

SR 60 Grade Separation Over CSX Railroad

Financial Project ID 436559-1-52-01

Polk County

Endangered Species Biological Assessment



Prepared For:

The Florida Department of Transportation

District One

September 2016

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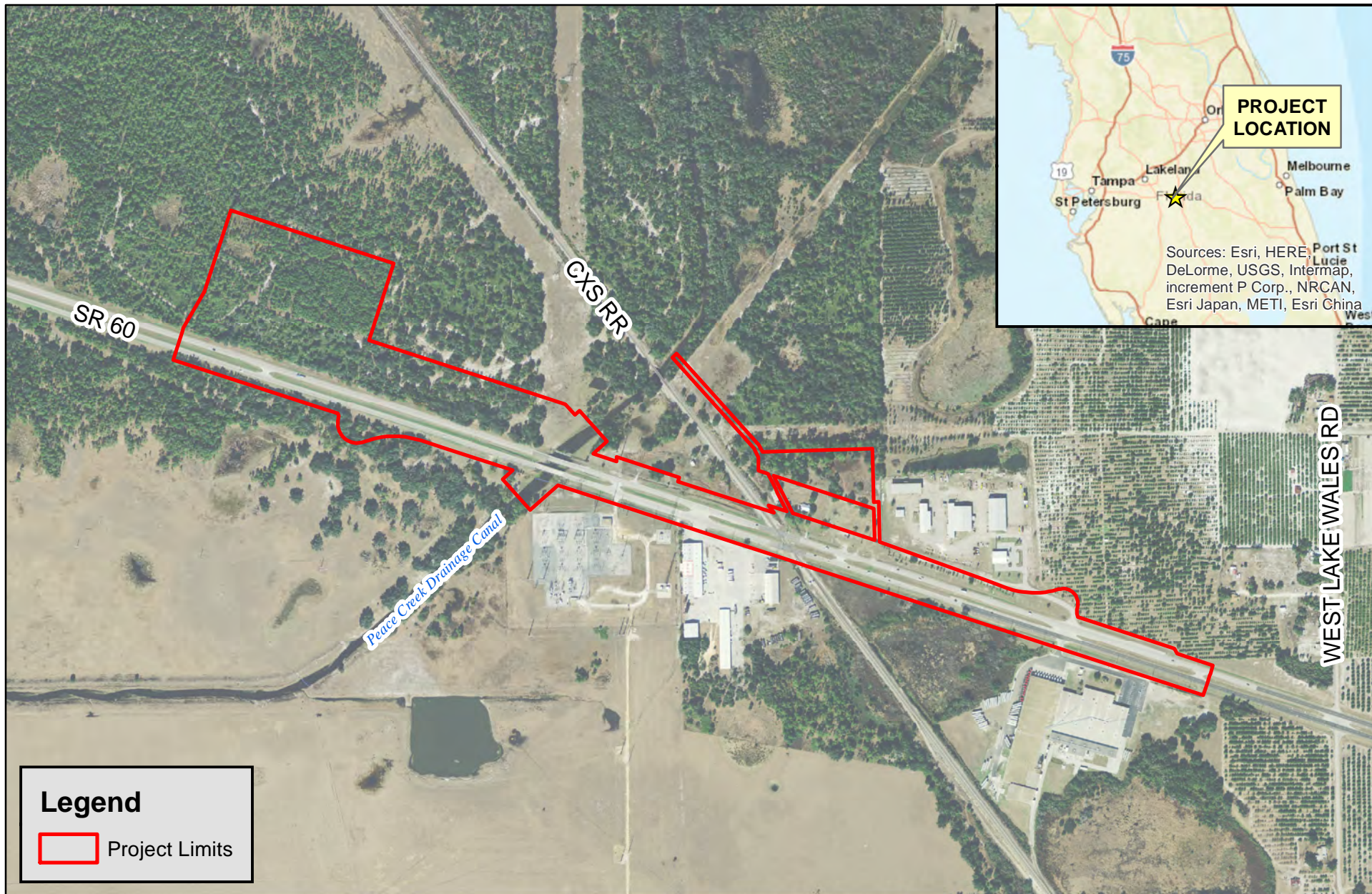
1.0 INTRODUCTION

District One of the Florida Department of Transportation (FDOT) proposes to make improvements to an approximately one-mile long segment of SR 60. The major component of the project consists of elevating the SR 60 roadway over the existing CSX railroad at-grade crossing. The roadway will be elevated using permanent retaining walls (i.e. MSE walls). Three new pairs of SR 60 bridge structures are proposed over the existing CSX railroad, over an existing underground petroleum pipeline and frontage road, and over the Peace Creek Drainage Canal (PCDC). The existing eastbound SR 60 bridge over the PCDC will be rehabilitated and re-used for frontage road access and the westbound bridge will be removed.

Sidewalks, bicycle lanes, and three new frontage roads will be included in the improvements. Two off-site stormwater management facilities (SMFs) are proposed. Right-of-way acquisition will occur to accommodate the elevation of SR 60, SMFs, and the frontage roads.

The project is located in Section 1 of Township 30 South, Range 26 East in Polk County. This location is approximately 11 miles to the east of Bartow and four miles to the west of Lake Wales. Figure 1 provides an overview of the project location. Figure 2 provides the project on a USGS topographic map.

This Endangered Species Biological Assessment (ESBA) documents the results of environmental investigations, surveys, analysis, and research conducted to determine listed or protected species that may occur within the project area, if any, and determine the project's effects to each species.



SR 60 Grade Separation over CSX Railroad
 FPID 436559-1-52-01
 Project Location Map

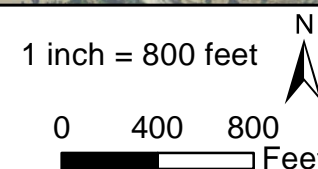
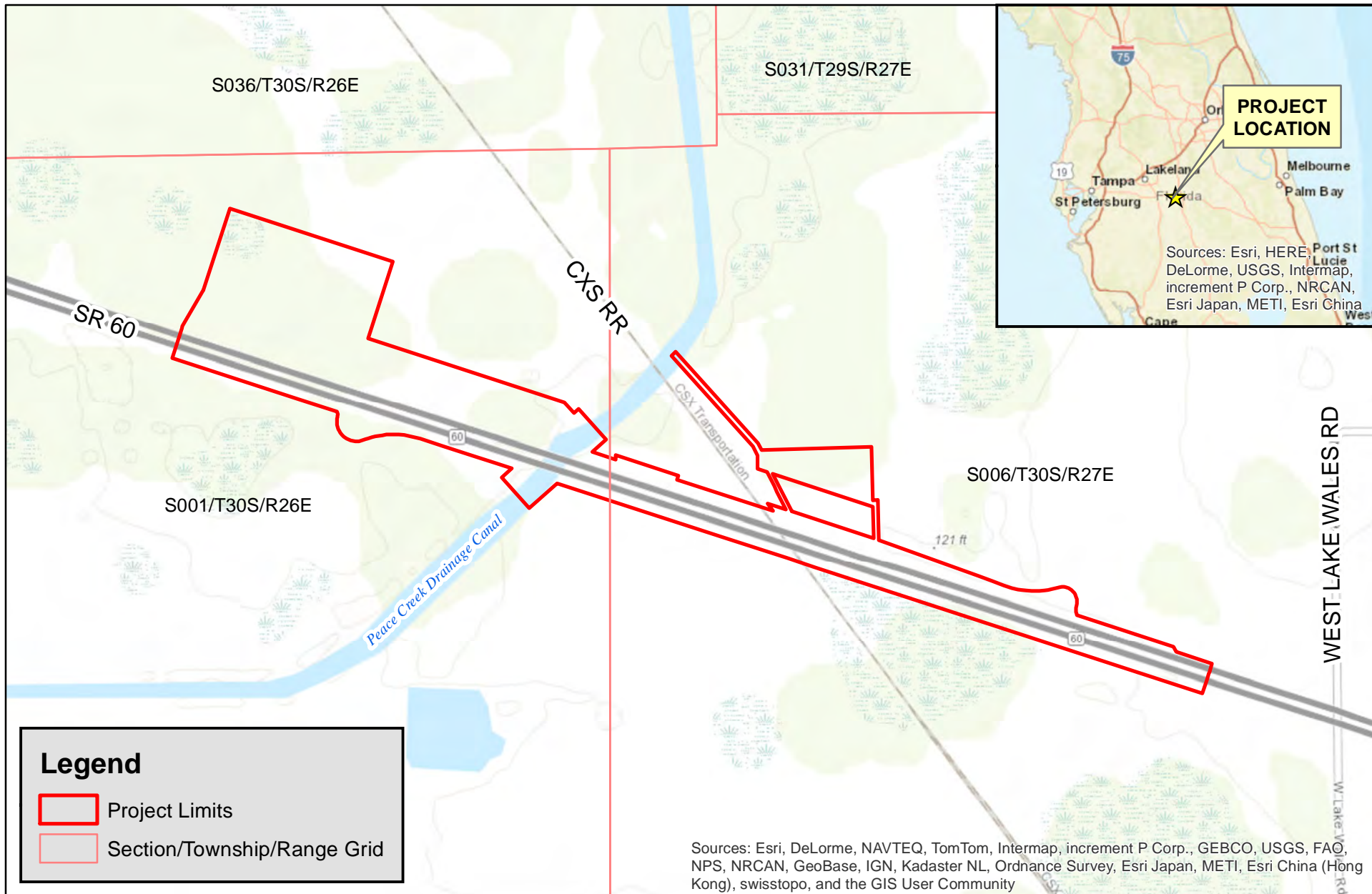


Figure 1



SR 60 Grade Separation over CSX Railroad
 FPID 436559-1-52-01
 Project Location Map on USGS Base Map

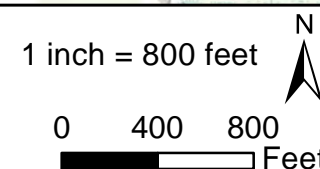


Figure 2

2.0 EXISTING ENVIRONMENTAL CHARACTERISTICS

2.1 Soils

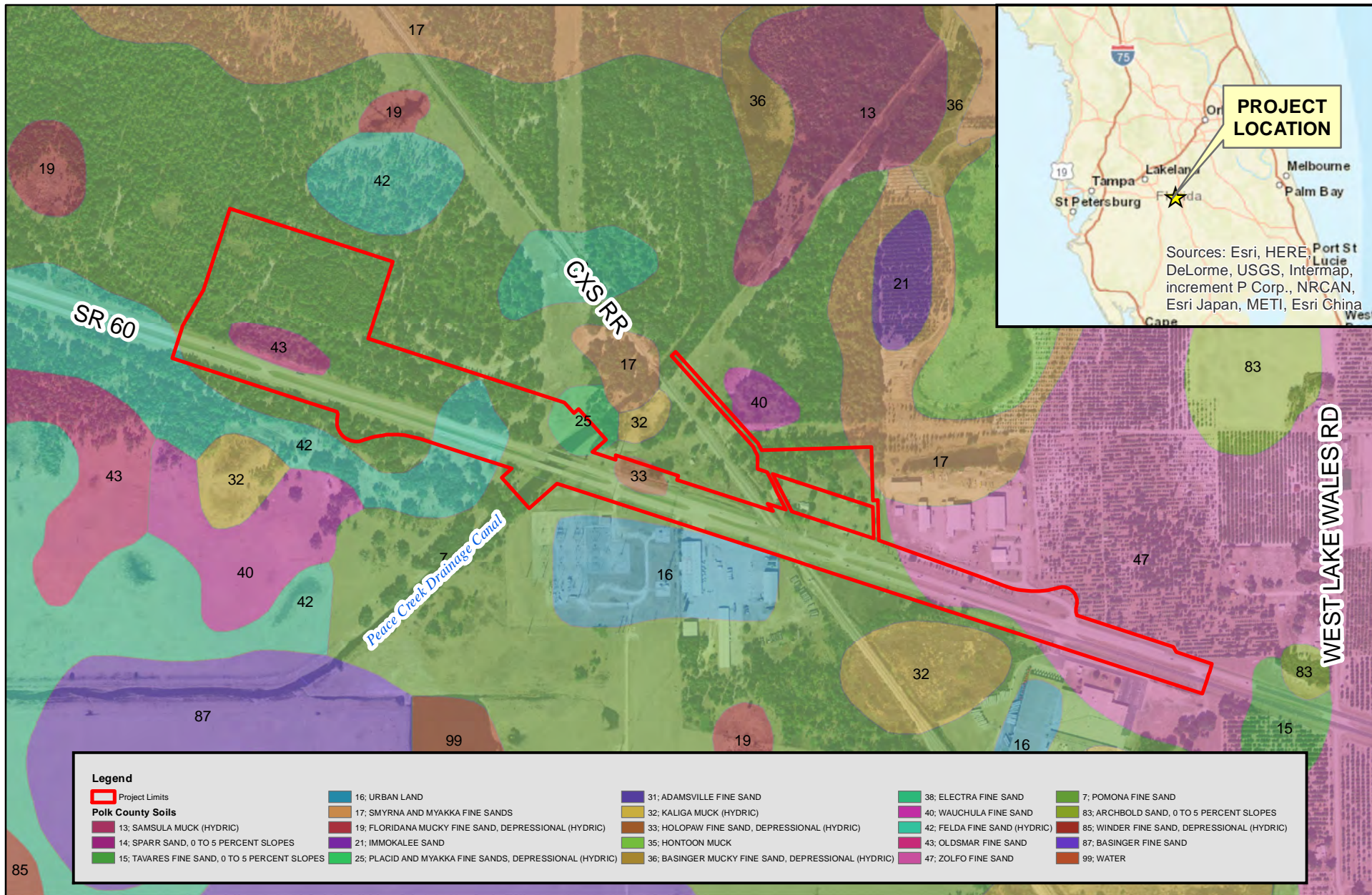
The Natural Resources Conservation Service (NRCS) mapping for Polk County (NRCS, SSURGO, Detailed Soils, Florida [GIS Data], 2012) identified nine soil units within the project area (Figure 3). These are Pomona fine sand (7); Urban Land (16); Smyrna and Myakka fine sands (17); Placid and Myakka fine sands, depressional (25); Holopaw fine sand, depressional (33); Wauchula fine sand (42); Oldsmar fine sand (43); and Zolfo fine sand (47). General soil descriptions are provided below as provided in the Polk County Soil Survey (NRCS, Soil Survey of Polk County, Florida, 1990).

(7) Pomona fine sand – Pomona fine sand is a poorly drained soil found in broad areas on flatwoods. This soil has a seasonal high water table at a depth within 12 inches of the surface for 2 to 4 months. This soil type is not listed hydric by the *Hydric Soils of Florida Handbook* (Hurt, 2007), but may contain up to 20% hydric soil inclusions. This soil type makes up 72% of the soils within the project area.

(16) Urban Land – Urban land is a map unit consisting of areas that are more than 85% covered by buildings, streets, houses, schools, shopping centers, and industrial complexes. Because soils in urban areas have been reworked, they can no longer be recognized as a natural soil. Fill material has been added in wet areas to alleviate water problems or soil material has been excavated to blend with the surrounding landscape. This soil type is not listed as hydric by the *Hydric Soils of Florida Handbook*. This soil type makes up less than 1% of the soils within the project area.

(17) Smyrna and Myakka fine sands – Smyrna and Myakka fine sands consist of poorly drained soils in broad areas on flatwoods. It is about 55% Smyrna and 40% Myakka soils, but the proportion varies in each mapped area. Smyrna and Myakka soils have a seasonal high water table at a depth within 12 inches of the surface for 1 to 4 months. This soil type is not listed as hydric by the *Hydric Soils of Florida Handbook*, but may have up to 17% inclusions of hydric soil types. These soils make up less than 1% of the soils within the project area.

