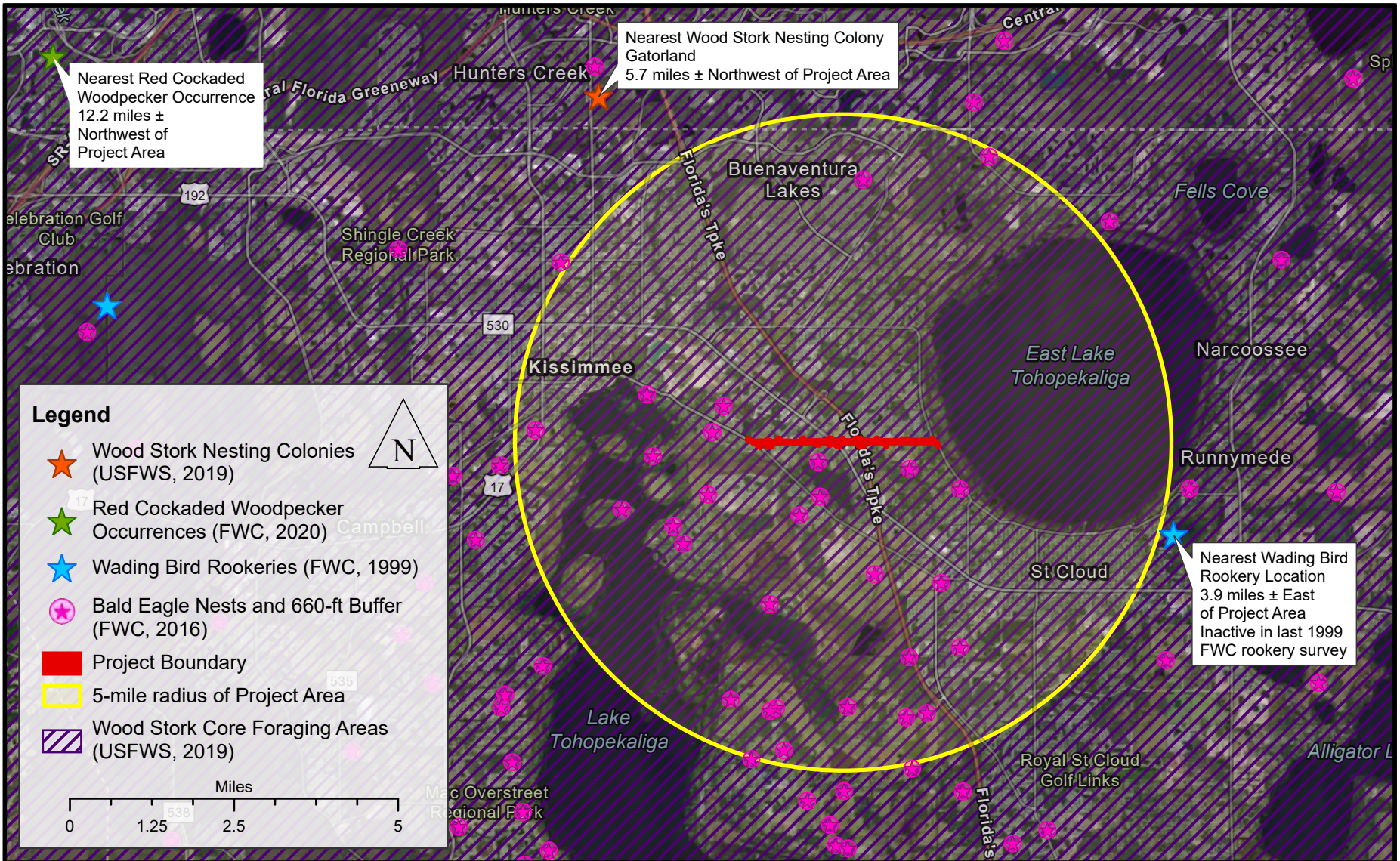


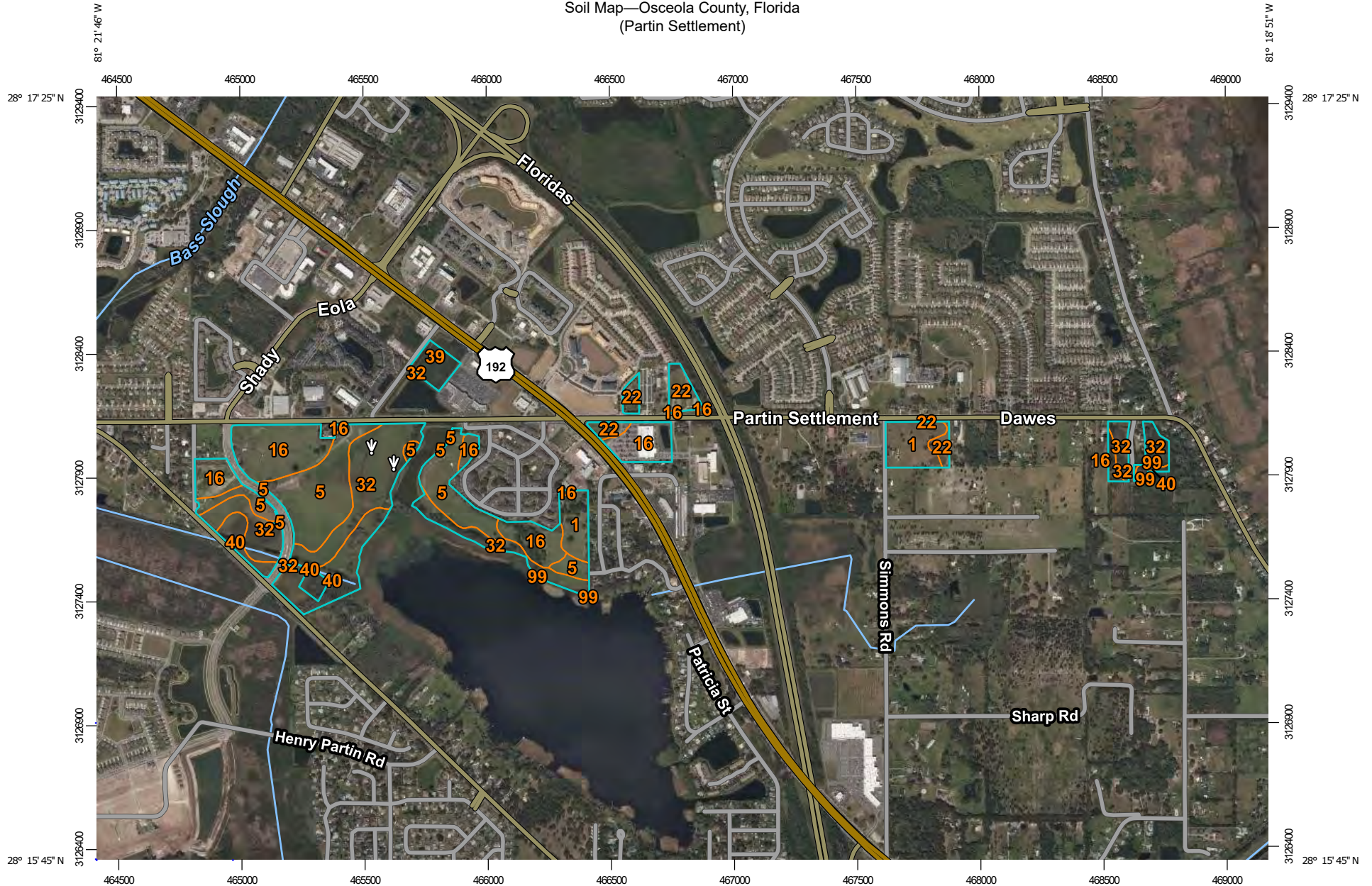
Figure Number:	4	<b>Listed Species Map</b> Existing Conditions Partin Settlement Road PS-20-11504-DG	 
Source:	USFWS, FDEP, FWC, FNAI, USGS, ESRI Basemap		
Date:	October 2020		
Scale:	1:140,000		



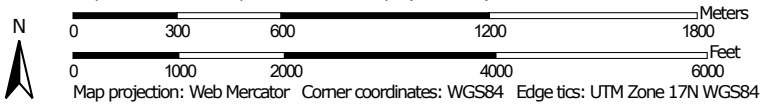


## **APPENDIX A: PROJECT AREA SOILS**

Soil Map—Osceola County, Florida  
(Partin Settlement)




Map Scale: 1:21,800 if printed on A landscape (11" x 8.5") sheet.



Soil Map—Osceola County, Florida  
(Partin Settlement)

**MAP LEGEND**

**Area of Interest (AOI)**

 Area of Interest (AOI)




















**Soils**





 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

**MAP INFORMATION**

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Osceola County, Florida  
Survey Area Data: Version 18, Jun 9, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 27, 2020—May 1, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Adamsville sand, 0 to 2 percent slopes	17.1	8.8%
5	Basinger fine sand, 0 to 2 percent slopes	44.9	23.2%
16	Immokalee fine sand, 0 to 2 percent slopes	45.5	23.5%
22	Myakka fine sand, 0 to 2 percent slopes	10.7	5.5%
32	Placid fine sand, frequently ponded, 0 to 1 percent slopes	49.3	25.5%
39	Riviera fine sand, frequently ponded, 0 to 1 percent slopes	5.4	2.8%
40	Samsula muck, frequently ponded, 0 to 1 percent slopes	20.4	10.6%
99	Water	0.2	0.1%
<b>Totals for Area of Interest</b>		<b>193.4</b>	<b>100.0%</b>