

**LEHIGH ACRES PARK EXPANSION  
PROTECTED SPECIES SURVEY**

**April 2021**

*Prepared for:*



**LEE COUNTY BOARD OF COUNTY COMMISSIONERS  
P.O. BOX 398  
Fort Myers, FL 33902-0398**

*Prepared by:*



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## 1.0 EXECUTIVE SUMMARY

The Lee County Board of County Commissioners (BCC) proposes to expand an existing public park facility on Lee County parcel ID numbers 30-44-27-09-0000A.0020, 30-44-27-09-0000A.0010, and 30-44-27-00-00001.0120 (“site”) in Lehigh Acres. The property, totaling 61.6± acres, consists of the existing park facility, vacant forested land and borrow pit areas south of Village Lakes Boulevard and north of Lee Boulevard and Able Canal. Johnson Engineering, Inc. ecologists conducted a protected species survey (PSS) on the site in December 2020. One potentially occupied gopher tortoise burrow was observed within the project boundary during the survey. Six small leaf and stick nests of unknown origin were GPS survey located onsite. Based on the size and composition of the nest structures, it is believed they may be of small bird or squirrel origin. No evidence that the nests were actively being used, such as fresh leaves, moss, or droppings, was identified during the surveys. Nine dead trees (snags) with cavities were located onsite and scoping of the cavities with a treetop camera revealed two were currently in use by eastern screech owls for nesting. Two State-threatened wading birds were observed foraging within the existing county park. The protected species survey map showing the gopher tortoise burrow, six nest locations, and nine snags is provided in Appendix A.

Species-specific nesting season surveys for the crested caracara (*Caracara cheriway*) are currently being conducted by Johnson Engineering ecologists and will be complete by April 30, 2021. Results of the 2021 crested caracara nesting season survey can be provided under separate cover, if required.

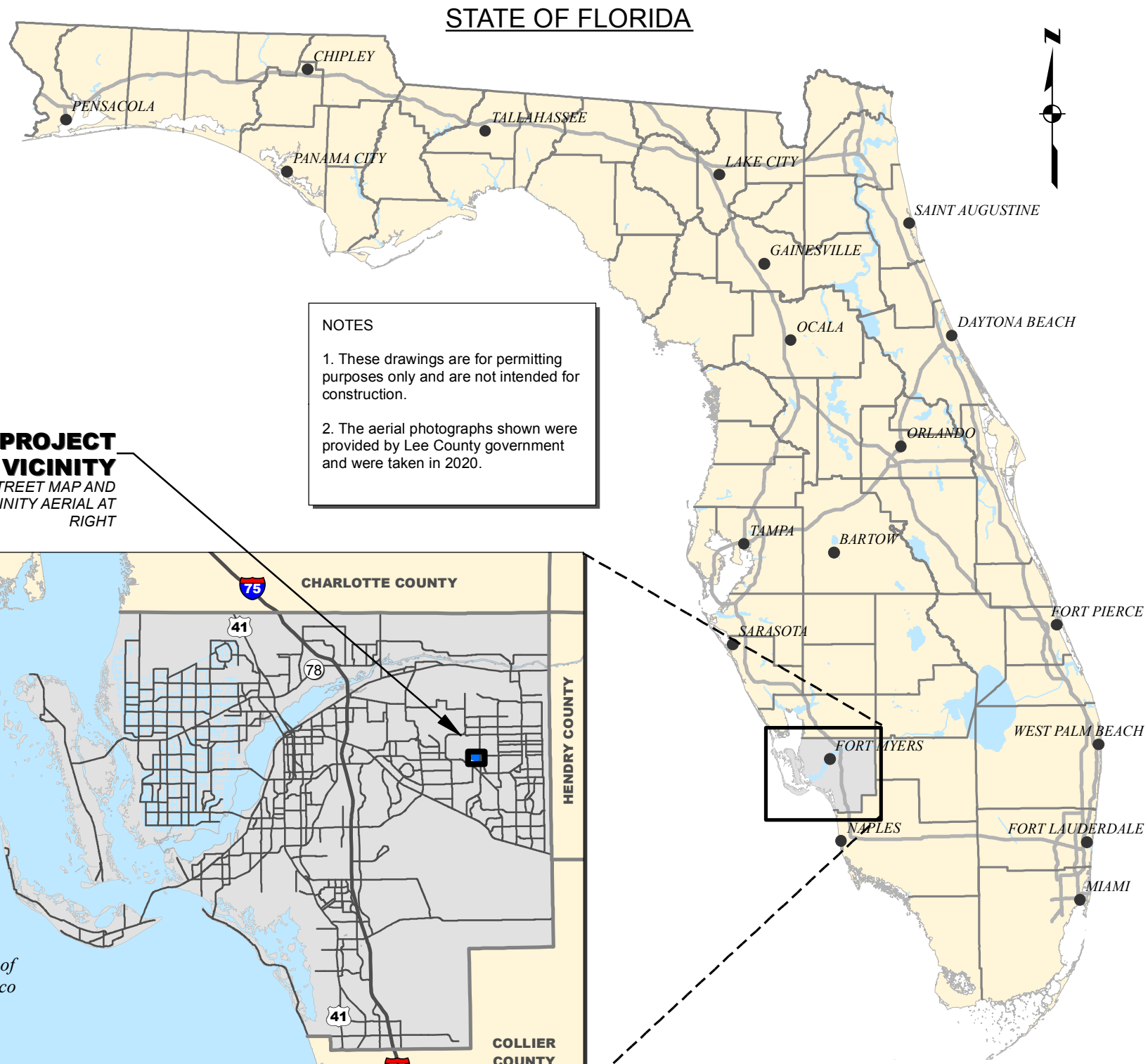
A Florida bonneted bat (FBB; *Eumops floridanus*) acoustic survey is scheduled to be conducted onsite once nightly temperatures meet the parameters outlined in the U.S. Fish and Wildlife Service (USFWS) October 2019 Guidelines. A copy of the FBB acoustic survey report will be provided under separate cover.

## 2.0 INTRODUCTION

The Lee County BOCC (“client”) proposes to expand an existing public park facility on 61.6± acres on Lee County parcel ID numbers 30-44-27-09-0000A.0020, 30-44-27-09-0000A.0010 and 30-44-27-00-00001.0120 in Lehigh Acres. The project site is located primarily south of Village Lakes Boulevard and north of Lee Boulevard in Section 30, Township 44 South, Range 27 East, Lehigh Acres, Florida. It is mostly surrounded by residential and commercial development, with a water treatment plant to the southwest and Able Canal to the south. The project area is depicted in **Figure 1-1**.

Johnson Engineering, Inc. ecologists conducted a PSS on the subject property on December 11 and 16, 2020. Pedestrian transects were established to cover a minimum of 80% of each suitable habitat within the project area. The purpose of the survey was to identify and document the presence of plant or wildlife species listed as endangered, threatened, species of special concern, or commercially exploited by the U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC) and Lee County Protected Species Ordinance. This report represents the results of the PSS prepared in accordance with Lee County Land Development Code, Chapter 10, Article 3, Division 8 (Protection of Habitat) and FWC-approved methods for gopher tortoise (*Gopherus polyphemus*) burrow surveys, as provided in the *Gopher Tortoise Permitting Guidelines* (FWC 2020).