(25) Placid and Myakka fine sands, depressional – Placid and Myakka fine sands consist of very poorly drained soils in depressions mostly on flatwoods. Typically about 60% of the map unit is Placid soil and 30% is Myakka soil, but the proportion varies in each mapped area. Placid soil is ponded for at least six months during most years. Myakka soil has a seasonal high water table that is above the surface for about six months during most years. This soil type is listed as hydric by the *Hydric Soils of Florida Handbook*. This soil type makes up about 2% of the soils within the project area.



SR 60 Grade Separation over CSX Railroad FPID 436559-1-52-01 Soils Map

1 inch = 800 feet

0 400 800 Feet

Figure 3

(33) Holopaw fine sand, depressional – Holopaw fine sand, depressional is a very poorly drained soil in wet depression on flatwoods. This soil is ponded for more than 6 months during most years. This soil type is listed as hydric by the *Hydric Soils of Florida Handbook*. Holopaw fine sand, depressional soils make up about 2% of the soils within the project area.

(40) Wauchula fine sand – Wauchula fine sand is a poorly drained soil on low, broad areas on flatwoods. This soil has a seasonal high water table within a depth of 12 inches for 1 to 4 months during most years. Wauchula fine sand is not listed as hydric by the *Hydric Soils of Florida Handbook* but may have up to 22% inclusions of hydric soils. This soil type makes up less than 1% of the soils within the project area.

(42) Felda fine sand – Felda fine sand is poorly drained soil found on sloughs or low hammocks on flatwoods. This soil has a seasonal high water table within a depth of 12 inches of the surface for 2 to 4 months during most years. In slough areas the surface is covered by shallow, slowly moving water for 1 to 7 or more days during periods of heavy rainfall. Felda fine sand is listed as hydric by the *Hydric Soils of Florida Handbook*, but may have 5% inclusions of non-hydric soil types. This soil type makes up about 5% of the soil types within the project area.

(43) Oldsmar fine sand – Oldsmar fine sand is a poorly drained soil in broad areas on flatwoods. This soil has a seasonal high water table within 12 inches of the surface for 1 to 4 months during most years and at a depth of 12 to 40 inches for more than 6 months. The high water table recedes to a depth of more than 40 inches during extended dry periods. Oldsmar fine sand is not listed as hydric by the *Hydric Soils of Florida Handbook*, but may have up to 20% inclusions of hydric soil types. This soil type makes up less than 4% of the soil types within the project area.

(47) Zolfo fine sand – Zolfo fine sand is somewhat poorly drained soil found on low, broad ridges and knolls on flatwoods. This soil has a seasonal high water table at a depth of 24 to 40 inches for 2 to 6 months during most years and at a depth of 10 to 24 inches for up to 2 weeks in some years. Zolfo fine sand is not hydric and not listed in the *Hydric Soils of Florida Handbook*. This soil type makes up about 14% of the soil types within the project area.

2.2 Existing Land Use

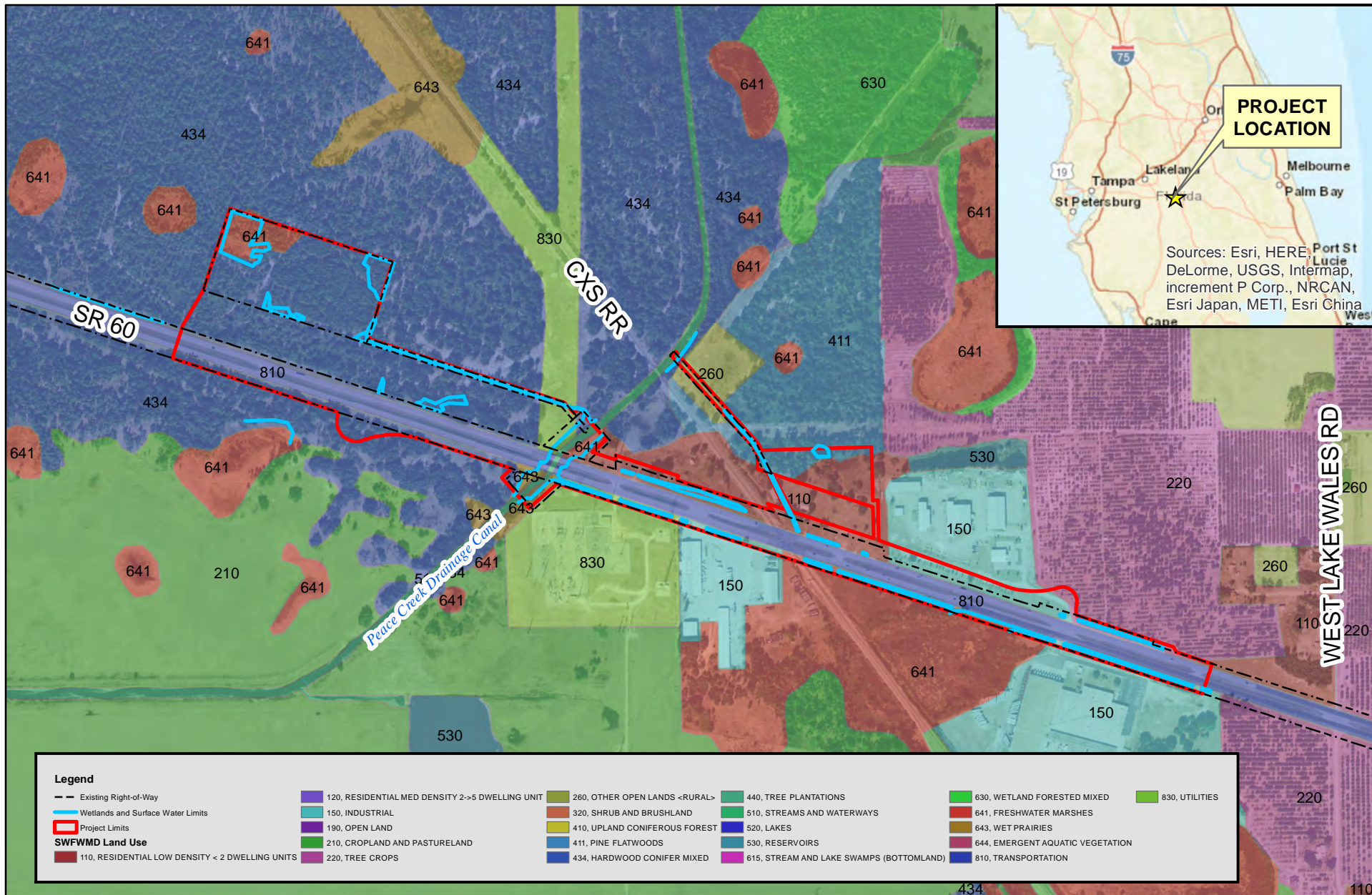
The project is within the boundaries of unincorporated Polk County about 11 miles east of Bartow and four miles west of Lake Wales. The project area is 64.39 acres. About 47.55 acres are currently owned by FDOT. Acquisition to accommodate the improvements will be required. Figure 4 is a map depicting the land uses as mapped by Southwest Florida Water Management District (SWFWMD) (SWFWMD, 2011), and Figure 5 is a wetlands location map. Land uses are listed in Table 1 below. Note that the project acreage given and limits shown on the figures represent the area that was evaluated for environmental impacts, and limited areas of acquisition are proposed with the boundary shown.

Table 1 Land Uses in Existing and Proposed Right-of-Way

Land Use Description	FLUCFCS* Code	Acres in Existing R/W	% in Existing R/W
Residential Low Density < 2 Dwelling Units	110	5.44	8
Industrial	150	2.18	3
Tree Crops	220	0.79	1
Other Open Lands <Rural>	260	0.31	1
Pine Flatwoods	411	1.74	3
Hardwood Conifer Mixed	434	29.60	45
Streams And Waterways	510	2.80	4
Mixed Wetland Hardwoods	617	0.68	1
Freshwater Marshes	641	1.73	4
Wet Prairies	643	0.76	1
Transportation	810	16.96	26
Utilities	830	1.40	3
		64.39 ac	100%

*FLUCFCS=Florida Land Use, Cover and Forms Classification System (FDOT, 1999)

The major land use within the existing right-of-way is Transportation (810) at about 26%. The next highest land use is Hardwood Conifer Mixed (434) at 45% due to the proposed SMF parcels. Although Residential (110) land use is mapped in both the proposed and existing right-of-way, this land use is historic and the land area is currently vacant with no buildings on-site. There are no residential relocations. Post-construction condition, the land uses will be Transportation (810) and Streams and Waterways (510). Wetlands and surface waters occurring within the project include disturbed herbaceous and shrubby wetlands located and roadside drainage ditches that function as conveyance for SR 60. These are jurisdictional to the SWFWMD and the U.S. Army Corps of Engineers (USACE). The Peace Creek Drainage Canal is ultimately connected to the Peace River to the west.



SR 60 Grade Separation over CSX Railroad FPID 436559-1-52-01 FLUCFCS / Land Use Map

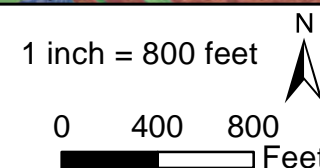
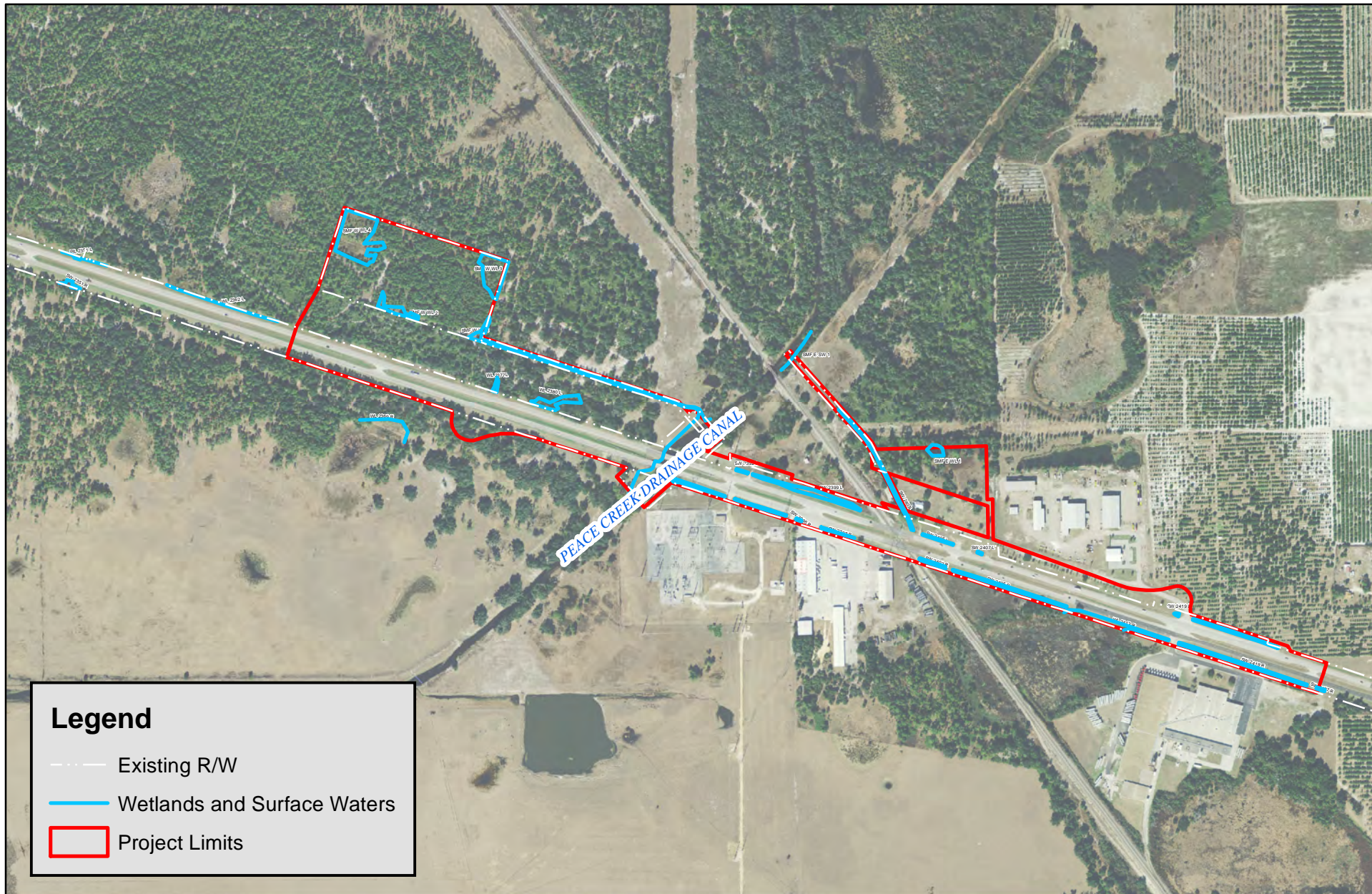


Figure 4



Legend

- Existing R/W
- Wetlands and Surface Waters
- Project Limits



SR 60 Grade Separation over CSX Railroad
 FPID 436559-1-52-01
 Pond Site Locations, Wetlands and Surface Waters

1 inch = 800 feet
 0 400 800
 Feet



Figure 5

3.0 THREATENED AND ENDANGERED SPECIES

The project was assessed for the presence of suitable habitat for federally and state-listed species. State-listed species are those faunal species contained in the State of Florida's Endangered and Threatened Species List of Wildlife (Florida's Species List) or flora designated endangered, threatened, and commercially exploited as listed in Chapter 5B-40, F.A.C. The Florida Department of Agriculture and Consumer Services (FDACS) through Chapter 5B-40, F.A.C. maintains the State list of plants.

The Florida Fish and Wildlife Conservation Commission (FWC) maintains the state list of animals in accordance with Rules 68a-27.003 and 68A-27.005 F.A.C. In January 2013, Florida's Species List was consolidated to include all federally-listed Endangered or federally-listed Threatened species. In addition, the state has a listing process to identify species that are not federally listed but at risk of extinction. These species are called state-designated Species of Special Concern.

The U.S. Fish and Wildlife Services (USFWS) oversees the Federal list of plants and animals (50 CFR 23 and 50 CFR 17 respectively). The Endangered Species Act of 1973 (ESA), as amended, protects endangered and threatened species and their habitats. Section 7 of the ESA requires Federal agencies to use their legal authorities to promote the conservation purposes of the ESA and to consult with the USFWS and the National Marine Fisheries Service (NMFS), as appropriate, to ensure that effects of actions they authorize or fund are not likely to jeopardize the continued existence of listed species. This ESA provides information to the jurisdictional agencies to reach an effects determination for listed flora and fauna associated with the proposed project.

3.1 Methodology

Literature reviews, agency database searches, GIS analyses, aerial photography (FDOT Survey and Mapping, 2011), NRCS soils data for Polk County, and land use maps from SWFWMD were reviewed prior to site visits. Project Development and Environment (PD&E) Study documents were also reviewed (agency correspondence and the General Wildlife Technical Memo of February 2015). The FWC Eagle Nest locator map viewer was used as a screening tool. GIS analyses included a review of USFWS consultation areas and critical habitats, Wood Stork nesting colonies, and core foraging areas (CFA). A standard data report was obtained from the Florida Natural Areas Inventory (FNAI).

Field reviews of potential habitat were conducted to identify threatened or endangered species occurring or potentially occurring in the project area. Site visits by qualified biologists occurred in December 2014; April, June, July, and August 2015; and January, February, March, and April 2016.

3.2 Agency Coordination

A PD&E Study is being conducted for the project and will be completed in 2016; the resulting documentation will be a State Environmental Impact Report (SEIR). During the PD&E phase of the project, agency coordination was initiated. The design and permitting phase is overlapping with the PD&E phase to facilitate a quicker delivery process.

3.3 Listed Species Potentially within the Project Area

Table 2 is a list of threatened and endangered species potentially present in the project area compiled with information available from the FWS and the Florida Natural Areas Inventory (FNAI). The FWC Eagle Nest Locator website was also used as a reference. The PD&E Study documents were used as a reference.