O:\2020\20203179-000\ArcGIS\Loc map 11x17.mxd Date: 2/26/2021 Time: 4:34:20 PM User: JMK

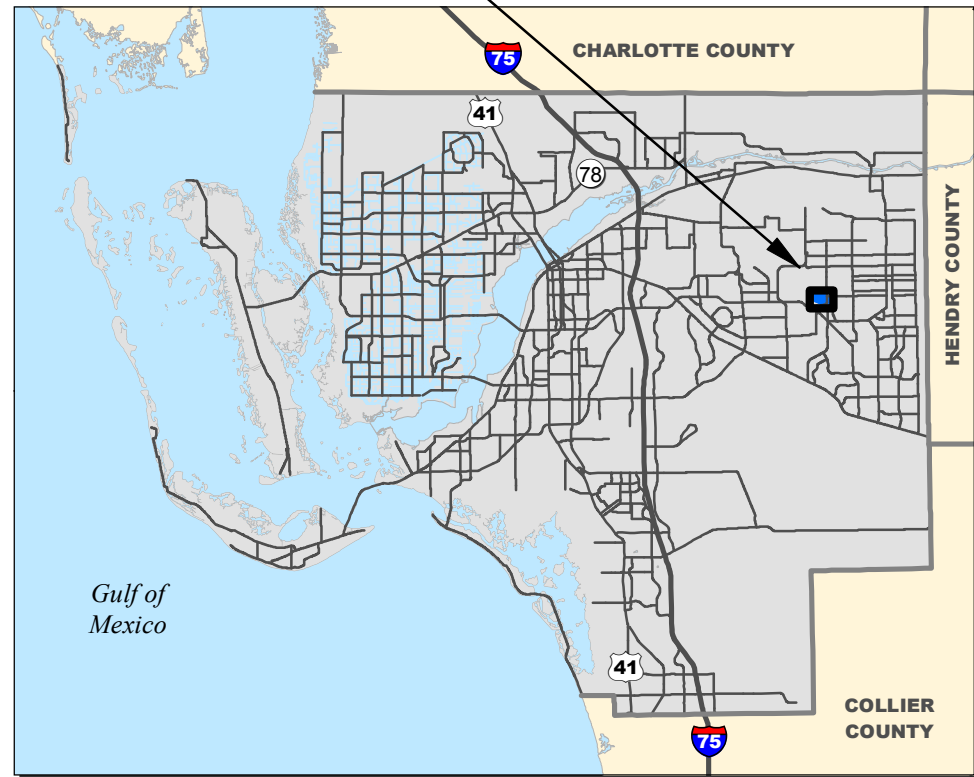


**STATE OF FLORIDA**

**NOTES**

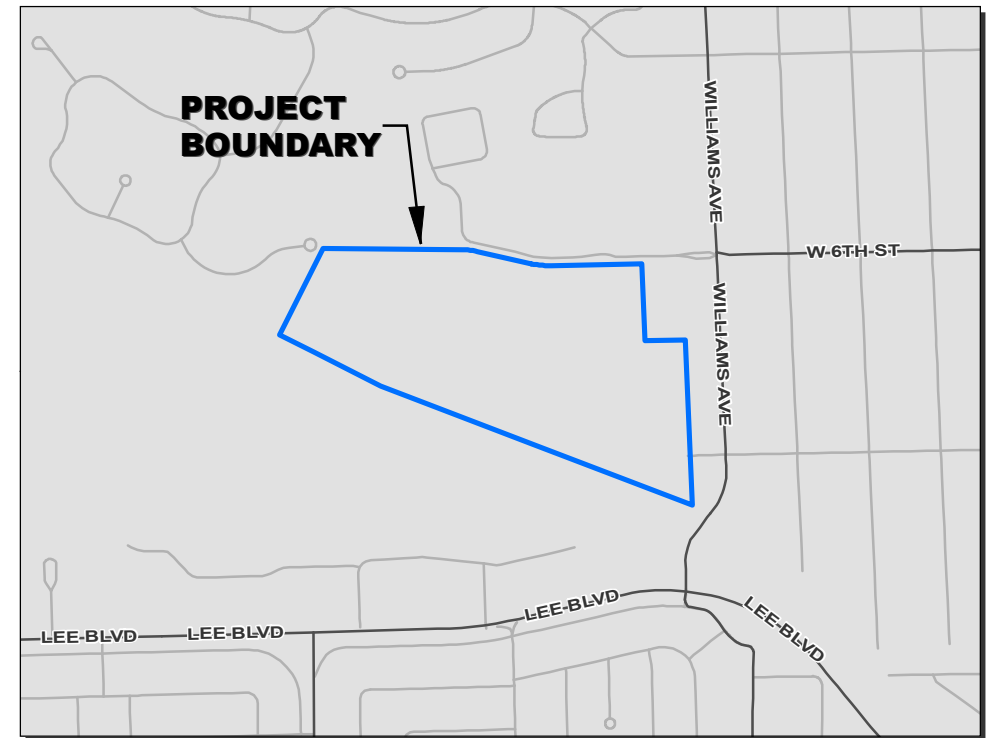
1. These drawings are for permitting purposes only and are not intended for construction.
2. The aerial photographs shown were provided by Lee County government and were taken in 2020.

**PROJECT VICINITY**  
SEE STREET MAP AND VICINITY AERIAL AT RIGHT

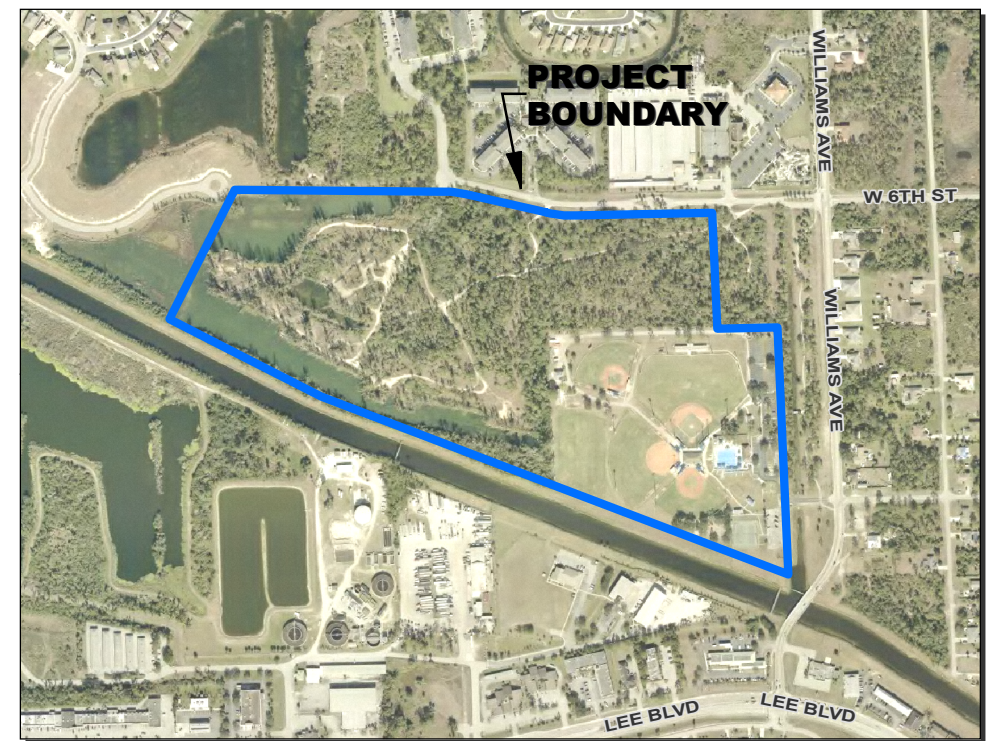


**LEE COUNTY**  
N.T.S

Sections 30, Township 44 S, Range 27 E  
Latitude: 26.619911; Longitude: -81.650854



**STREET MAP**  
N.T.S



**VICINITY AERIAL**  
N.T.S

Lehigh Acres Park Expansion  
Lee County, Florida



JOHNSON ENGINEERING, INC.  
2122 JOHNSON STREET  
P.O. BOX 1550  
FORT MYERS, FLORIDA 33902-1550  
PHONE (239) 334-0046  
FAX (239) 334-3661  
E.B. #642 & L.B. #642

Location Map

DATE	PROJECT NO.	FILE NO.	SCALE	SHEET
Feb 2021	20203179-000	00-00-00	1" = 0000'	1

### 3.0 VEGETATION ASSOCIATIONS

Through mapping and classifying the various vegetative habitats occurring onsite, qualified determinations can be made with regards to the presence of protected species. The cover and vegetation association types were delineated using Lee County 2020 digital aerial photographs, Natural Resources Conservation Service (NRCS) Soil Survey Maps for Lee County (**Sheet 2 of Appendix A**), and field observations. The habitat types were classified according to Levels III and IV of the Florida Land Use, Cover and Forms Classification System (FLUCFCS) [Florida Department of Transportation (FDOT), 1999]. The resulting FLUCFCS and Protected Species Survey Map is provided in **Appendix A**. The approximate acreages for the various FLUCFCS Codes can be found in **Table 3-1**. A brief description of each surveyed FLUCFCS Code is given below.

#### **FLUCFCS Code 185: County park**

This habitat consists of a county park facility with ballfields, concessions, bathroom facilities, and parking. Impermeable concrete surface comprises most of the area, along with maintained grassy areas, and a ditch outside the eastern boundary near Williams Avenue.

#### **FLUCFCS Code 411E1: Pine flatwoods, 1-24% exotics**

This upland habitat is primarily south Florida slash pine (*Pinus elliottii* var. *densa*) canopy with understory of saw palmetto (*Serenoa repens*), wax myrtle (*Morella cerifera*), and gallberry (*Ilex glabra*). Much of FLUCFCS code 411 is characterized by relatively dense vines, including muscadine grape (*Vitis rotundifolia*), greenbriar (*Smilax spp.*), poison ivy (*Toxicodendron radicans*), and dewberry (*Rubus* sp.), which may be a result of prolonged fire suppression. Several Category I invasive non-native (exotic) species were identified on the project site including, Brazilian pepper (*Schinus terebinthifolia*), melaleuca (*Melaleuca quinquenervia*), earleaf acacia (*Acacia auriculiformis*), Ceasarweed (*Urena lobata*), and cogongrass (*Imperata cylindrica*). The 411E1 code was used to identify pine flatwoods with 1-24% cover by one or more invasive exotic plants.

#### **FLUCFCS Code 522: Brazilian pepper**

This habitat is comprised of invasive non-native Brazilian pepper located in a disturbed area at the southern boundary of the project area between a borrow area and Able Canal.

**FLUCFCS Code 437: Australian pine**

This highly disturbed habitat is dominated by invasive non-native Australian pine (*Casuarina equisetifolia*) with very sparse herbaceous understory.

**FLUCFCS Code 530: Borrow area**

Two borrow pit areas created from previous mining activities comprise this surface water habitat located within the project boundary.

**Table 3-1 Vegetation Associations and Acreages**

<b>FLUCFCS Code</b>	<b>Description</b>	<b>Acreage</b>	<b>Jurisdictional Status</b>
185	County park	20.2	N
411E1	Pine flatwoods, 1-24% exotics	24.0	N
422	Brazilian pepper	1.2	N
437	Australian pine	6.2	N
530	Borrow area	10.0	SW
		<b>Total N =</b>	<b>51.6</b>
		<b>Total SW =</b>	<b>10.0</b>
		<b>Grand Total:</b>	<b>61.6</b>

**Legend:**

N = Non-jurisdictional  
SW = Surface water

**4.0 SURVEY METHODOLOGY**

The PSS was conducted in accordance with the Lee County Land Development Code, Chapter 10, Article 3, Division 8 (Protection of Habitat) and is valid for Lee County for five years. The PSS included field surveys and a literature review. Field surveys were conducted utilizing pedestrian belt transects. Transects were performed in all vegetation associations (FLUCFCS) listed by the Lee County Protected Species Ordinance, which may be inhabited by listed flora or fauna. The PSS was conducted in accordance with standard FWC survey guidelines as well as methods outlined in the Gopher Tortoise Permitting Guidelines (FWC 2020). The FLUCFCS and Protected Species Survey Map in **Appendix A** depicts the approximate survey transect locations. The

distances between the transects were established to cover a minimum of 80% of each habitat within the project area. **Table 4-1** lists the times and weather conditions during the field surveys.

Literature review sources included Florida's Endangered and Threatened Species (FWC 2018), Florida Natural Areas Inventory (FNAI), USFWS Environmental Conservation Online System (ECOS), as well as the species list referenced in the Lee County Protected Species Ordinance.

Based on the literature review, a compilation of federal and state protected species was developed.

**Table 4-2** lists the species referenced in the Lee County Protected Species Ordinance. A summary of visibility, number and total length of transects performed, and percent of each habitat covered is provided in **Table 4-3**.

**Table 4-1 Dates, Times, Weather Conditions and Purpose of Field Surveys.**

<u>Date</u> <sup>1</sup>	<u>Time</u>	<u>Weather Conditions</u>	<u>Purpose</u> <sup>1</sup>	<u>Ecologist</u>
December 11, 2020	11:00 – 16:00	Clear, Avg. temp 70° F, winds ENE 5-12 mph	PSS	JMK, RDI, SAN
December 16, 2020	09:00 – 15:00	Mostly sunny, Avg. temp 74° F, winds E 6 mph to SW 20 mph	PSS	JMK, RDI, KRP
January 4, 2021	07:02 – 10:05	Mostly sunny, Avg. temp 52° F, winds N/NNE 4-6 mph	Caracara	JMK
January 18, 2021	07:00 – 10:00	Mostly sunny, Avg. temp 60° F, winds NNE 4-5 mph	Caracara	JMK
February 3, 2021	06:55 – 09:55	Partly cloudy, Avg. temp 46° F, winds N/NNW 4-7 mph	Caracara	JMK
February 16, 2021	06:47 – 09:50	Cloudy, Avg. temp 73° F, winds SSW 8 to NNW 10 mph	Caracara	JMK
March 4, 2021	06:40 – 09:40	Cloudy, Avg. temp 63° F, winds N 6 to NNW 7 mph	Caracara	JMK
March 16, 2021	07:15 – 10:15	Partly cloudy, Avg. temp 70° F, winds ESE 7 to S 12 mph	Caracara	JMK
March 23, 2021	17:45 – 21:00	Fair, Avg. temp 70° F, winds WSW 3-7 mph	FBB	JMK, RDI, KRP, GT

1. Field survey dates and times shown include 2021 crested caracara surveys completed to date as of the time of the report.

**Legend:**

PSS = Protected species survey; FBB = Florida bonneted bat roost survey

JMK = Jennifer Korn; SAN = Savannah Neese; RDI = David Isley; KRP = Kyle Philpot; GT = Greg Thomas

**Table 4-2 Potential Lee County Protected Species**

FLUCFCS Code	Descriptions	Potential Protected Species
185	County park	Florida bonneted bat <sup>2,3</sup> Big cypress fox squirrel <sup>3</sup> Crested caracara <sup>3</sup> Gopher tortoise <sup>3</sup> Limpkin <sup>1,3</sup> Little blue heron <sup>3</sup> Snowy egret <sup>1,3</sup> Tricolored heron <sup>3</sup>
411E1	Pine Flatwoods, 1-24% exotics	Eastern indigo snake Gopher tortoise Gopher frog <sup>1</sup> S.E. American kestrel Red-cockaded woodpecker Crested caracara <sup>3</sup> Florida panther Big Cypress fox squirrel Florida black bear <sup>1</sup> Florida bonneted bat <sup>2,3</sup> Fakahatchee burmannia Satinleaf Beautiful pawpaw Florida coontie
530	Borrow areas	American alligator Roseate spoonbill Limpkin <sup>1</sup> Little blue heron Reddish egret Snowy egret <sup>1</sup> Tricolored heron Everglades mink

**NOTES:**

1. Delisted by FWC
2. Not referenced by Lee County Protected Species Ordinance, but listed as endangered by USFWS in November 2013.
3. Based on presence of suitable habitat, although not referenced in Lee County Protected Species Ordinance.