Table 2 Listed or Protected Species Potentially Present in Project Area

Species	Status	Habitat Requirement	Habitat in Project Limits	Potential for Occurrence
Federally-Listed Reptiles				
American Alligator (<i>Alligator mississippiensis</i>)	FT-S/A	swampy areas, rivers, streams, lakes and ponds	Yes	High
Eastern Indigo Snake (<i>Drymarchon corais couperi</i>)	FT	scrub, sandhill, wet prairies, and mangrove swamps	Yes	Low
Sand Skink (CA) (<i>Neoseps reynoldsi</i>)	FT	Rosemary scrub, sand pine and oak scrub, scrubby flatwoods, turkey oak ridges within scrub, sandy edges of citrus groves occupying former scrub	No	None
Blue-tailed Mole Skink (CA) (<i>Eumeces egregius lividus</i>)	FT	rosemary, oak, and sand pine scrubs; occasionally in turkey oak barrens, sandhill, and xeric hammocks	No	None
Federally-Listed Birds				
Florida Scrub Jay (CA) (<i>Aphelocoma coerulescens</i>)	FT	fire-dominated, low-growing oak scrub habitat on well-drained soil	No	None
Audubon's Crested Caracara (CA) (<i>Polyborus plancus audubonii</i>)	FT	dry prairie, pasture lands with cabbage palm; cabbage palm/live oak hammocks and shallow ponds and sloughs; prefer cabbage palms for nesting	Yes	Low

Species	Status	Habitat Requirement	Habitat in Project Limits	Potential for Occurrence
Wood Stork (CFA) (<i>Mycteria americana</i>)	FT	forested wetlands, freshwater marshes, swamps, and ponds	Yes	High
Everglade Snail Kite (CA) (<i>Rostrhamus sociabilis plumbeus</i>)	FE	large, open freshwater marshes and lakes with water levels of less than 4 foot in depth; dependent upon apple snails; nests in low trees or shrubs over water	No	None
State-Listed Amphibians				
Gopher Frog (<i>Lithobates capito</i>)	SSC	sandy uplands, dry pine flatwoods, and xeric hammocks	Yes	Low
State-Listed Reptiles				
Gopher Tortoise (<i>Gopherus polyphemus</i>)	ST	sandhills, scrubs, xeric oak hammocks, and dry pine flatwoods	Yes	High
Florida Pine Snake (<i>Pituophis melanoleucus mugitus</i>)	SSC	habitats with relatively open canopies and dry sandy soils; sandhill and former sandhill, including old fields and pastures, but also sand pine scrub and scrubby flatwoods; gopher tortoise commensal species	Yes	Low
State-Listed (or Otherwise Protected) Birds				
Limpkin (<i>Aramus guarauna</i>)	SSC	mangroves, freshwater marshes, swamps, springs and spring runs, and pond and river margins; nesting includes mounds of aquatic vegetation and marsh grasses, among cypress knees, and high in trees	Yes	Low
Burrowing Owl (<i>Athene cunicularia</i>)	SSC	treeless areas, open native prairies, areas with short groundcover cleared	Yes	Low
Little Blue Heron (<i>Egretta caerulea</i>)	SSC	freshwater, brackish, and saltwater sites	Yes	Low
Tricolored Heron (<i>Egretta tricolor</i>)	SSC	shallow freshwater, brackish, and saltwater sites	Yes	Low
White Ibis (<i>Eudocimus albus</i>)	SSC	marshes, salt flats, forested wetlands, wet prairies, and swales	Yes	High
Southeastern American Kestrel (<i>Falco sparverius paulus</i>)	ST	open pine habitats, woodland edges, prairies, pastures; nests in tall dead trees or utility poles	Yes	High
Florida Sandhill Crane (<i>Grus canadensis pratensis</i>)	ST	prairies, freshwater marshes, and pastureland	Yes	High

Species	Status	Habitat Requirement	Habitat in Project Limits	Potential for Occurrence
Bald Eagle* (<i>Haliaeetus leucocephalus</i>)	Protected	on or near large lakes, rivers, and coastal areas where suitable nesting	Yes	High
Osprey* (<i>Pandion haliaetus</i>)	Protected	on or near large lakes, rivers, and coastal areas where suitable nesting	Yes	High
State-Listed Mammals				
Florida Mouse (<i>Podomys floridanus</i>)	SSC	xeric upland communities including scrub, sandhill, and ruderal sites	Yes	Low
Sherman's Fox Squirrel (<i>Sciurus niger shermani</i>)	SSC	sandhills, pine flatwoods, pastures, and open ruderal sites with pines and oaks	Yes	High
State-Listed Plants				
Sand butterfly pea (<i>Centrosema arenicola</i>)	SE	open, mixed woodlands, pine or oak-palmetto thickets	Yes	Low
Spoon-leaved sundew (<i>Drosera intermedia</i>)	ST	seepage slopes, wet flatwoods, depression marshes, sinkhole lakes, drainage ditches	Yes	Low
Florida spiny-pod (<i>Matelea floridana</i>)	SE	pine-oak-hickory woods	Yes	Low
Yellow fringeless orchid (<i>Platanthera intergra</i>)	SE	swampy meadows, boggy depressions in wet woods	Yes	Low

CA=USFWS Consultation Area; FT=Federally Threatened; FE=Federally Endangered; S/A=Similarity of Appearance; SSC=Species of Special Concern; ST=State Threatened; SE=State Endangered; CFA=Core Foraging Area for the Wood Stork

*The Osprey and the Bald Eagle are not listed species in Polk County but remain protected by other state and federal laws.

High=Habitat is present; documented historic occurrences and/or observations on-site; **Medium**=Habitat is present; documented historic occurrences; no observation on-site; **Low**=Habitat is present; no documented historic occurrences; no observations on-site; **None**=No habitat is present within or adjacent to the project area.

3.3.1 Federal Species

3.3.1.1 American Alligator

Status: Federal Threatened Due to Similarity of Appearance

The American alligator (*Alligator mississippiensis*) is a mostly black crocodilian with a rounded snout and is federally-listed as threatened due to similarity of appearance to American crocodiles (which do not occur within the project area). Alligators occur on the Atlantic Coast of North America from Florida through coastal North Carolina, and along the Gulf Coast into Texas. Alligators inhabit swampy areas, rivers, streams, lakes, and ponds. Females and juveniles occasionally use seasonal wetlands, and although they are primarily freshwater animals, alligators will also venture into brackish salt water.

Small alligators were observed in PCDC during field reviews. Given the direct observation of **American alligators**, this species was determined to have a **high** potential for occurrence in the project limits.

3.3.1.2 Eastern Indigo Snake

Status: Federal-Threatened

The Eastern indigo snake (*Drymarchon couperi*) is stout-bodied, shiny black and can reach lengths up to eight feet. It may be found in a range of habitats, from scrub and sandhill to wet prairies and mangrove swamps. The Eastern indigo snake may be present in gopher tortoise burrows in sandy uplands but forages in more hydric habitats, and requires very large tracts to survive.

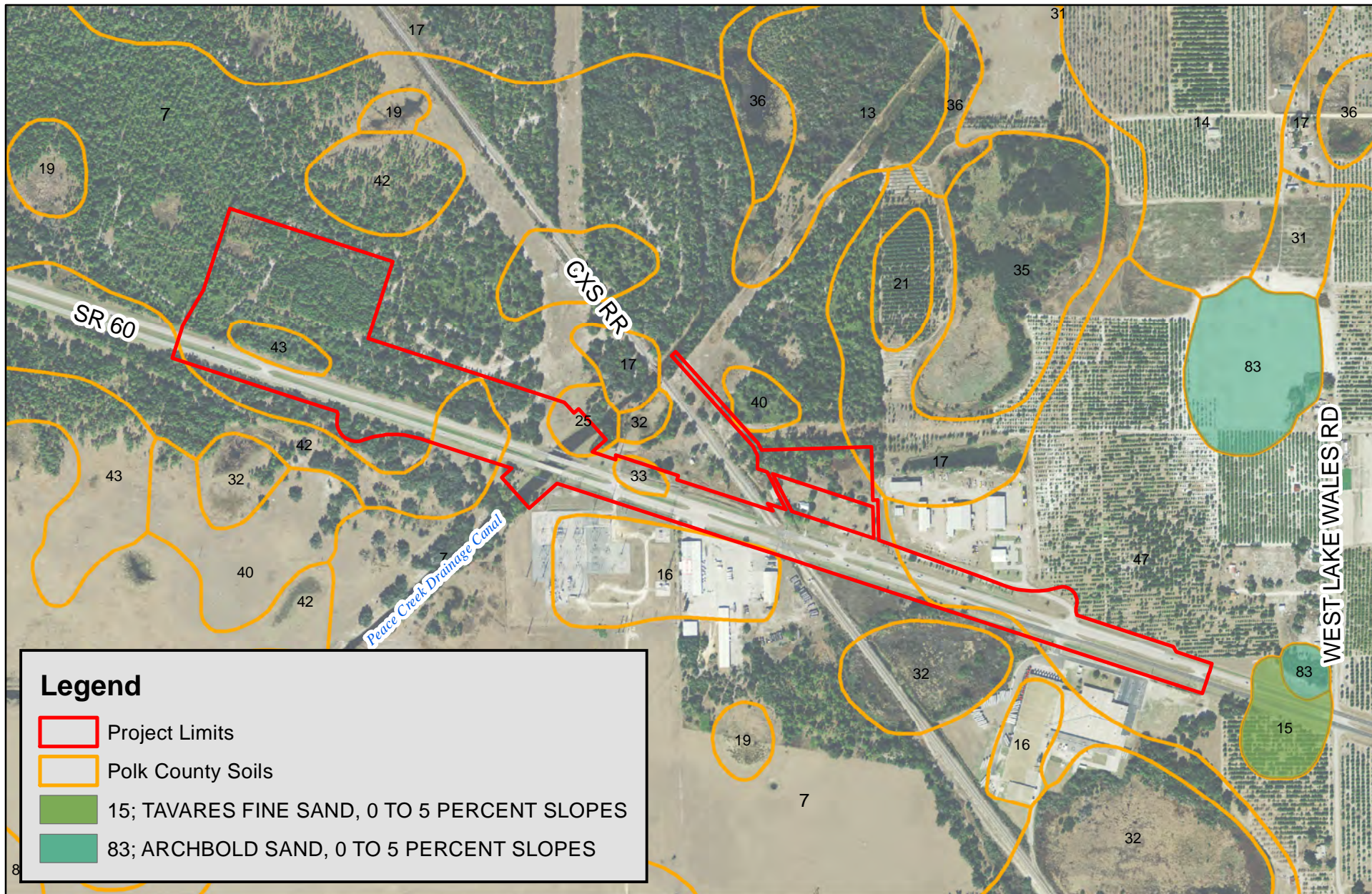
No Eastern indigo snakes were observed during field reviews, however gopher tortoise burrows are present specifically east of CSX RR tracks near potential pond sites. The probability of occurrence of the **Eastern indigo snake** within the project area has been determined to be **low**.

3.3.1.3 Sand Skink and Blue-tailed Mole Skink

Status: Federal-Threatened

The project area is within the USFWS's Consultation Area for the sand skink (*Neoseps reynoldsi*) and blue-tailed mole skink (*Eumeces egregious lividus*). This species swims just beneath the surface of sand in scrub habitats. Because of its burrowing habitat, areas of loose sandy soil is a requirement. Important habitat includes rosemary scrub, sand pine and oak scrub, scrubby flatwoods, turkey oak ridges within scrub and may use sandy edges of citrus groves occupying former scrub (Hipes, 2001).

The blue-tailed mole skink is a small, slender, brownish lizard with smooth, shiny scales; neck and head of equal width; a blue tail that may become pinkish with age; and two faint light lines on the upper sides that diverge posteriorly. Late-winter breeding males develop orange sides. The blue-tailed mole skink can be found in well-drained sandy uplands, usually with an abundance of scattered shrubs and lichens. Preferred habit includes rosemary, oak, and sand pine scrubs; occasionally in turkey oak barrens, sandhill, and xeric hammocks. It requires loose sand, for burrowing, with patches of sparse to no groundcover or canopy; often found in leaf litter (Hipes, 2001).



SR 60 Grade Separation over CSX Railroad
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 Skink Soils Map

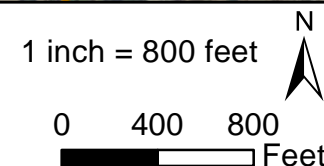


Figure 6

Skinks are generally found at elevations above 82 feet above sea level and higher, and occur in excessively drained soils. A list of suitable skink soils was compiled by USFWS (USFWS, 2012) and while listed sand skink soils are near the project limits, there are no listed skink soils within the project limits (see Figure 6). Due the specific habitat requirements of the **sand skink** and **blue-tailed mole skink**, these species were given a ranking of **none** for potential occurrence in the project area.

3.3.1.4 Florida Scrub Jay

Status: Federal Threatened

The Florida Scrub Jay (*Aphelocoma coerulescens*) is known by its pale blue coloring on the head, nape, wings, and tail. Its size and appearance is similar to the Blue Jay, but has a crest-less head. This species is found on fire-dominated, low-growing oak scrub habitat. This oak habitat is typically on well-drained sandy soils.

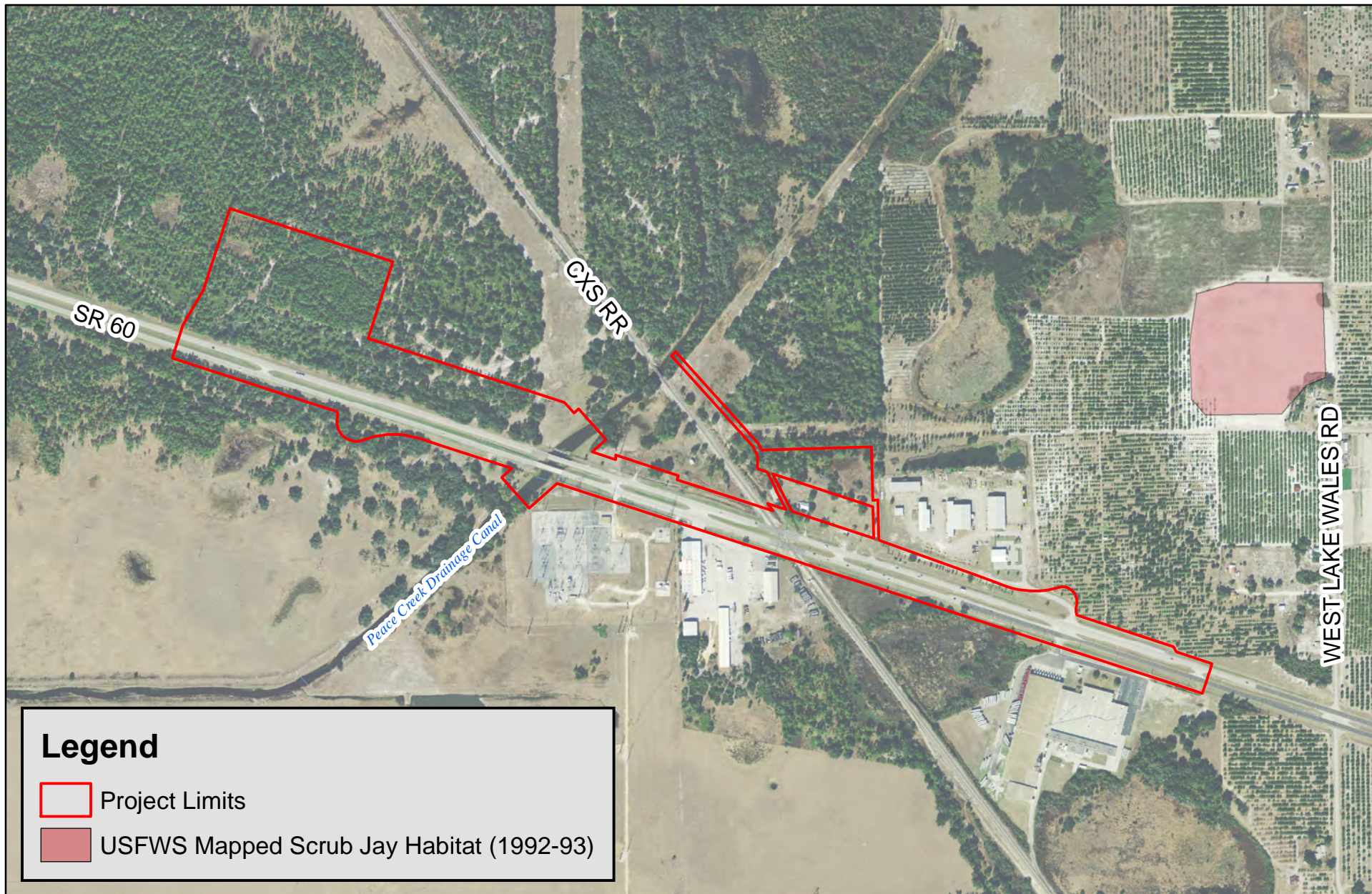
According to USFWS GIS data, the project falls within the consultation area for the Florida Scrub Jay. The USFWS statewide habitat GIS data (USFWS, 1992-93) was reviewed and compared to the project limits. One area is identified on the 1992-93 GIS data as providing habitat to the Florida Scrub Jay that is near the project. This area is depicted on Figure 7 and is located about 1,500 feet north of the project limits just to the west of West Lake Wales Road. This remnant area 1,500 feet north of the project is the only habitat nearby the project limits. The same GIS data indicates an historic observation of a Florida Scrub jay approximately 1.1 miles southeast of the project limits, immediately to the west of the railroad tracks.