**Table 4-3 Summary of Habitat Survey Coverage.**

<b>FLUCFCS Code</b>	<b>Total Area<sup>1</sup> (acres)</b>	<b>Number of Transects</b>	<b>Transects Total Length (feet)</b>	<b>Average Visibility (feet)</b>	<b>Percent Covered</b>
120	<0.1 <sup>2</sup>	4	100	45	100
185	20.2	10	15,700	45	80
411E1	24.0	45	27,900	30	80
422	1.2	20	1,700	25	80
437	6.2	12	6,200	35	80
530 <sup>2</sup>	10.0	N/A	N/A	N/A	N/A

1. Area surveyed in accordance with Lee County Ordinance No. 89-34 and Lee County Administrative Code No. 13-10.

2. Area surveyed from bank of borrow area.

**5.0 RESULTS/DISCUSSION**

**Table 5-1** summarizes the findings of the PSS performed for the Lehigh Acres Park Expansion project. No evidence of protected flora was observed during the survey. Two State-threatened wading birds were observed foraging within the existing county park area. One potentially occupied gopher tortoise burrow was located within the project boundary and 25-foot buffer. Results of the completed 2021 crested caracara nesting season survey and FBB acoustic survey will be provided under separate cover once complete. No other evidence of listed wildlife was observed onsite during the protected species survey. **Table 5-2** summarizes the non-listed species observed within the project boundary.

**Table 5-1 Lee County Protected Species Summary Sheet**

Protected Species	FLUCFCS Area	Present	Absent	Density
<b>Reptiles/Amphibians:</b>				
American alligator	530		X	
Gopher tortoise	185 411E1	X	X	0.03
Gopher frog	411E1		X	
Eastern indigo snake	411E1		X	
<b>Mammals:</b>				
Everglades mink	530		X	
Florida panther	411E1		X	
Big Cypress fox squirrel	185, 411E1		X	
Florida black bear	411E1		X	
Florida bonneted bat	185, 411E1		X	

**Table 5-1 (continued) Lee County Protected Species Summary Sheet**

Protected Species	FLUCFCS Area	Present	Absent	Density
<b><u>Birds:</u></b>				
Crested caracara	185, 411E1		X	
Little blue heron	185 530	X	X	
SE American kestrel	411E1		X	
Red cockaded woodpecker	411E1		X	
Limpkin	530		X	
Reddish egret	530		X	
Roseate spoonbill	530		X	
Tricolored heron	185 530	X	X	
Snowy egret	185 530	X	X	
<b><u>Plants:</u></b>				
Fakahatchee burmannia	411E1		X	
Satinleaf	411E1		X	
Florida coontie	411E1		X	
Beautiful pawpaw	411E1		X	

**Table 5-2. Observed Non-listed Species.**

<b>Scientific Name</b>	<b>Common Name</b>
<b>BIRDS</b>	
<i>Anhinga anhinga</i>	Anhinga
<i>Ardea alba</i>	Great egret
<i>Bubulcus ibis</i>	Cattle egret
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Buteo lineatus</i>	Red-shouldered hawk
<i>Cairina moschata</i>	Muscovy duck*
<i>Cardinalis cardinalis</i>	Northern cardinal
<i>Coragyps atratus</i>	Black vulture
<i>Corvus brachyrhynchos</i>	American crow
<i>Cyanocitta cristata</i>	Blue jay
<i>Dumetella carolinensis</i>	Gray catbird
<i>Egretta thula</i>	Snowy egret
<i>Eudocimus albus</i>	White ibis
<i>Megaceryle alcyon</i>	Belted kingfisher
<i>Megascops asio</i>	Eastern screech owl
<i>Melanerpes carolinus</i>	Red-bellied woodpecker
<i>Melanerpes erythrocephalus</i>	Red-headed woodpecker
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Quiscalus major</i>	Boat-tailed grackle
<i>Quiscalus quiscula</i>	Common grackle
<i>Pandion haliaetus</i>	Osprey
<i>Phalacrocorax auritus</i>	Double-crested cormorant
<i>Poliophtila caerulea</i>	Blue-gray gnatcatcher
<i>Sayornis phoebe</i>	Eastern phoebe
<i>Setophaga coronata</i>	Yellow-rumped warbler
<i>Setophaga palmarum</i>	Palm warbler
<i>Streptopelia decaocto</i>	Eurasian collared dove*
<i>Sturnus vulgaris</i>	European starling*
<i>Thryothorus ludovicianus</i>	Carolina wren
<i>Zenaida macroura</i>	Mourning dove
<b>MAMMALS</b>	
<i>Procyon lotor</i>	Raccoon
<i>Sciurus carolinensis</i>	Eastern gray squirrel
<i>Sylvilagus floridanus</i>	Eastern cottontail rabbit
<b>REPTILES</b>	
<i>Trachemys scripta scripta</i>	Yellow-bellied slider

\*Non-native species

### **Wading birds/Wood stork**

No evidence of wading bird rookeries was observed during the surveys. Two State-threatened wading birds were observed foraging in the county park area, including the little blue heron (*Egretta caerulea*) and tricolored heron (*Egretta tricolor*). Most of the listed wading bird species common in Florida are transitory in nature and can be found foraging and roosting in a wide variety of upland and wetland habitats. They may occasionally utilize wetlands and ditches onsite either seasonally or year-round for foraging when water levels are appropriate.

The site is within the USFWS 18.6-mile core foraging area (CFA) of at least one wood stork (*Mycteria americana*) colony. The wood stork is listed as federally threatened by the USFWS. No evidence of wood stork rookeries was observed onsite. Further, impacts to onsite surface waters that may provide foraging habitat will be minimal and new storm water management areas will be constructed that will continue to provide wood stork and wading bird foraging habitat upon completion of construction. Therefore, no impacts to wood stork or state-listed wading birds is expected.

### **Crested caracara (*Caracara cheriway*)**

The crested caracara is listed as federally threatened by the USFWS. The project site is located within the USFWS crested caracara consultation area. A 2021 crested caracara nesting season survey is being conducted and the report will be completed by late May 2020. Results of the survey can be provided under separate cover upon request.

### **Nest of unknown origin**

Six small nests of unknown origin were observed onsite, as shown in **Appendix A**. Based on the size and composition of the nests, they are likely of small bird or squirrel origin. No evidence of the Big Cypress fox squirrel (*Sciurus niger avicennia*), listed as Threatened by FWC, was observed during the protected species survey. The gray squirrel (*Sciurus carolinensis*), a non-listed species, was observed onsite during the field surveys.

### **Bald eagle (*Haliaeetus leucocephalus*)**

Although the bald eagle is no longer a listed species, it is afforded protection in accordance with the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act. The USFWS has established a standard 660' protection zone around a bald eagle nest for this region (FWS 2007). FWC GIS data indicates one active bald eagle nest (LE-056) is located south of the project site but within 660' of the project boundary (see **Appendix A**). A pair of adult bald eagles were observed

actively nesting at the location during crested caracara surveys conducted in January and February 2021.

The project site is located within the 660 feet secondary protection zone of eagle nest LE-056. However, the site layout has been designed such that no construction activities are proposed within the 330 feet primary protection zone established by the USFWS.

The USFWS bald eagle management guidelines provide assistance with determining whether new or intermittent proposed activities near a bald eagle nest are likely to take or disturb bald eagles and measures that can be adopted to avoid disturbance. The proposed project includes expansion of an existing park facility with a project footprint of more than 0.5 acres where it is expected the construction activities will be visible from the nest and the nearest tolerated similar activity (operations of a water treatment plant) is approximately 300 feet southeast of the nest tree. To avoid disturbing nesting eagles and their young, USFWS recommends the following:

1. Maintain a buffer of at least 660 feet (200 meters) between the proposed construction activities and the nest (including active and alternate nests);
2. Maintain any established landscape buffers; and
3. If possible, create additional landscape buffers to screen the new activity from the nest.

If the proposed project is unable to meet the above guidelines, USFWS presumes the activities may result in disturbance to nesting bald eagles and recommends obtaining an Eagle Incidental Take Permit from the USFWS in accordance with 50 CFR § 22.26.

The USFWS bald eagle monitoring guidelines recommend biological monitoring of the nesting territory if new activities, including construction of buildings, land clearing and associated activities, are proposed within 660 feet of the nest tree during the nesting season. The USFWS recommends that none of the above-referenced activities be conducted from 0-330 feet during nesting season, even when a buffer zone of less than 330 feet is established in accordance with the National Bald Eagle Management Guidelines. The Guidelines also state that construction activities within 660 feet of the nest tree should, as a general rule, be completed during the non-nesting season. If this is not practicable, the bald eagle monitoring guidelines recommend monitoring by a qualified biologist if work is proposed during nesting season within 330 to 660 feet of the nest tree.

**Red-cockaded woodpecker (*Leuconotopicus borealis*)**

This species is listed as endangered by USFWS and the project lies within the USFWS consultation area. In Florida, red-cockaded woodpeckers (RCW) are typically found in slash, longleaf, or loblolly pine forests with limited understory vegetation maintained by periodic fires. The pine flatwoods habitat within the project boundary is fire suppressed and has been invaded by invasive exotic vegetation, and is not suitable RCW habitat. The closest recorded RCW nests are over 7 miles west of the project boundary. No RCWs were observed during the surveys and no impact to the species is expected.

**Florida bonneted bat (*Eumops floridanus*) Snag/Roost Surveys**

Effective November 1, 2013, the USFWS listed the Florida bonneted bat (FBB) as endangered under the Endangered Species Act (ESA) and established an FBB consultation area. In June 2020, the USFWS proposed designated critical habitat for the species. The project is within the USFWS consultation area but outside proposed designated critical habitat. The USFWS developed a Florida Bonneted Bat Consultation Key (Key) in October 2019 to assist regulatory agency reviewers in making effect determinations for projects located in the FBB consultation area. During the PSS, Johnson Engineering, Inc. ecologists conducted a snag/roost tree survey within the project limits in accordance with the 2019 FBB Guidelines. Pedestrian transects were spaced between 50 and 100 feet apart. Individual trees and snags were observed from multiple angles. All snags observed with suitable roosting cavities or crevices were GPS located.

The results of the FBB roost survey are included in **Table 5-3**. A total of nine (9) dead pine trees (snags) contained one or more cavities or loose bark that were potentially suitable for FBB roosts. Johnson Engineering ecologists used a treetop camera mounted on a 35' survey rod to observe all cavities within reach. No FBB, other bat species, or mammals were found during the initial snag/roost survey on December 16, 2020. Further, no evidence of guano, staining, or auditory chirping was identified during the survey, which could be indicative of bats roosting in the structure. Four cavities were too high to observe using the treetop camera. An FBB emergence survey was conducted on March 23, 2021, and all snags were peeped again prior to the survey. The emergence survey did not reveal any evidence of use by FBB or other bat species. Snags 5 and 6 were contained actively nesting eastern screech owls. A preconstruction snag/roost survey is recommended to ensure no cavities are in use by FBB or cavity nesting birds protected under the Migratory Bird Treaty Act. The October 2019 FBB Guidelines require Full Acoustic/Roost

Surveys for projects greater than 5 acres in size, therefore a Florida bonneted bat acoustic survey will be conducted in spring 2021, and the completed survey report can be provided under separate cover upon request.

**Table 5-3. Snag/Roost Survey Results**

Snag #	Species	DBH (in)	Height (ft)	Cavity Height (ft)	Cavity Direction	Contents
1	Pine	30	50	34	S	Loose bark/Empty
2	Pine	18	45	30	E	Loose bark/Empty
3	Pine	16	50	48	W	Empty
3	Pine	16	50	40	NE	Too high*
4	Pine	18	50	48	W	Too high*
5	Pine	16	36	35	WSW	Nesting eastern screen owl
6	Pine	14	23	22	SW	Nesting eastern screech owl
7	Pine	30	35	-	-	Loose bark/empty
7	Pine	30	35	15	S	Shallow/empty
8	Pine	26	45	32	W	Shallow/empty
9	Pine	26	45	40	E	Too high*
9	Pine	26	62	25	E	Loose bark/Empty

\*FBB emergence surveys on March 23, 2021, revealed no bats emerging from these cavities.

**Florida panther (*Puma concolor coryi*)**

The Florida panther, listed as endangered by the USFWS, generally requires expansive remote tracts of land with adequate prey, cover, and minimal amounts of disturbance. Preferred panther habitats include hardwood forest, pine forest, and cypress swamp, but non-preferred habitats, and riparian areas (both natural and man-made) can serve as travel corridors.

No evidence of Florida panther use was observed during the surveys. However, the site does contain habitat types suitable for this species. On February 19, 2007, the USFWS established a revised Florida Panther Focus Area map and “Panther Key and Rationale” (USFWS 2007). Most of the project is in the secondary zone of the Florida Panther Focus Area. During environmental

permitting, the USFWS will review the effects of the project on the Florida panther and may assess compensatory mitigation requirements for the potential loss of panther habitat. The amount of compensation required for impacts to panther habitat, referred to as panther habitat units (PHUs), can be calculated using the USFWS panther habitat assessment methodology. If required, the number of PHUs will be established during the state and/or federal Section 404 environmental permit application review. Typically, PHU requirements are addressed by the purchase of credits from a federally approved wetland mitigation or conservation bank.

**Gopher tortoise (*Gopherus polyphemus*)**

Survey transects revealed the presence of one (1) potentially occupied juvenile gopher tortoise burrow as depicted in **Appendix A**. One additional adult potentially occupied gopher tortoise burrow was located greater than 25’ outside the project boundary and will remain unaffected by the project. Since the survey transects were established to cover a minimum of 80% of each suitable habitat type, it follows that approximately 20% of these areas may contain additional species beyond those identified. Please refer to the gopher tortoise density calculations in **Table 5-4**. Per FWC guidelines (2020), a 100% gopher tortoise survey will be required prior to construction and appropriate permits obtained from FWC to safely relocate any impacted gopher tortoises to an FWC permitted recipient site.