There is no scrub habitat within the project limits. The project limits, the parcels proposed for SMFs and areas adjacent to the proposed right-of-way limits were reviewed for the presence of scrub oaks. No scrub oaks were identified. Due to the absence of nearby scrub habitat, the absence of scrub oaks, and no observations of **Florida Scrub Jays** during field reviews, this species was given a ranking of **none** for its potential occurrence within the project area.

3.3.1.5 Audubon's Crested Caracara

Status: Federal Threatened

The Crested Caracara (*Caracara cheriway*) is a both a raptor and a scavenger recognized by long legs, a bold color pattern and a black-capped head. Coloration is mainly black-brown, has a white neck and throat; red facial skin is bare. Caracara prefer cabbage palms for nesting that are surrounded by habitats with low ground cover and low density of tall or shrubby vegetation (Hipes, 2001).



SR 60 Grade Separation over CSX Railroad
 FPID 436559-1-52-01
 USFWS Mapped Scrub Jay Habitat (1992-93)

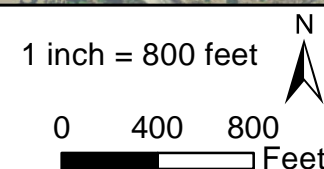


Figure 7

The study area falls within the USFWS Consultation Area for the Crested Caracara. FNAI data for element occurrences were reviewed, as well as the USFWS GIS data layers for Crested Caracara nest locations (USFWS, 2001). No historic data were found to indicate the presence of Crested Caracara in the project area.

A specific habitat assessment survey was conducted to identify cabbage palms within the project limits or within 500 feet of the proposed right-of-way. The cabbage palm locations were recorded using GPS. It was observed that most of the cabbage palms were within forested areas. Cabbage palms that were adjacent to the roadway were in an industrial land use setting and often along the property fence lines.

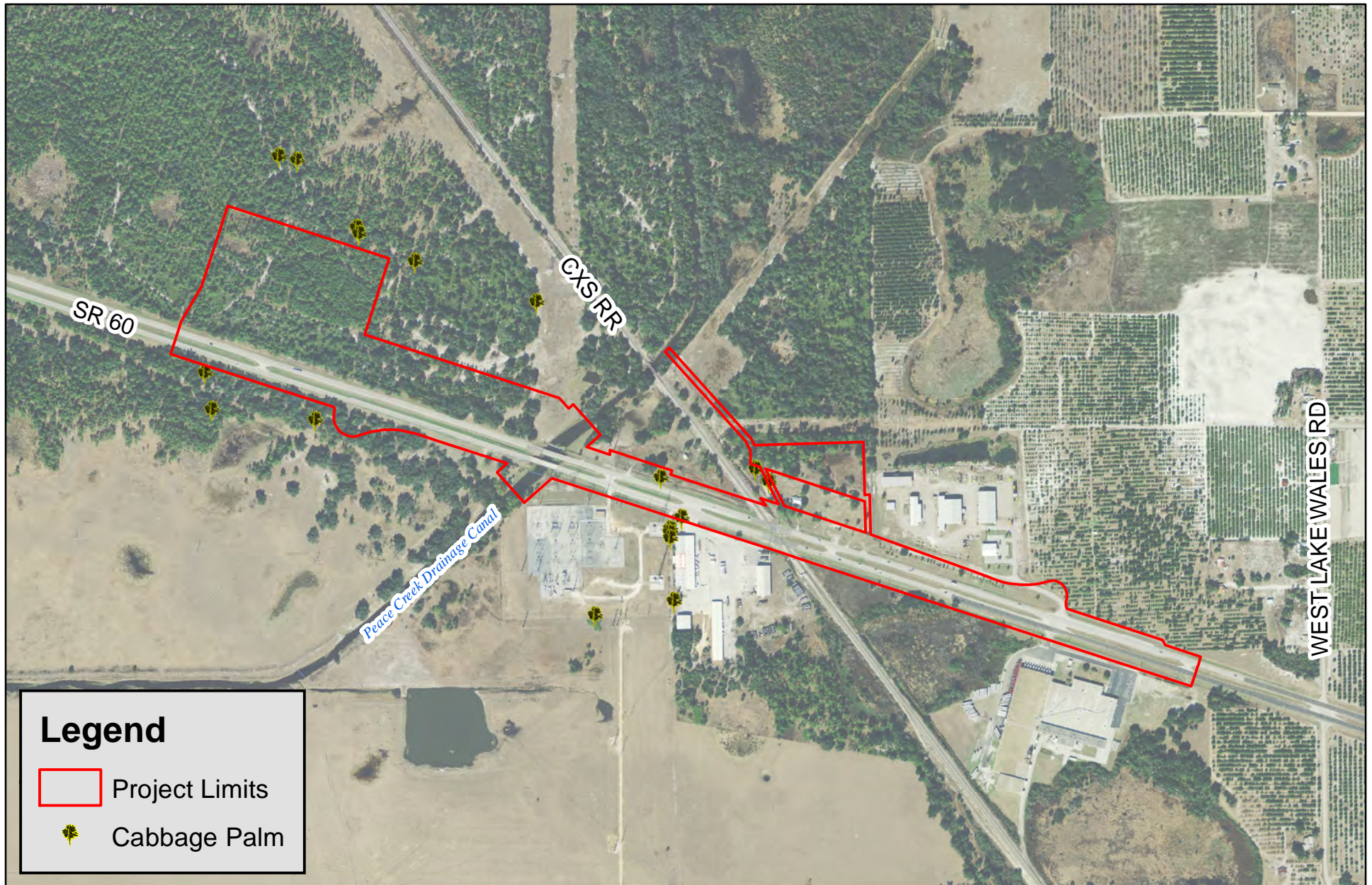
There are relatively few cabbage palms in and around the project limits as depicted in Figures 8a and 8b. Each was inspected for evidence of remnant caracara nesting materials; none were observed. A survey for Crested Caracara was performed during the spring of 2016 in accordance with survey methodology provided by the USFWS detailed in the Audubon's Crested Caracara Survey Results Technical Memorandum (see Appendix 1). No Caracara were observed during the survey. Based on the presence of suitable habitat, **Audubon's Crested Caracara** was given a ranking of **low** for potential occurrence in the project area.

3.3.1.6 Wood Stork
Status: Federal Threatened

The Wood Stork (*Mycteria americana*) is a large, white wading bird with black wings and a short black tail. Wood Storks nests colonially in a variety of inundated forested wetlands, including cypress strands and domes, mixed hardwood swamps, sloughs, and mangroves. Foraging habitat includes shallow water in freshwater marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures, and ditches, where fluctuating water levels concentrate food sources.

Data (FWS GIS data) were reviewed to determine adjacent nesting colonies and Core Foraging Areas (CFAs). The project is within the CFA of four nesting colonies for the Wood Stork (Figure 9): Lake Rosalie, Lake Somerset, Mulberry Northeast, and Saddlebag Lake.

The nearest colony (Saddlebag Lake) is located 11.8 miles to the east. Wetlands and surface waters within the project limits are considered to be Suitable Foraging Habitat (SFH) for the Wood Stork. Wood Storks were observed during field reviews foraging within PCDC. There are no nesting colonies within the project limits. The potential for occurrence of the **Wood Stork** within the project area has been determined to be **high** based on observations foraging Wood Storks within the project limits.



Legend

- Project Limits
- 🌴 Cabbage Palm



SR 60 Grade Separation over CSX Railroad
 FPID 436559-1-52-01
 Caracara Habitat Assessment Map

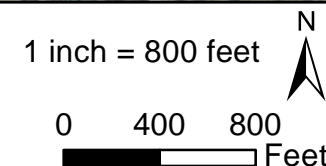
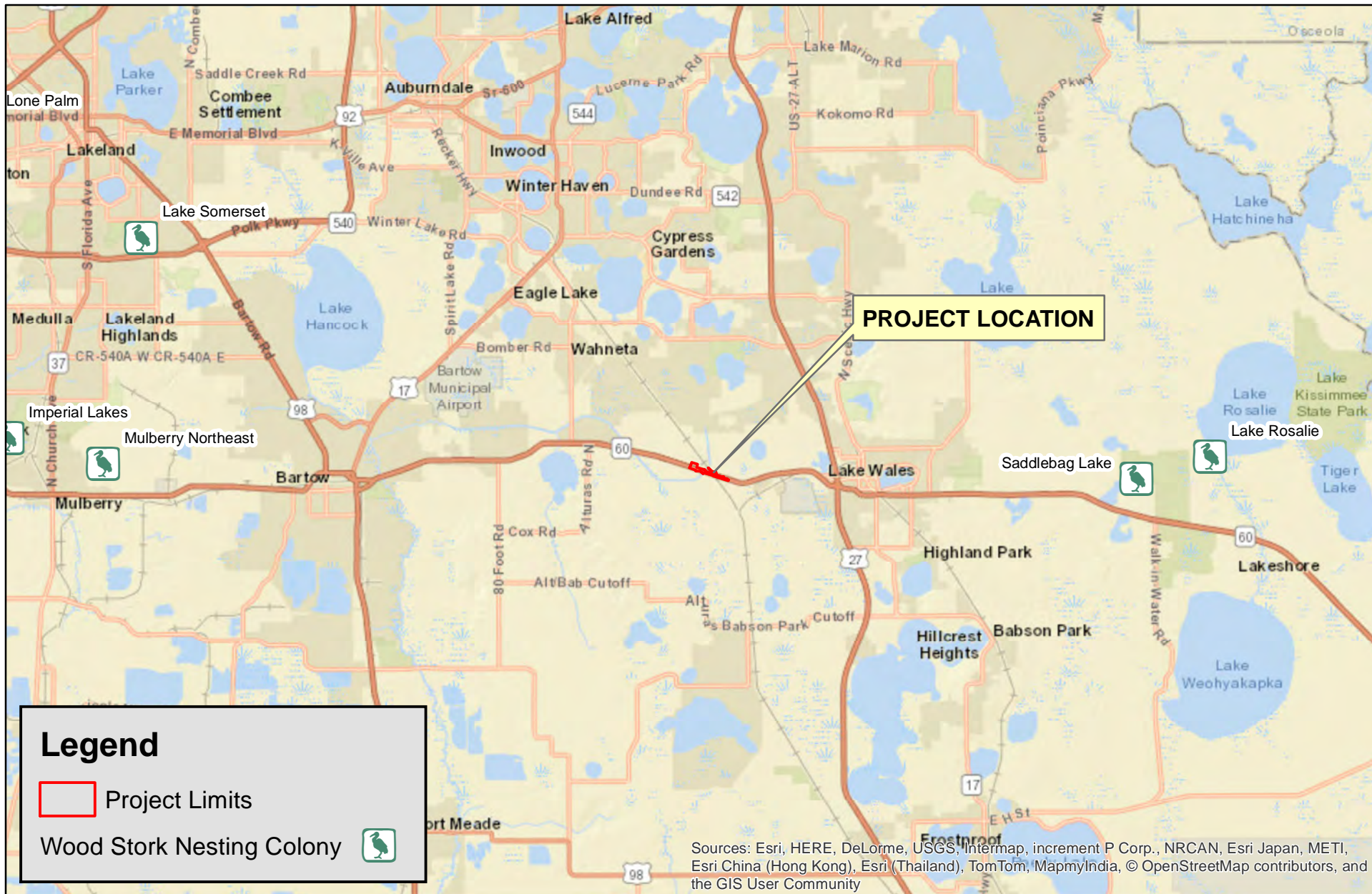


Figure 8A



SR 60 Grade Separation over CSX Railroad
FPID 436559-1-52-01
Caracara Habitat Assessment Photographs

Figure 8B



SR 60 Grade Separation over CSX Railroad FPID 436559-1-52-01 Wood Stork Nesting Colonies

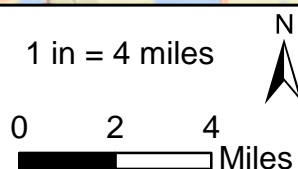


Figure 9

3.3.1.7 Everglade Snail Kite

Status: Federal Endangered

The Snail Kite (*Rostrhamus sociabilis plumbeus*) is a dark colored raptor that is medium in size. Adult male kites can be slate gray colored to black colored however the tail is white and with a dark band and pale terminal band. The bill is long and hooked.

Preferred foraging habitat is large, open marshes and lakes with shallow open waters. The Snail Kite's principal prey are apple snails that inhabit areas vegetated by spikerush, maidencane, and sawgrass. No designated critical habitat for the Everglade Snail Kite is located in the proposed project vicinity. Nesting habitat includes low trees or shrubs over water (Hipes, 2001).

No historic observations of Snail Kites were identified in the research and no observations of Snail Kites were made during the field reviews. Given the lack of specific habitat within the study area and the lack of observation of this species, the **Snail Kite** was given a ranking of **none** for potential occurrence in the project limits.

3.3.2 State Species

3.3.2.1 Gopher Frog

Status: State Species of Special Concern

The gopher frog (*Rana capito*) is recognized by its spotted skin (warty texture) and a prominent ridge on the head behind the eye, and is often associated with the burrow of gopher tortoises. Its requirements include dry, sandy uplands with isolated wetlands or large ponds within about one mile. Gopher frogs may occasionally be found in dry pine flatwoods, and xeric hammock. This species breeds chiefly in seasonally flooded, temporary ponds, but also in some permanent waters. It is nocturnal, normally spending daytime in stump-holes, tunnels, or burrows, especially those of gopher tortoise.

Suitable habitat is present and six potentially occupied gopher tortoise burrow were observed within the right-of-way. No gopher frogs were observed during field reviews and there are no documented occurrences. As a result of the presence of suitable habitat in on-site gopher tortoise burrows but no observations or recorded evidence, the probability of occurrence of the **gopher frog** within the project area has been determined to be **low**.

3.3.2.2 Gopher Tortoise

Status: State Threatened

The gopher tortoise (*Gopherus polyphemus*) is a medium-sized tortoise with a brown upper shell, yellowish lower shell, and brown to dark gray skin. It is typically found in dry upland habitats, including sandhills, scrub, xeric oak hammock, and dry pine flatwoods. Gopher tortoises commonly inhabit disturbed areas such as pastures, old fields, and road shoulders.