**Table 5-4. Gopher Tortoise Density Calculations**

**ESTIMATE OF GOPHER TORTOISE POPULATION BY SUITABLE HABITAT FOR PROJECT BOUNDARY**

SUITABLE HABITAT (FLUCFCS CODE)	# PO BURROWS OBSERVED (>130mm)	CONVERSION FACTOR	GT SURVEY % COVERAGE	ESTIMATED POPULATION <sup>2</sup>	HABITAT ACREAGE	GT DENSITY PER ACRE <sup>3</sup>
185	0	0.5	80	0.0	20.2	<b>0.00</b>
411E1	1	0.5	80	0.5	24.2	<b>0.03</b>
422	0	0.5	80	0.0	1.2	<b>0.00</b>

**Population Estimate & Density Notes**

- Gopher tortoise conversion factor of 0.5 used per FWC Gopher Tortoise Permitting Guidelines (Jan 2020)
- Estimated tortoise population = (# active and inactive burrows >130 mm) x GT conversion factor (0.5) / average % cover of transects
- Tortoise density per acre = [# active and inactive burrows x GT conversion factor (0.5) / average % cover of transects] / total habitat acreage
- PO = Potentially Occupied; GT = Gopher Tortoise

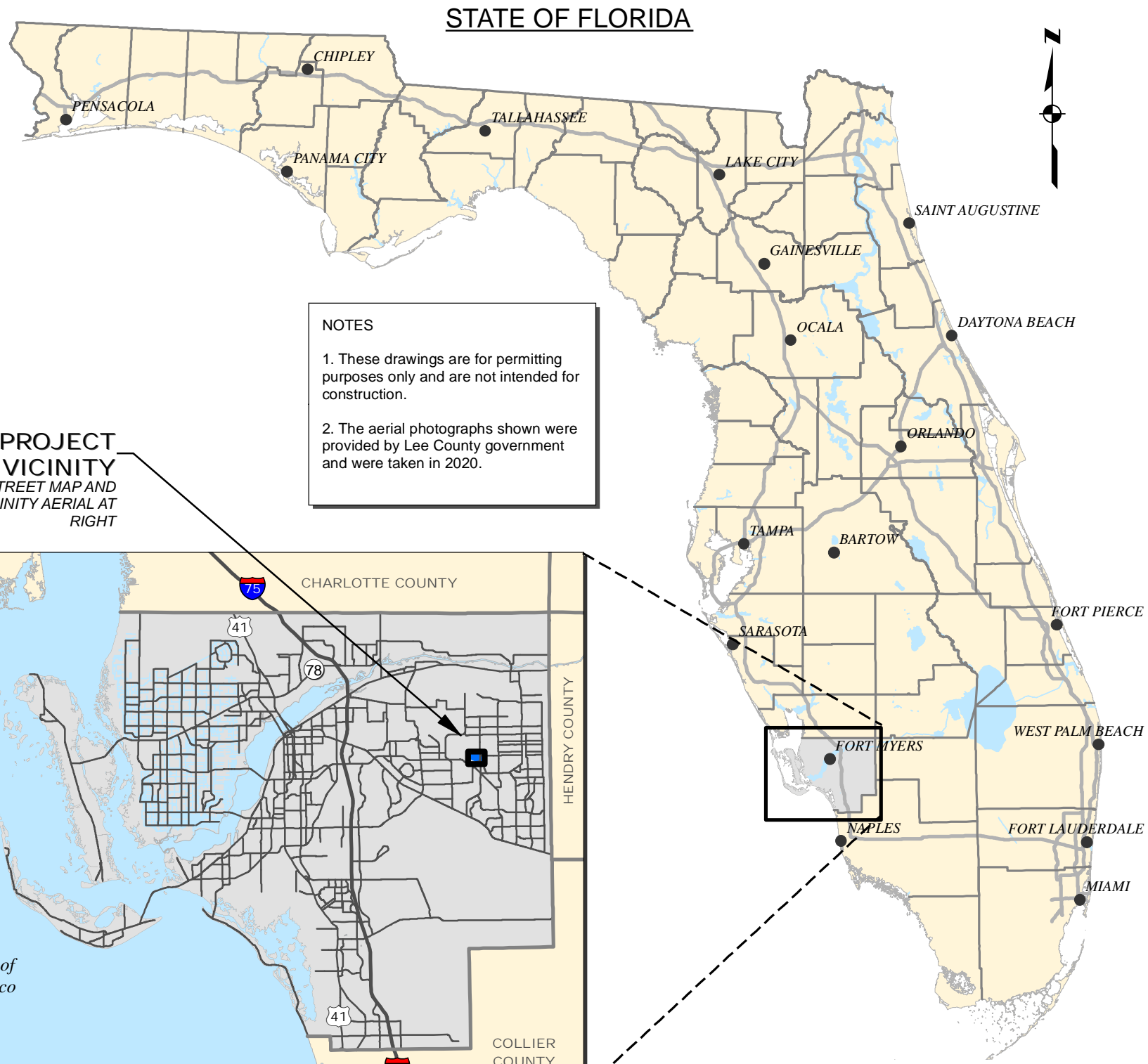
## 6.0 REFERENCES

- Florida Department of Transportation, State Topographic Bureau, Thematic Mapping Section, 1999. Florida Land Use, Cover and Forms Classification System. Procedure No. 550-010-001-a.
- Florida Fish and Wildlife Conservation Commission. 2021. Bald Eagle Nest Locator. <https://public.myfwc.com/FWRI/EagleNests/nestlocator.aspx>  
(Site accessed September February 2021)
- Florida Fish and Wildlife Conservation Commission. 2018. Florida's Endangered and Threatened Species. <https://myfwc.com/media/1945/threatend-endangered-species.pdf>  
(Site accessed February 2021)
- Florida Fish and Wildlife Conservation Commission. 2020. Gopher Tortoise Permitting Guidelines. Tallahassee, Florida. <https://myfwc.com/media/11854/gt-permitting-guidelines.pdf>  
(Site accessed February 2021)
- Lee County Land Development Code, Chapter 10, Article 3, Division 8 (Protection of Habitat). <http://www.municode.com/Resources/gateway.asp?pid=12625&sid=9>.  
(Site accessed February 2021)
- Natural Resources Conservation Service. Soil Survey of Lee County, Florida. U.S. Department of Agriculture, Washington, D.C.
- U.S. Fish and Wildlife Service. 2007. National Bald Eagle Management Guidelines. 23 pp.
- U.S. Fish and Wildlife Service. 2007. February 19, 2007 Letter with Florida Panther Key and Rationale. Vero Beach, Florida, 9pp.
- U.S. Fish and Wildlife Service Information for Planning and Conservation, Environmental Conservation Online System. 2021. <https://ecos.fws.gov/ipac/location/index>  
(Site accessed December 2020)
- U.S. Fish and Wildlife Service. 2016. Crested Caracara Survey Protocol Additional Guidance 2016 – 2017 Breeding Season.

# **APPENDIX A**

## **PROTECTED SPECIES SURVEY MAP SET**

O:\2020\20203179-000ArcGIS\Loc map 11x17.mxd Date: 2/26/2021 Time: 4:34:20 PM User: JMK