The gopher tortoise was listed as Threatened by FWC in June 2006 and is afforded protection under Chapter 68A-27 F.A.C. Conservation and recovery of this species is implemented via the FWC's Gopher Tortoise Management Plan. Conservation objectives are fully described in the Gopher Tortoise Permitting Guidelines (FWC, 2008 Rev. 2015) which does allow relocation of gopher tortoises that cannot be avoided by construction activities.

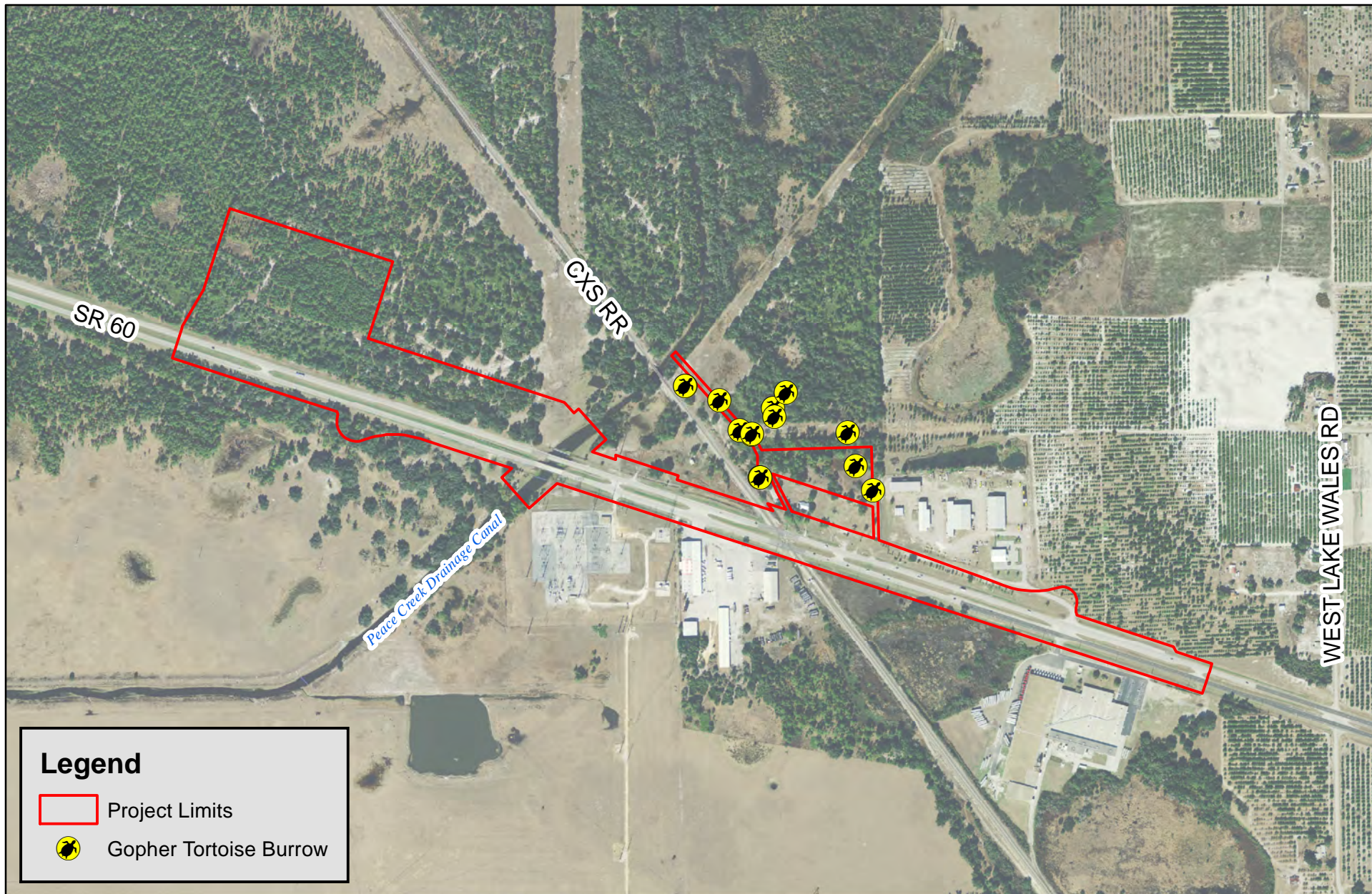
Six potentially occupied gopher tortoise burrows were observed within the limits of the project (see Figure 10). One tortoise was observed in a burrow and another tortoise was observed foraging. The probability of occurrence of the **gopher tortoise** within the project area has been determined to be **high**.

3.3.2.3 Florida Pine Snake

Status: State Species of Special Concern

The Florida pine snake (*Pituophis melanoleucus mugitus*) is a large, stocky, tan or rusty colored snake with an indistinct pattern of large blotches on a lighter background. This species is a state-listed species of special concern. Florida pine snakes can be found in habitats with relatively open canopies and dry sandy soils, in which it burrows. This species may be found in sandhill and former sandhill, including old fields and pastures, but also sand pine scrub and scrubby flatwoods. It often coexists with pocket gophers and gopher tortoises.

There have been no documented occurrences of the Florida pine snake within the project area and it was not observed during field reviews. As a result of the presence of suitable habitat in on-site gopher tortoise burrows but no observations or recorded evidence the probability of occurrence of the **Florida pine snake** within the project area has been determined to be **low**.



SR 60 Grade Separation over CSX Railroad
 FPID 436559-1-52-01
 Gopher Tortoise Burrow Locations

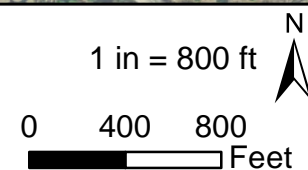


Figure 10

3.3.2.4 Limpkin

Status: State Species of Special Concern

The Limpkin (*Aramus guarauna*) is a large, long-billed, long-legged wader of swamps and marshes. The bill is heavy and slightly decurved. Limpkins commonly inhabit mangroves, freshwater marshes, swamps, springs and spring runs, and pond and river margins. It may also be found along lake margins and swales, strand swamps, sloughs, and impoundments in south Florida. Preferred nesting includes mounds of aquatic vegetation and marsh grasses, among cypress knees, and high in trees.

There were no observations of the Limpkin within the project area. Foraging habitat is present in the project area in the form of drainage ditches and small herbaceous wetlands on the pond parcels. Given the presence of suitable habitat, the probability of occurrence of the **Limpkin** within the project area has been determined to be **Low**.

3.3.2.5 Florida Mouse

Status: State Species of Special Concern

The Florida mouse (*Peromyscus floridanus*) is a large mouse, brownish to tawny above and whitish below. The Florida mouse inhabits xeric upland communities with sandy soils, including scrub, sandhill, and ruderal sites where they inhabit burrows of the gopher tortoise. In the absence of gopher tortoises, Florida mice will dig their own burrows or use those of field mice.

Suitable habitat is present and six potentially occupied gopher tortoise burrow were observed within the right-of-way. No Florida mice were encountered during field reviews and no recorded occurrences are known. As a result of the presence of suitable habitat in on-site gopher tortoise burrows but no observations or recorded evidence, the potential for occurrence of the **Florida mouse** within the project area was determine to be **low**.

3.3.2.6 Sherman's Fox Squirrel

Status: State Species of Special Concern

Sherman's fox squirrel (*Sciurus niger shermani*) is a large squirrel with highly variable dorsal fur coloring ranging from nearly all black to silver with variations of both colors. The tail is long, nearly the length of the head and torso. This species is a state-listed species of special concern. The preferred habitat is sandhills (high pine), pine flatwoods, and pastures and other open, ruderal habitats with scattered pines and oaks. Fox squirrels depend on a variety of oak trees for seasonal food and nest material. Longleaf pine cones and seeds are important foods.

The fox squirrel is a wide-ranging species and one squirrel may cover up to 1,000 acres. Two breeding seasons occur—winter and summer. (McGrady, 2015)

Suitable habitat is present both within and adjacent to the project. Observations of a pair of fox squirrels were made during field reviews conducted on June 30 and July 7, 2015. Figure 11 depicts the area where the fox squirrels were observed. The fox squirrels were foraging on pine cones in pine trees during both days of observation. Photographs 1 and 2 show two different fox squirrels foraging. Different pine trees were used but all were in the vicinity of the PCDC on the southwest side of the SR 60 bridge.



Photo 1 Fox squirrel in pine tree



Photo 2 Fox squirrel foraging

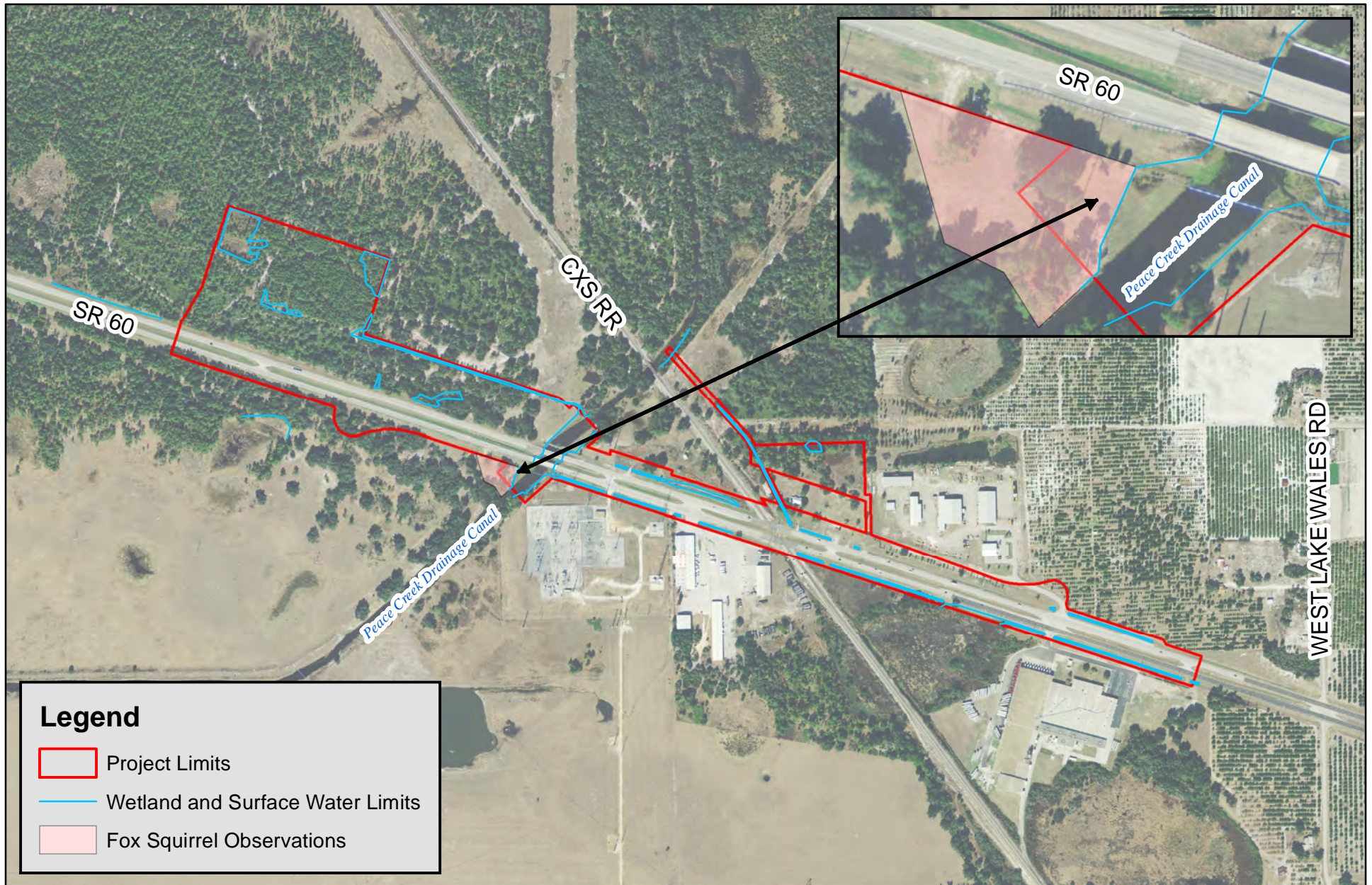
Pedestrian surveys were conducted within all areas within the project limits. No evidence of fox squirrel nests was found. Grey squirrels were observed on the north side of SR 60, west of the PCDC. No other fox squirrels were observed.

As a result of the suitable habitat and direct observation, the probability of occurrence of the **Sherman's fox squirrel** within the project area has been determined to be **high**.

3.3.2.7 Little Blue Heron

Status: State Species of Special Concern

The Little Blue Heron (*Egretta caerulea*) is a medium-sized wading bird with a purplish to maroon-brown head and neck. The body is slate blue and the legs are grayish to green. This species feeds in shallow freshwater, brackish, and saltwater habitats. Nesting preferences include woody vegetation such as cypress, willow, maple, black mangrove, and cabbage palm. The Little Blue Heron commonly is observed to breed in mixed-species colonies in flooded vegetation or on islands. There were no observations of the Little Blue Heron within the project area; however, areas of foraging habitat are present in the project area. Therefore, the probability of occurrence of the **Little Blue Heron** within the project area has been determined to be **low**.



SR 60 Grade Separation over CSX Railroad
 FPID 436559-1-52-01
 Fox Squirrel Observations

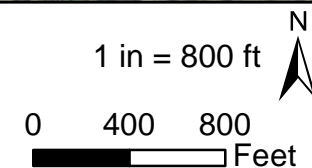


Figure 11

3.3.2.8 Tricolored Heron

Status: State Species of Special Concern

The Tricolored Heron (*Egretta tricolor*) is a medium-sized wading bird with a slender neck. Its body color appears two-toned with dark slate coloration on the head, neck, and body that contrasts with a white rump, belly, and undertail. This heron nests in colonies that occur on mangrove islands or in willow thickets in fresh water, but nesting sites include other woody thickets on islands or over standing water. It appears to prefer coastal environments although it can be found feeding in a variety of permanently and seasonally flooded wetlands, mangrove swamps, tidal creeks, ditches, and edges of ponds and lakes.

There were no observations of the Tricolored Heron within the project area, however areas of foraging habitat are present in the project area; therefore, the probability of occurrence of the **Tricolored Heron** within the project area has been determined to be **low**.

3.3.2.9 White Ibis

Status: State Species of Special Concern

The White Ibis (*Eudocimus albus*) is a medium-sized wading bird with a long, downward-curving bill. Adults are white except for black tips on wings and pink to reddish coloration on exposed flesh around the face, bill, and legs. The White Ibis is also found in a wide variety of habitats, including freshwater and brackish marshes, salt flats and salt marsh meadows, many types of forested wetlands, wet prairies, swales, seasonally inundated fields, and man-made ditches. Adults prefer foraging in freshwater areas when feeding young. Nests are placed in a variety of trees, shrubs, and vines, and tend to be closer to the ground than other colonially nesting wading birds.

White Ibis were observed during field reviews therefore, the probability of occurrence of the **White Ibis** within the project area has been determined to be **high**.