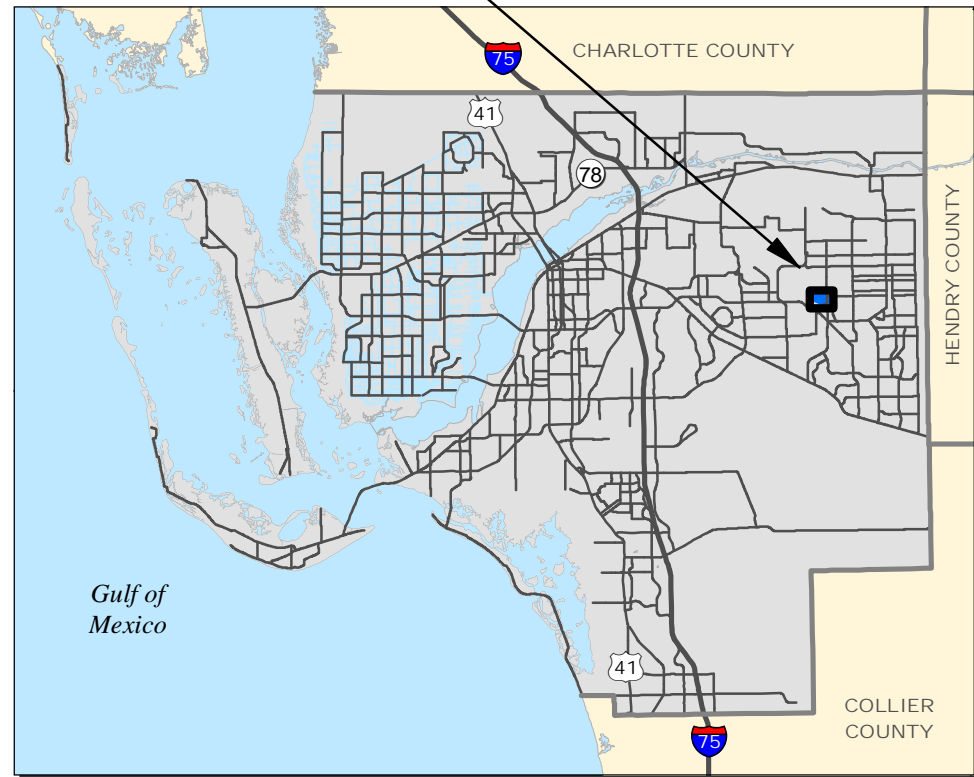


**STATE OF FLORIDA**

**NOTES**

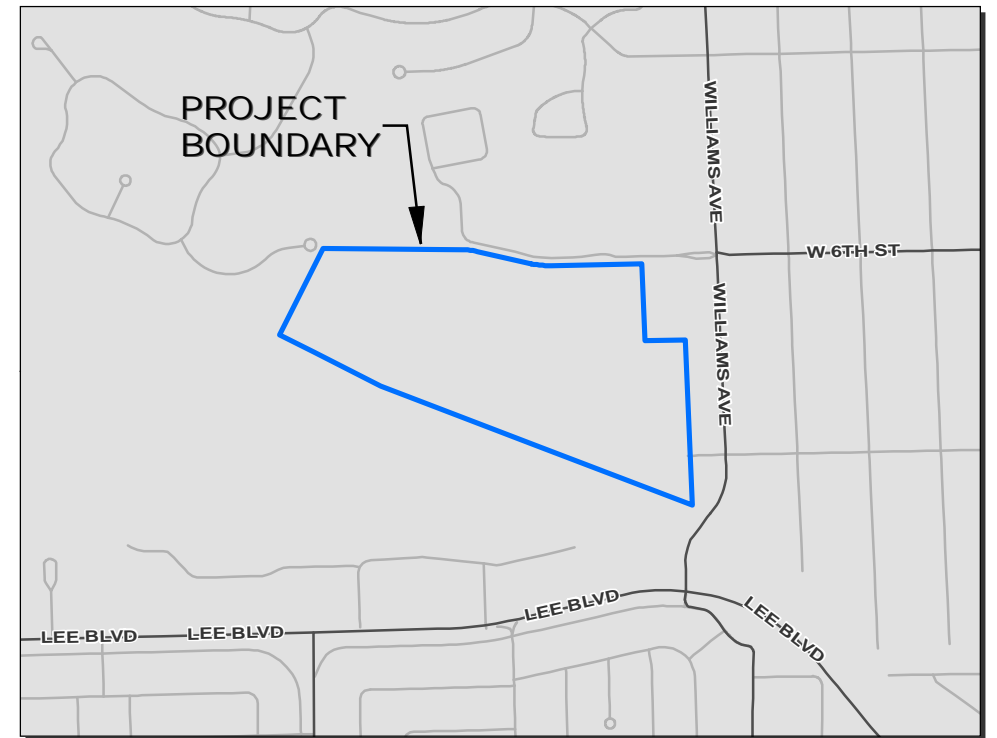
1. These drawings are for permitting purposes only and are not intended for construction.
2. The aerial photographs shown were provided by Lee County government and were taken in 2020.

**PROJECT VICINITY**  
SEE STREET MAP AND VICINITY AERIAL AT RIGHT



**LEE COUNTY**  
N.T.S

Sections 30, Township 44 S, Range 27 E  
Latitude: 26.619911; Longitude: -81.650854



**STREET MAP**  
N.T.S



**VICINITY AERIAL**  
N.T.S

Lehigh Acres Park Expansion  
Lee County, Florida



JOHNSON ENGINEERING, INC.  
2122 JOHNSON STREET  
P.O. BOX 1550  
FORT MYERS, FLORIDA 33902-1550  
PHONE (239) 334-0046  
FAX (239) 334-3661  
E.B. #642 & L.B. #642

Location Map

DATE	PROJECT NO.	FILE NO.	SCALE	SHEET
Feb 2021	20203179-000	00-00-00	1" = 0000'	1

Lehigh Acres Park Expansion  
 Lee County, Florida

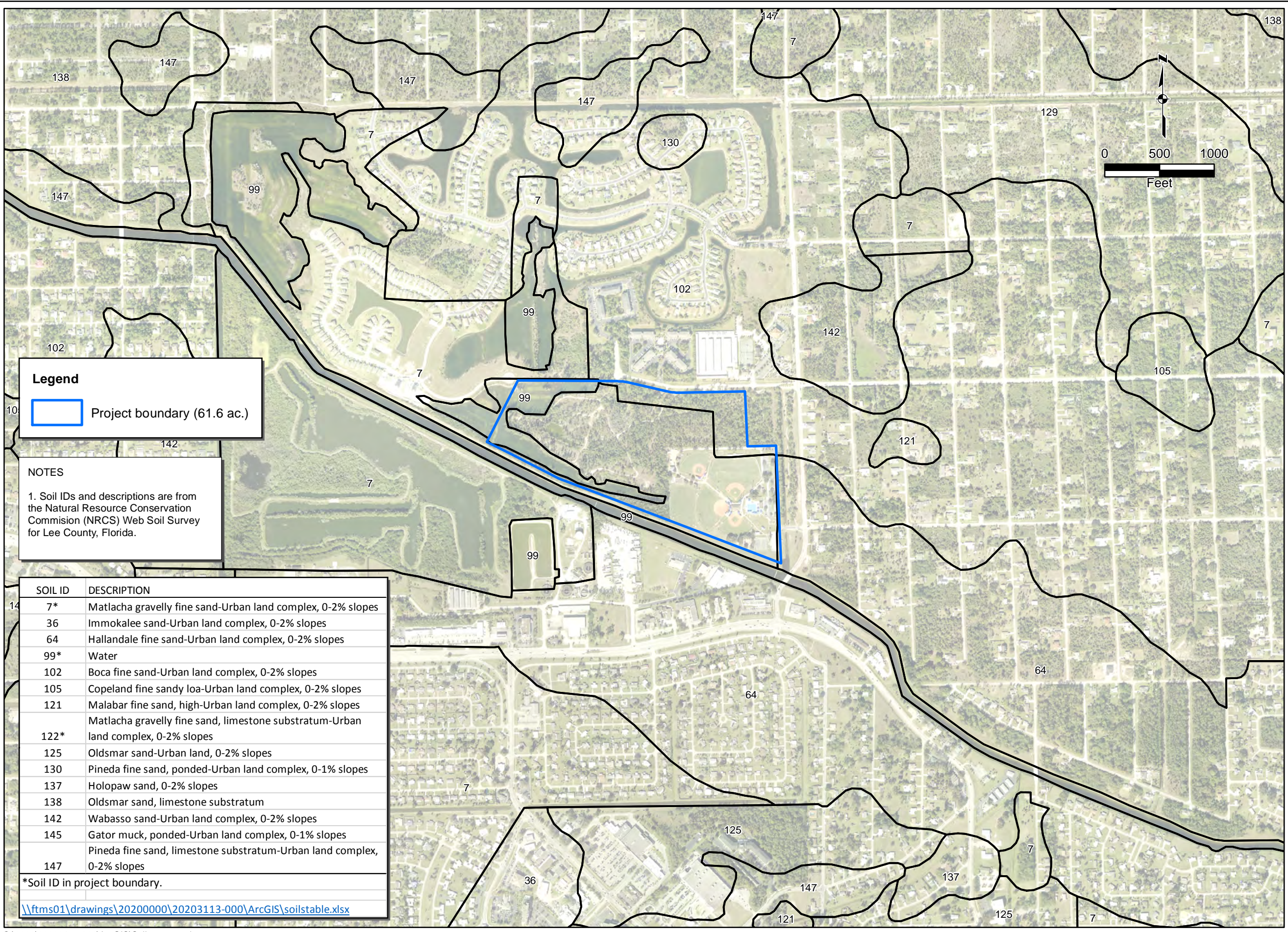
NO.	DATE	DESCRIPTION

DATE: Feb 2021  
 PROJECT NO. 20203179-000  
 FILE NO. 00-00-00  
 SCALE: As Shown

Soils Map

SHEET NUMBER

2



**Legend**

Project boundary (61.6 ac.)