3.3.2.10 Southeastern American Kestrel

Status: State Threatened

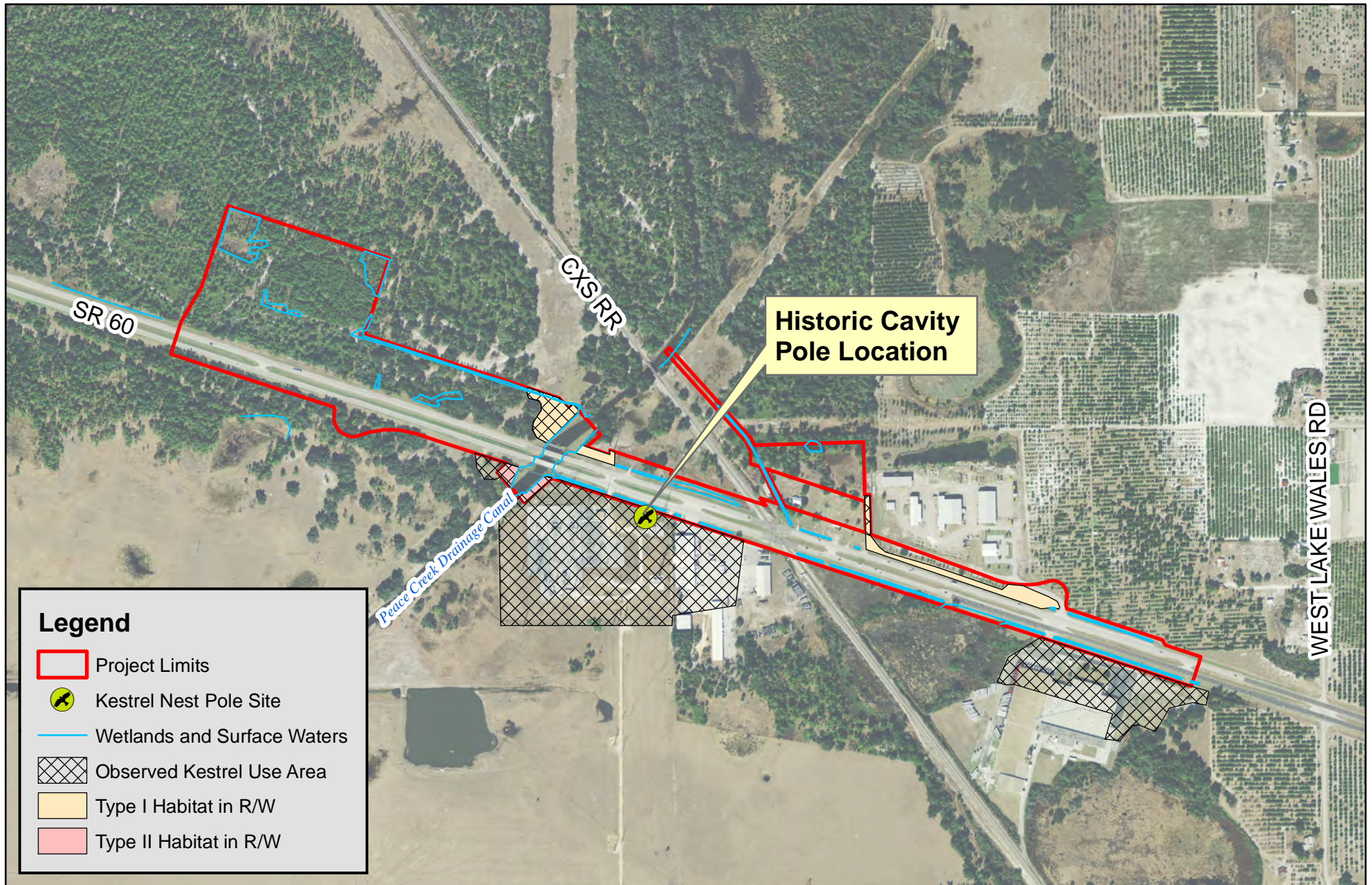
The Southeastern American Kestrel (*Falco sparverius Paulus*) has a black and white facial pattern. Females are larger and have a more uniform color on the back and wings. Males are smaller and have blue-gray wings. This species is found in open pine habitats, woodland edges, prairies, and pastures throughout much of Florida. Nest sites are tall dead trees or utility poles generally with an unobstructed view of surroundings. Sandhill habitats seem to be preferred, but may also occur in flatwoods settings having open patches of grass or bare ground to detect prey.

A survey for Southeastern American Kestrels was performed during the summer of 2015. Surveying for Kestrels was done in accordance with the survey methodology contained in FWC's Nongame Wildlife Technical Report No. 13 for the Southeastern American Kestrel (Stys, 1993). Data sheets from the survey are provided in Appendix 2. Habitat mapping was done to identify Type I and Type II Kestrel Habitat.

Type I Kestrel habitat is defined as upland plant communities with less than 10% canopy closure and with at least 60% herbaceous ground cover of less than 10 inches in height. Type II habitat is open woodland communities with greater than 10% but less than 25% canopy closure and with at least 60% herbaceous ground cover less than 10 inches in height. Using GIS software and ground truthing, it was determined that there is 2.83 acres (1.14 hectares) of Type I and 0.41 acres (0.17 hectares) of Type II Kestrel Habitat within the project area (see Figure 12). Both habitat types are also present outside the right-of-way.

The survey began on June 9, 2015 and was concluded on July 14, 2015. Five surveys were conducted over five weeks. Two Southeastern American Kestrel groups were observed at two different locations adjacent to the project corridor. Figure 12 depicts the areas where kestrels were observed. Kestrel activity included perching on overhead wires, foraging, and one nest cavity was identified. The nesting took place off-site. Much of the perching was also on overhead wires that exist off-site, however some overhead wires are within the project limits and were used by kestrels. Foraging occurred primarily off-site; however, infrequent foraging in pasture areas west of the PCDC was observed.

The first kestrel group occurred west of the CSX railroad tracks and consisted of two adults and three juveniles. A cavity was identified in wooden utility pole on the Duke Energy substation property south of SR 60 right-of-way (location identified on Figure 12). No kestrels were observed to enter the nest cavity during the survey. It was assumed that the young had fledged at the time of the survey. Early in the surveys, the juveniles were observed to call repeatedly and accept food items brought to them by the adults. On the fourth survey, it was observed that the nest cavity pole had been removed by Duke Energy and replaced with a metal utility pole. The top of the pole was cut off and left on the ground. While it was on the ground the cavity was inspected and photographed. The five kestrels in the group remained in the area throughout the remainder of the survey even after the cavity pole was removed.



SR 60 Grade Separation over CSX Railroad
 FPID 436559-1-52-01
 Historic Kestrel Nest Location

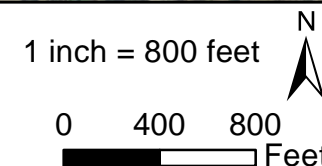


Figure 12



Photo 3 Cavity pole on ground



Photo 4 Inside view of cavity; note white walls and feathers on bottom

The second group of kestrels consisted of an adult male and female pair. These were observed to the east of the CSX railroad on vacant commercial property (former International Paper Co.) south of the SR 60 right-of-way. It was suspected that a nest was located on the roof of the commercial building, however no juveniles were observed and a nest location was not identified. The adults perched, foraged, and flew to the roof repeatedly throughout the surveys.

It should be noted that the Type I and Type II habitat within the right-of-way was infrequently used for foraging during the surveys. The kestrel groups' primary foraging areas and nesting cavity was off-site. Within the right-of-way, the main use of the habitat was perching on overhead wires. Given the observance of the two groups the potential for occurrence of the **Southeastern American Kestrel** in the project area has been determined to be **high**.

3.3.2.11 Florida Sandhill Crane

Status: State Threatened

The Florida Sandhill Crane (*Grus canadensis pratensis*) is a tall, long-necked, long-legged bird. Adults are gray in color with a whitish chin, cheek, and upper throat with dull red skin on the crown. Prairies, freshwater marshes, and pasture lands are the preferred habitat for this species. It has been known to frequent agricultural areas such as feed lots and crop fields, golf courses and other open lawns, especially in winter and early spring. The nest of a Sandhill Crane is recognized by a mound of herbaceous plant material in shallow water and favors wetlands dominated by pickerelweed and maidencane.

Foraging habitat is present. Nesting habitat is not present in the project limits. The on-site wetlands are isolated within heavily forested areas and do not have the characteristics typically common with Sandhill Crane nesting sites.

Sandhill cranes with young were observed on the south side of SR 60 foraging in uplands west of the PCDC. There are large herbaceous wetlands within the pasture areas south of SR 60 and it is likely these wetlands (outside the project limits) were used for nesting.

With the observation of Florida Sandhill Cranes adjacent to the right-of-way, the probability of occurrence of the **Florida Sandhill Crane** within the project area has been determined to be **high**.



Photo 5 Sandhill cranes in uplands

3.3.2.12 Bald Eagle

Status: No Current Listing

The Bald Eagle (*Haliaeetus leucocephalus*) was removed from the endangered species list in August 2007; however this species is protected under the Federal Migratory Bird Treaty Act (16 U.S.C. 703-712, 1918 as amended), the Federal Bald and Golden Eagle Act (16 U.S.C. 668-668c, 1940, as amended), and the State Bald Eagle Management Plan (FWC, Bald Eagle Management Plan, 2008).

Bald eagles are recognized by a white head and tail, with a dark colored body. The bill is yellow. It frequents areas of ideal habitat that are close to coastal areas, bays, rivers, lakes, or other bodies of water with a concentrated food source. Tall trees, mostly live pines, serve as nesting sites.

The FWC Eagle Nest Locator tool (FWC, Eagle Nest Locator, undated) was consulted throughout the project. Nest PO238 is shown about 0.4 miles south of SR 60 and just west of the CSX railroad. The nest was last surveyed in 2013 and was noted as active at that time. The project limits are well beyond 660-foot protection buffer for this nest location. No other nest sites were identified during field reviews. Observations of an immature Bald Eagle were made in the area south of the SR 60 right-of-way, but not within the project limits.

With the nest site 0.4 miles to the south and the observation of a Bald Eagle to the south of project, the probability of occurrence for the **Bald Eagle** has been determined to be **high**.

3.3.2.13 Osprey

Status: **No Current Listing**

The Osprey (*Pandion haliaetus*) is not a listed species in Polk County however it is federally-protected by the Migratory Bird Treaty Act (16 U.S.C. 703-712) and state-protected by Chapter 68A F.A.C. This large bird has dark brown and white coloration. It can be found on or near large lakes, rivers, and coastal areas where suitable nesting sites can be found. Water bodies must be large, fairly open, and clear for osprey to locate prey. Nesting sites are large living or dead trees and man-made structures and sites often stand above surrounding vegetation or in more open fields and sparsely timbered forests, but low nesting sites are common, particularly in mangrove swamps.

No nests have been identified within the project limits. Ospreys were observed to perch on the cell tower south of SR 60 and west of the CSX railroad. Given the observation of Osprey adjacent to the project, it has been determined that the **Osprey** has a **high** potential for occurrence within the project area.

3.3.2.14 Florida Burrowing Owl

Status: **State Species of Special Concern**

The Florida Burrowing Owl (*Athene cunicularia floridana*) is a small owl with plumage that is sandy in color. Its eyes are bright yellow, the chin has white accents, and ear tufts are lacking. This species excavates nests in the ground and may live as single breeding pairs or in colonies. The presence of Florida Burrowing Owls is directly related to available habitat that provides an open treeless area with short groundcover such as native prairies, pastures, agricultural fields, golf courses, airports, and vacant lots.

There were no observations of Florida Burrowing Owls or burrows for this species. Open areas with low groundcover occur within the right-of-way along the outside of the roadway and within the median, although this habitat is isolated and precarious. Given the presence of poor habitat, lack of observation, and lack of historic records, potential to encounter a **Florida Burrowing Owl** within the project area has been determined to be **low**.

3.3.2.15 Listed Flora Species

Status: State Endangered

Four state-listed flora species were included as having a potential for being present in the project area. These species are the sand butterfly pea (*Centrosema arenicola*); spoon-leaved sundew (*Drosera intermedia*); Florida spiny-pod (*Matelea floridana*); and yellow fringeless orchid (*Platanthera intergra*).

There is no habitat for these species within the existing right-of-way due to maintenance practices along the SR 60 roadway. Offsite pond locations, easements, and areas proposed for new right-of-way were surveyed. Proposed new right-of-way, the pond site, and the proposed pond site easements west of the CSX railroad are actively grazed by cattle and have extensive feral hog rooting damage. Additionally, the pond parcel has previously been scraped down which removed the top 18 inches of soil (approximately). Additional right-of-way areas, the pond site and easements to the east of the CSX railroad have also been disturbed by previous land uses which diminishes the potential for listed plant species to be present.

No listed plants were observed during field reviews conducted for this project. Therefore, **sand butterfly pea, spoon-leaves sundew, Florida spiny-pod, and yellow fringeless orchid** were given a potential occurrence of **low**.

3.4 Critical Habitat

Under the ESA, critical habitat is a designated area which provides essential biological and physical features to potentially support Federal-listed species. USFWS follows a regulatory procedure to designate such areas for special management or protection. There are no areas of designated critical habitat within or adjacent to the project area.

4.0 PROPOSED IMPACTS

4.1 Protected Species Impacts

The habitat within the project corridor was evaluated to determine the presence or potential for the occurrence of listed species. An anticipated determination of the proposed project's "effects" to these species was made based on their probability of occurrence within the project area, the proposed changes to their habitat quality, quantity and availability as a result of the project, and how each species is expected to respond to the habitat changes.

4.1.1 Anticipated Protected Species Effect Determinations- Federal Species

4.1.1.1 American Alligator

Status: Federal-Threatened Due to Similarity of Appearance

Alligators were observed in the Peace Creek Drainage Canal however no alligator nests have been observed. The alligator is a highly mobile species and would be expected to move away from disturbances. Similar off-site wetland and canal habitats are adjacent to the project and would provide suitable habitat. Wetland impacts will be mitigated pursuant to Part IV, Chapter 373, F.S. and 33 U.S.C. 1344. Given the presence of adjacent suitable habitat and the commitment to mitigate for wetland impacts, it is anticipated that the project **may affect, but is not likely to adversely affect** the **American alligator**.

4.1.1.2 Eastern Indigo Snake

Status: Federal-Threatened

No Eastern indigo snakes were observed during field reviews, however areas of suitable habitat and gopher tortoise burrows are present. An FWC permit will be obtained to excavate gopher tortoise burrows and relocate tortoises and commensal species prior to construction. The FDOT has committed to implementing the USFWS Standard Protection Measures for the Eastern Indigo Snake (Appendix 3). Given the limited amount of suitable habitat to be impacted within the project ROW and the standard protection guidelines implemented during construction, it is anticipated that this project **may affect, but is not likely to adversely affect** the **Eastern indigo snake**.

4.1.1.3 Sand Skink and Blue-tailed Mole Skink

Status: Federal Threatened

While the project occurs within the USFWS consultation area for the sand skink and blue-tailed mole skink, there are no suitable soils within or immediately adjacent to the project limits. The project is higher in elevation than 82 feet, however the dominant soil types are those typically found on flatwoods such as Pomona fine sand and Zolfo fine sand. Given the lack of suitable habitat for these species, it is anticipated that the project will have **no effect** on the **sand skink and blue-tailed mole skink**.

4.1.1.4 Florida Scrub Jay

Status: Federal Threatened

The project is within the USFWS consultation area for the Florida Scrub Jay. This species has very specific habitat requirements that are not present within or adjacent to the right-of-way. Pedestrian surveys were conducted to determine the presence or absence of scrub oaks within or adjacent to the project limits. There are no scrub soils within the project limits. No scrub habitat was identified following the surveys. The USFWS historic

habitat mapping was reviewed, which indicates a remnant habitat area 1,500 feet north of the project. This area has been cleared of vegetation and currently provides no habitat for the scrub jay.

No suitable Florida Scrub Jay habitat exists within the project limits as determined by both background research and on-site field inspections. Review of GIS data available indicates no historic evidence of Florida Scrub Jay habitat in the project limits. Based on the lack of habitat, it is anticipated that the project will have **no effect** on the **Florida Scrub Jay**.

4.1.1.5 Audubon's Crested Caracara

Status: Federal Threatened

Audubon's Crested Caracara has very specific nesting requirements. Suitable nesting habitat exists within the project limits as determined by both background research and on-site field inspections. Review of GIS data available indicates no historic evidence of Audubon's Crested Caracara recorded in the project limits. Field reviews found very few cabbage palms, and these were within mixed forested areas and on commercial sites. A survey was conducted in the spring of 2016 (see Appendix 1). Although the project is in the USFWS' Consultation Area, based on the presence of suitable nesting habitat but no observations, it is anticipated that the project **may affect, but is not likely to adversely affect** the **Audubon's Crested Caracara**.

4.1.1.6 Wood Stork

Status: Federal Threatened

The project area falls within the CFAs of four documented Wood Stork nesting colonies. The nearest colony is located approximately 11.8 miles east of the project area.

Wetlands and surface waters within the project right-of-way may provide foraging for the Wood Stork. To minimize any loss of foraging habitat to Wood Storks utilizing these areas, the project will be constructed in compliance with the USFWS Standard Local Operating Procedures for Endangered Species (SLOPES) for the Wood Stork (USFWS, 2010), and no net loss of habitat value will occur from this project.

All wetland impacts resulting from the project will be mitigated pursuant to Part IV, Chapter 373, F.S. and 33 U.S.C. 1344. The mitigation will also compensate for SFH impacts. Therefore, it is anticipated that the project **may affect, but is not likely to adversely affect** the **Wood Stork**.

4.1.1.7 Everglade Snail Kite

Status: Federal Endangered

Pedestrian surveys and reviews of aerial maps were conducted to assess the habitat within and adjacent to the project limits, and indicates no suitable foraging or nesting habitat. As a result of the lack of suitable habitat, no historic evidence, and no observations of Snail Kites during field reviews, it is anticipated that the project will have **no effect** on the **Snail Kite**.

4.1.2 Anticipated Protected Species Effect Determinations - State Species

4.1.2.1 Gopher Frog

Status: State Species of Special Concern

No gopher frogs were observed during field reviews and there are no documented occurrences. Six potentially occupied gopher tortoise burrow were observed within the right-of-way or within 25 feet of the right-of-way. Two tortoises were also observed.

It is a commitment to survey the project area for gopher tortoises prior to construction. Since gopher tortoise burrows are located within the project area, an FWC relocation permit will be obtained to relocate tortoises prior to construction. Commensal species will be addressed per the FWC's Gopher Tortoise Permitting Guidelines (FWC, 2008 Rev. 2015). As a result, it is anticipated that the project **may affect, but is not likely to adversely affect** the **gopher frog**.

4.1.2.2 Gopher Tortoise

Status: State Threatened

Six potentially occupied gopher tortoise burrow were observed within the right-of-way or within 25 feet of the right-of-way. Two tortoises were also observed. The FDOT commits to resurvey and apply for an FWC relocation permit to excavate and relocate on-site gopher tortoises prior to construction. Captured tortoises would be relocated to a long-term protected recipient site. There are currently four recipient sites in the vicinity of the project area that would be suitable for tortoises relocated from the project area (Hatchineha Ranch; Lightsey Cattle Company i.e. Brahma Island; Whaley Ranch; and Adams Ranch). With the commitment to resurvey and relocate, it is anticipated that the project **may affect, but is not likely to adversely affect** the **gopher tortoise**.

4.1.2.3 Florida Pine Snake

Status: State Species of Special Concern

Suitable habitat for the Florida pine snake is present and gopher tortoise burrows are also present within the project limits. This species may be commensal with the gopher tortoise and may occur in gopher tortoise burrows. No Florida pine snakes have been observed and no historic evidence to indicate presence is available. The FDOT commits to survey for and excavate gopher tortoise burrows prior to construction. Commensal species will be handled in accordance with the FWC's Gopher Tortoise Permitting Guidelines (FWC, 2008 Rev. 2015). It is anticipated that the project **may affect, but is not likely to adversely affect** the **Florida pine snake**.

4.1.2.4 Southeastern American Kestrel

Status: State Threatened

A survey for the Southeastern American Kestrel was conducted in June and July, 2015. There is about 2.83 ac (1.14 ha) of Type I habitat and 0.41 ac (0.17 ha) of Type II habitat within the project limits. Both habitat types are also present outside the right-of-way. Two Southeastern American Kestrel groups were observed at two different locations adjacent to the project corridor.

Kestrel activity included perching on overhead wires, foraging, and nesting. Foraging areas were primarily offsite, although infrequent use of the Type I and Type II habitat in the right-of-way and west of PCDC was observed. All nesting activity was observed to take place off-site and occurred on the Duke Energy substation property. Much of the perching was also on overhead wires that exist off-site, however some overhead wires are within the project limits and were used by kestrels for perching.

Kestrels were nesting offsite and infrequently foraging on-site. The on-site suitable kestrel use areas total 3.24 acres (1.31 hectares). Referencing the Ecology and Habitat Protection Needs technical report (Stys, 1993) under this use pattern, habitat protection is generally not recommended when the amount of on-site suitable kestrel use area is less than 37 acres (15 hectares).

Based on the observations resulting from the surveys and review of habitat protection guidelines, it is anticipated that the project **may affect, but is not likely to adversely affect** the **Southeastern American Kestrel**.

4.1.2.5 Wading Birds

Status: State Species of Special Concern

Wading birds potentially within the project area include the Limpkin, Little Blue Heron, Tricolored Heron, and White Ibis. These wading birds may be encountered in a variety of wetland habitats including canals, ditches, shrubby wetlands, and emergent wetlands, all of which are found within the project corridor.

Since wetland impacts to habitats potentially utilized by these state-listed species will be mitigated for pursuant to Part IV, Chapter 373, F.S. and U.S.C. 1344, it is anticipated that the project will have **may affect, but is not likely to adversely affect wading bird species** listed above.

4.1.2.6 Florida Mouse

Status: State Species of Special Concern

Suitable habitat is present and gopher tortoise burrows are also present within the project limits. Because this species is a commensal, it may occur in gopher tortoise burrows. No Florida mice have been observed and no historic evidence to indicate presence is available. The FDOT commits to survey for and excavate gopher tortoise burrows prior to construction. Commensal species will be handled in accordance with the FWC's Gopher Tortoise Permitting Guidelines (FWC, 2008 Rev. 2015). It is anticipated that the project **may affect, but is not likely to adversely affect the Florida mouse**.

4.1.2.7 Sherman's Fox Squirrel

Status: State Species of Special Concern

Fox squirrels were observed foraging in one area within the project limits. Suitable habitat is present both within and adjacent to the right-of-way. The fox squirrel is currently a state-listed species and protection is afforded to nests and the fox squirrels themselves, but are no protection measures over habitat (McGrady, 2015) (FWC, 2011). Results of pedestrian surveys conducted in June and July, 2015 indicated no nests being observed. It is known this species is wide-ranging and may use portions of the project area only occasionally. Fox squirrels were only observed twice in a six week period that included weekly wildlife surveys. Potential foraging and nesting habitat will be impacted by the project, however no nests were observed in this area; therefore, it is anticipated that the project **may affect, but is not likely to adversely affect the Sherman's fox squirrel**.

4.1.2.8 Florida Sandhill Crane

Status: State Threatened

Florida sandhill cranes with young were observed foraging in the PCDC. No nests were observed within the project limits. The on-site wetlands and surface waters do not provide suitable nesting habitat and no impacts to suitable nesting habitat are anticipated. Since wetland impacts to habitats potentially utilized for foraging by these state-listed species will be mitigated for pursuant to Part IV, Chapter 373, F.S. and U.S.C. 1344, it is anticipated that the project **may affect, but is not likely to adversely affect** the **Florida sandhill crane**.

4.1.2.9 Bald Eagle

Status: No Current Listing

The Bald Eagle was given a high potential of occurrence based on the observation of a young eagle south of the project limits. An active nest is known to occur to 0.4 miles to the south of the project. No Bald Eagle nests occur within the project limits or within 660 feet of the project limits. There is no suitable foraging habitat for the eagle within the project area. It is anticipated that the project **may affect, but is not likely to adversely affect** the **Bald Eagle**.

4.1.2.10 Osprey

Status: No Current Listing (in Polk County)

No Osprey nests occur within or adjacent to the project limits, however Osprey were observed perching on the cell tower just south of the project limits. There is no suitable foraging habitat for the Osprey within the project limits.

The Osprey is not a listed species in Polk County however it is federally-protected by the Migratory Bird Treaty Act (16 U.S.C. 703-712) and state-protected by Chapter 68A F.A.C. Should an Osprey nest become established in the project limits, FDOT District One holds a district-wide nest removal permit that allows the removal of inactive nests when necessary for construction or maintenance activities. The project will be monitored for Osprey nesting activity. It is anticipated that the project **may affect, but is not likely to adversely affect** the **Osprey**.

4.1.2.11 Florida Burrowing Owl

Status: State Species of Special Concern

The Florida Burrowing Owl has very specific habitat requirements. No suitable Florida Burrowing Owl habitat exists within the project limits as determined by on-site field inspections. It is anticipated that the project will have **no effect** on the **Florida Burrowing Owl**.

4.1.2.12 Listed Flora Species

Status: State Endangered

Four state-listed flora species were included as having a potential for being present in the project area: sand butterfly pea (*Centrosema arenicola*); spoon-leaved sundew (*Drosera intermedia*); Florida spiny-pod (*Matelea floridana*); and yellow fringeless orchid (*Platanthera intergra*). Maintenance practices, current land uses (including active graze and feral hog damage), and previous land uses diminish the potential for listed plant species to be present. No listed plants were observed during field reviews conducted for this project. Given the lack of suitable habitat and lack of observation, it is anticipated that the project will have **no effect** on the **listed flora species**.

4.1.3 Anticipated Protected Species Impact Determination Summary

Tables 3 and 4 below summarize the anticipated impact determinations provided for each listed species. The project is anticipated to have **no effect on nine listed species** (four federal-listed and five state-listed). It is expected that the **project may affect, but is not likely to adversely affect 15 species** (four federal-listed and eleven state-listed). Table 5 summarizes anticipated impacts determinations for two other species: the Osprey and the Bald Eagle.

Table 3 Anticipated Effects Determination Summary of Federal-Listed Species

Federal Listed Species	No Effect	May Affect, Not Likely To Adversely Affect
American Alligator, FT-S/A (<i>Alligator mississippiensis</i>)		X
Eastern Indigo Snake, FT (<i>Drymarchon couperi</i>)		X
Sand Skink, FT (<i>Neoseps reynoldsi</i>)	X	
Blue-tailed Mole Skink, FT (<i>Eumeces egregious lividus</i>)	X	
Florida Scrub Jay, FT (<i>Aphelocoma coerulescens</i>)	X	
Audubon's Crested Caracara, FT (<i>Polyborus plancus audubonii</i>)		X
Wood Stork, FT (<i>Mycteria americana</i>)		X
Everglade Snail Kite, FE (<i>Rostrhamus sociabilis plumbeus</i>)	X	

Table 4 Anticipated Effects Determination Summary of State-Listed Species

State Listed Species	No Effect	May Affect, Not Likely To Adversely Affect
Gopher Frog, SSC (<i>Rana capito</i>)		X
Gopher Tortoise, ST (<i>Gopherus polyphemus</i>)		X
Florida Pine Snake, SSC (<i>Pituophis melanoleucus mugitus</i>)		X

State Listed Species	No Effect	May Affect, Not Likely To Adversely Affect
Limpkin, SSC (<i>Aramus guarauna</i>)		X
Florida Burrowing Owl (<i>Athene cunicularia floridana</i>)	X	
Little Blue Heron, SSC (<i>Egretta caerulea</i>)		X
Tricolored Heron, SSC (<i>Egretta tricolor</i>)		X
White Ibis, SSC (<i>Eudocimus albus</i>)		X
Southeastern American Kestrel, ST (<i>Falco sparverius paulus</i>)		X
Florida Sandhill Crane, ST (<i>Grus canadensis pratensis</i>)		X
Florida Mouse, SSC (<i>Podomys floridanus</i>)		X
Sherman's Fox Squirrel, SSC (<i>Sciurus niger shermani</i>)		X
Sand Butterfly Pea, SE (<i>Centrosema arenicola</i>)	X	
Spoon-leaved sundew, ST (<i>Drosera intermedia</i>)	X	
Florida Spiny-pod, ST (<i>Matelea floridana</i>)	X	
Yellow Fringeless Orchid, SE (<i>Platanthera intergra</i>)	X	

Table 5 Anticipated Effects Determination Summary of Other Species

Other Species	No Effect	May Affect, Not Likely To Adversely Affect
Bald Eagle (<i>Haliaeetus leucocephalus</i>)		X
Osprey (<i>Pandion haliaetus</i>)		X

4.1.4 Critical Habitat Impacts

There are no critical habitats as defined by the USFWS within the project limits. The project will have no effect on critical habitats.

5.0 CONCLUSION

The project is a one-mile-long segment of SR 60 that includes elevating the SR 60 roadway over the existing CSX railroad at-grade crossing. The roadway will be elevated using permanent retaining walls (i.e. MSE walls). Three new pairs of SR 60 bridge structures are proposed over the existing CSX railroad, over an existing underground petroleum pipeline and frontage road, and over the PCDC. The existing eastbound SR 60 bridge over the PCDC will be rehabilitated and re-used for frontage road access and the westbound bridge will be removed. Sidewalks, bicycle lanes, and three new frontage roads will be included in the improvements. Two off-site stormwater management facilities (SMFs) are proposed. Right-of-way acquisition will occur to accommodate the elevation of SR 60, SMFs, and the frontage roads. The habitat within the

project area was compared with the requirements for each species and potential impact to each species was evaluated.

Twenty-four listed species and two managed species were identified as having the potential to occur in the project limits. The project is within the USFWS' Consultation Area for the sand skink, blue-tailed mole skink, Florida Scrub Jay, Audubon's Crested Caracara, and the Everglade Snail Kite. The project is also within the Core Foraging Area for four Wood Stork nesting colonies.

The project is anticipated to have **no effect on nine listed species** (four federal-listed and five state-listed). These are the sand skink, blue-tailed mole skink, Florida Scrub Jay, Everglade Snail Kite, Burrowing Owl, sand butterfly pea, spoon-leaved sundew, Florida spiny-pod, and yellow fringeless orchid.

It is anticipated that the project **may affect, but is not likely to adversely affect 15 species** (four federal-listed and eleven state-listed). These are the American alligator, Eastern indigo snake, Audubon's Crested Caracara, Wood Stork, gopher frog, gopher tortoise, Florida pine snake, Limpkin, Little Blue Heron, Tricolored Heron, White Ibis, Southeastern American Kestrel, Florida Sandhill Crane, Florida mouse, and Sherman's fox squirrel.

Is it anticipated the project **may affect, but is not likely to adversely affect** two managed species, the **Osprey and Bald Eagle**. No critical habitat is present in the project area. There will be **no effect to critical habitat** as a result of this project.

Based upon the findings of this report the FDOT will adhere to the following commitments:

- Eastern indigo snake: The USFWS Standard Protection Measures for the Eastern Indigo Snake will be adhered to during construction of the project.
- Wood Stork: Based on the proximity of four Wood Stork rookeries to the project site, the FDOT commits to provide mitigation for impacts to SFH habitats potentially utilized by the Wood Stork. Coordination with USFWS as necessary will occur.
- State-Listed Wading Birds (Limpkin, Little Blue Heron, Tricolored Heron, White Ibis): The FDOT will mitigate for impacts to wetland habitats potentially utilized by these state-listed species pursuant to Part IV, Chapter 373, F.S. and U.S.C. 1344,
- Gopher tortoise: Due to the presence of active gopher tortoise burrows within and adjacent to existing right-of-way, a gopher tortoise survey within construction limits (including roadway footprint, construction staging areas, and stormwater management ponds) will be performed prior to construction per FWC's Gopher Tortoise Permitting

Guidelines (FWC, 2008 Rev. 2015). The FDOT will secure an FWC relocation permit and relocate gopher tortoises to an approved long-term, recipient site prior to construction.

- Species commensal with the gopher tortoise (gopher mouse, gopher frog, Florida pine snake): The FDOT will secure an FWC relocation permit to excavate and relocate gopher tortoises prior to construction. Commensal species will be handled in accordance with the FWC's Gopher Tortoise Permitting Guidelines (FWC, 2008 Rev. 2015).