**NOTES**

1. Soil IDs and descriptions are from the Natural Resource Conservation Commission (NRCS) Web Soil Survey for Lee County, Florida.

SOIL ID	DESCRIPTION
7*	Matlacha gravelly fine sand-Urban land complex, 0-2% slopes
36	Immokalee sand-Urban land complex, 0-2% slopes
64	Hallandale fine sand-Urban land complex, 0-2% slopes
99*	Water
102	Boca fine sand-Urban land complex, 0-2% slopes
105	Copeland fine sandy loa-Urban land complex, 0-2% slopes
121	Malabar fine sand, high-Urban land complex, 0-2% slopes
122*	Matlacha gravelly fine sand, limestone substratum-Urban land complex, 0-2% slopes
125	Oldsmar sand-Urban land, 0-2% slopes
130	Pineda fine sand, ponded-Urban land complex, 0-1% slopes
137	Holopaw sand, 0-2% slopes
138	Oldsmar sand, limestone substratum
142	Wabasso sand-Urban land complex, 0-2% slopes
145	Gator muck, ponded-Urban land complex, 0-1% slopes
147	Pineda fine sand, limestone substratum-Urban land complex, 0-2% slopes

\*Soil ID in project boundary.

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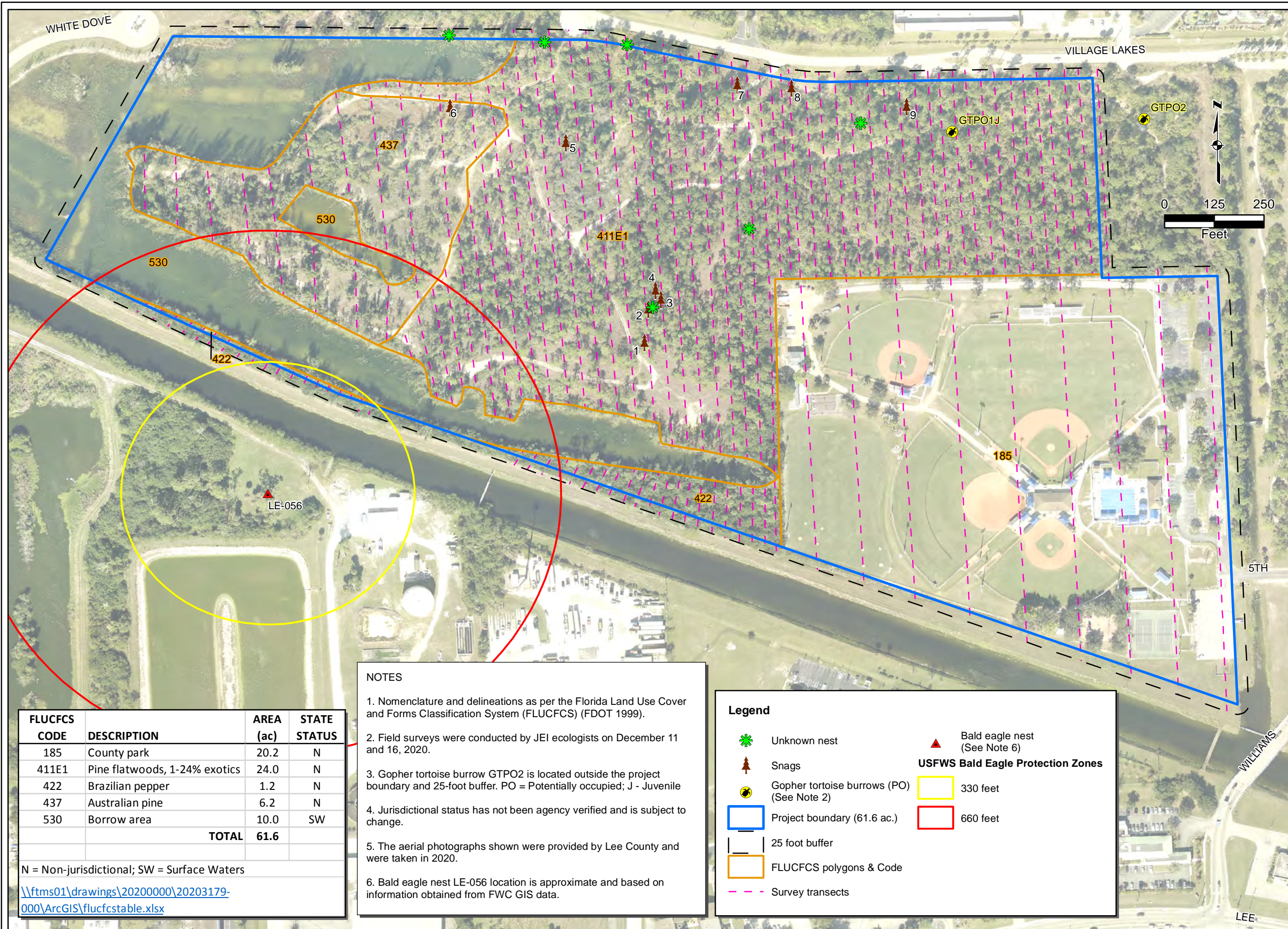
Lehigh Acres Park Expansion  
 Lee County, Florida

NO.	DATE	DESCRIPTION

DATE: Feb 2020  
 PROJECT NO.: 20203179-000  
 FILE NO.: 00-00-00  
 SCALE: As Shown

FLUCFCS &  
 Protected Species  
 Survey  
 Map

SHEET NUMBER



FLUCFCS CODE	DESCRIPTION	AREA (ac)	STATE STATUS
185	County park	20.2	N
411E1	Pine flatwoods, 1-24% exotics	24.0	N
422	Brazilian pepper	1.2	N
437	Australian pine	6.2	N
530	Borrow area	10.0	SW
<b>TOTAL</b>		<b>61.6</b>	

N = Non-jurisdictional; SW = Surface Waters

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**NOTES**

- Nomenclature and delineations as per the Florida Land Use Cover and Forms Classification System (FLUCFCS) (FDOT 1999).
- Field surveys were conducted by JEI ecologists on December 11 and 16, 2020.
- Gopher tortoise burrow GTPO2 is located outside the project boundary and 25-foot buffer. PO = Potentially occupied; J - Juvenile
- Jurisdictional status has not been agency verified and is subject to change.
- The aerial photographs shown were provided by Lee County and were taken in 2020.
- Bald eagle nest LE-056 location is approximate and based on information obtained from FWC GIS data.

**Legend**

- Unknown nest
- Snags
- Gopher tortoise burrows (PO) (See Note 2)
- Bald eagle nest (See Note 6)
- Project boundary (61.6 ac.)
- 330 feet
- 660 feet
- 25 foot buffer
- FLUCFCS polygons & Code
- Survey transects