6.0 REFERENCES

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Appendix 1
Audubon's Crested Caracara Survey Results
Technical Memorandum

Audubon's Crested Caracara Survey Results Technical Memorandum

SR 60 Grade Separation Over CSX RR

FPID 436559-1-52-01

Polk County

Prepared For:

**Florida Department of Transportation, District One
801 N. Broadway Avenue
Bartow, FL 33830**



June 2016

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APPENDICES

Appendix A Photo Pages

Appendix B Survey Data Sheets

1 INTRODUCTION

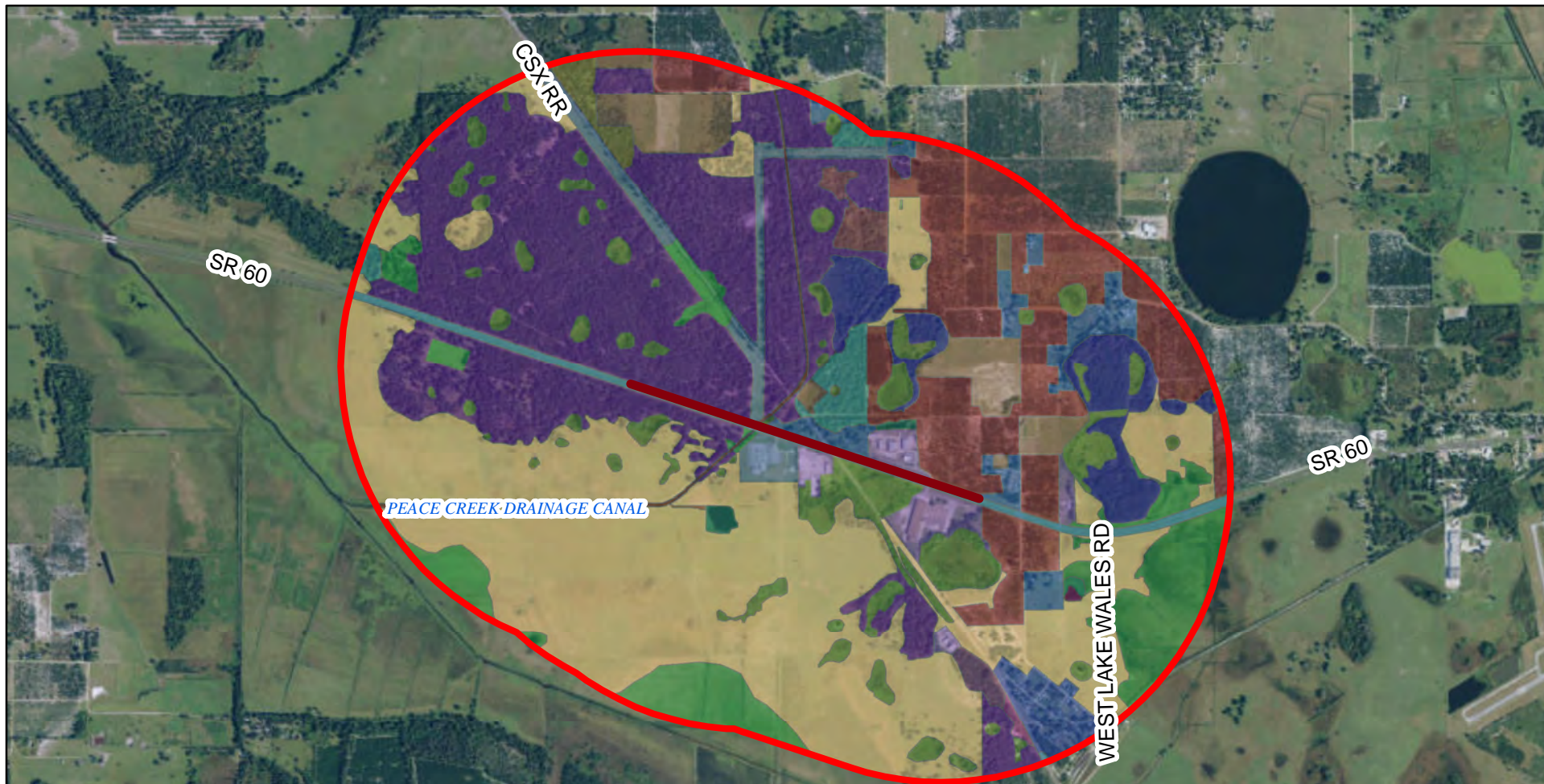
The project limits for the SR 60 Grade Separation Over CSX RR falls within the US Fish and Wildlife Service (USFWS) Consultation Area for the Audubon's Crested Caracara. According to FNAI, the Crested Caracara has been documented within Polk County, but not within one mile of the project area.

In an effort to gather information needed for the USFWS to provide concurrence or non-concurrence with the effect determination, the FDOT conducted a survey in January throughout April 2016 in accordance with the USFWS 2004 Caracara Survey Protocol (USFWS, 2004) and the Additional Guidance provided by USFWS to the FDOT in November 2015. A description of the 2016 Crested Caracara survey methodology and results is provided below.

2 SURVEY METHODOLOGY

Prior to conducting the initial field review, a 1500 m buffer was applied to an aerial using GIS software, and five monitoring station locations were selected based on visibility and presence of suitable habitat for the species. Suitable habitat consisted of open country, such as wet and dry prairie and pasturelands with scattered cabbage palms, cabbage palm/live oak hammocks, shallow ponds and sloughs, and agricultural lands. Habitat types are shown on the Map of Habitat Types (Figure 1). Stations were also selected based on the presence of suitable nesting trees such as cabbage palms and clumps of live oak trees located adjacent to contiguous pasturelands within sight distance from the edge of the SR 60 right-of-way. In addition, stations were selected based on their vantage point where large expanses of suitable habitat would easily be visible from a stationary vehicle or blind using spotting scopes and binoculars. Station locations are shown on the Crested Caracara Monitoring Locations Map (Figure 2). A field review was conducted to confirm the vantage points and suitability of each monitoring station. Photographs of each station are included in Appendix A.

Between the months of January 2016 and April 2016, observations were made at each station once every two weeks. Crested Caracara surveys began during the week of January 2, 2016 and ended during the week of April 25, 2016. On each day of monitoring, stations were observed from fifteen minutes before sunrise to three hours after sunrise. With each of the five stations monitored once a week over nine weeks, a total of 143 hours of observations were conducted during the survey.



Legend

Project Limits

1500m Buffer

Habitat Types

CROPLAND AND PASTURELAND

EMERGENT AQUATIC VEGETATION

FRESHWATER MARSHES

HARDWOOD CONIFER MIXED

INDUSTRIAL

LAKES

OPEN LAND

OTHER OPEN LANDS <RURAL>

PINE FLATWOODS

RESERVOIRS

RESIDENTIAL LOW DENSITY

RESIDENTIAL MED DENSITY

SHRUB AND BRUSHLAND

STREAMS AND WATERWAYS

TRANSPORTATION

TREE CROPS

TREE PLANTATIONS

UPLAND CONIFEROUS FOREST

UTILITIES

WET PRAIRIES

WETLAND FORESTED MIXED



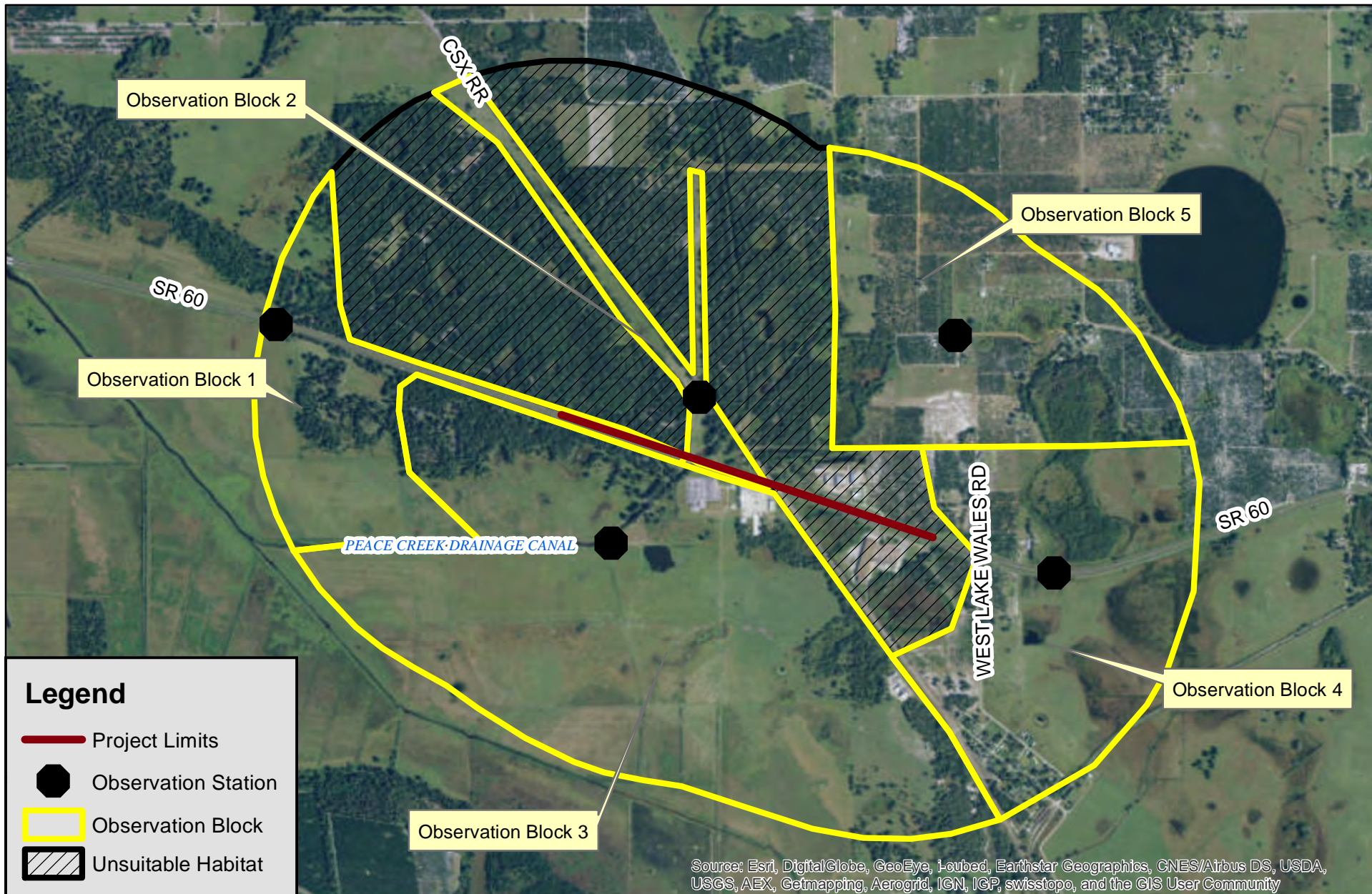
Map of Habitat Types
SR 60 Grade Separation over CSX Railroad
FPID 436559-1-52-01

1 inch = 3,000 feet

0 1,500 3,000
Feet



Figure 1



Crested Caracara Survey Observation Block Map
 SR 60 Grade Separation over CSX Railroad
 FPID 436559-1-52-01

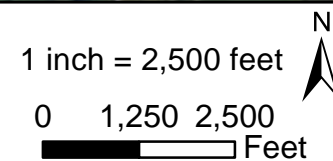


Figure 2

Four observers participated in the survey and their qualifications are listed below in Table 1. Each observer has at least 40 hours of Crested Caracara survey experience under the supervision of an experienced caracara surveyor. Additionally, the observers have experience with surveys for species such as the Southeastern American Kestrel (*Falco sparverius paulus*), Florida Scrub Jay (*Aphelocoma coerulescens*), and Bald Eagle (*Haliaeetus leucocephalus*).

Table 1 Observer Information

Observer	Hours of Experience	Number of Nests Identified	Primary/Secondary Observer
Nicole Cribbs	333 Hours	One	Primary
Shannon Ladd	227 Hours	Zero	Primary
Michelle Grover	102 Hours	Zero	Primary
Bruce Hasbrouck	89 Hours	Zero	Primary

Species activities were monitored by vehicle or in a blind at each station. Cabbage palms and oak trees located within visible distance of the stations were monitored for nesting, roosting, and foraging activity. During each visit, Crested Caracara absence/presence was observed and noted at each station as well as other species observed. The caracara survey data sheets with observations are included in Appendix B.

3 RESULTS

Table 2 below lists the specific field review dates and the results of each monitoring event.

Table 2 2016 Crested Caracara Survey Dates and Results

Field Dates	Caracara Observed
January 7 & 8, 2016	None
January 21 & 22, 2016	None
February 4-6, 2016	None
February 17 & 18, 2016	None
March 2-4, 2016	None
March 17 & 18, 2016	None
March 29 & 31, 2016 and April 1, 2016	None
April 12-14, 2016	None
April 27-29, 2016	None

No Crested Caracara individuals or caracara nesting activity were observed within the survey area during the 2016 survey. Also, no caracaras were observed at any time during the Southeastern American Kestrel surveys (conducted in the summer of 2015) or during establishment of wetland and surface water limits. However, these two activities were conducted outside of nesting season.

Although no Crested Caracara was observed during the survey, the following 56 bird species were observed:

- American Crow (*Corvus brachyrhynchos*)
- American Robin (*Turdus migratorius*)
- Anhinga (*Anhinga anhinga*)
- Bald Eagle (*Haliaeetus leucocephalus*)
- Barn Swallow (*Hirundo rustica*)
- Belted Kingfisher (*Megasceryle alcyon*)
- Black Vulture (*Corvus atratus*)
- Blue Jay (*Cyanocitta cristata*)
- Blue-gray Gnatcatcher (*Poliophtila caerulea*)
- Boat-tailed Grackle (*Quiscalus major*)
- Carolina Chickadee (*Poecile carolinensis*)
- Carolina Wren (*Thryothorus ludovicianus*)
- Cattle Egret (*Bubulcus ibis*)
- Common Grackle (*Quiscalus quiscula*)
- Downy Woodpecker (*Picoides pubescens*)
- Ducks (Unknown)
- Eastern Meadowlark (*Sturnella magna*)
- Eastern Phoebe (*Sayonaris phoebe*)
- European Starling (*Sturnus vulgaris*)
- Florida Sandhill Crane (*Grus canadensis pratensis*)
- Glossy Ibis (*Plegadis falcinellus*)
- Gray Catbird (*Dumetella carolinensis*)
- Great Blue Heron (*Ardea herodias*)
- Great Egret (*Ardea alba*)
- Greater Yellowlegs (*Tringa melanoleuca*)
- Killdeer (*Charadrius vociferus*)
- Least Flycatcher (*Empidonax minimus*)
- Lesser Yellowlegs (*Tringa flavipes*)
- Little Blue Heron (*Egretta caerulea*)
- Loggerhead Shrike (*Lanius ludovicianus*)
- Mourning Dove (*Lanius ludovicianus*)
- Mottled Duck (*Anas fulvigula*)
- Northern Bobwhite (*Colinus virginianus*)
- Northern Cardinal (*Cardinalis cardinalis*)
- Northern Harrier (*Circus cyaneus*)
- Northern Mockingbird (*Mimus polyglottos*)
- Osprey (*Pandion haliaetus*)
- Palm Warbler (*Seophaga palmarum*)
- Pileated Woodpecker (*Dryocopus pileatus*)
- Pine Warbler (*Setophaga pinus*)
- Red-bellied Woodpecker (*Melanerpes carolinus*)
- Red-shouldered Hawk (*Buteo lineatus*)
- Red-tailed Hawk (*Buteo jamaicensis*)
- Red-winged Blackbird (*Agelaius phoeniceus*)
- Roseate Spoonbill (*Platalea ajaja*)
- Snowy Egret (*Egretta thula*)

- Southeastern American kestrel (*Falco sparverius paulus*)
- Swallow-tailed Kite (*Elanoides fortificatus*)
- Tree Swallow (*Tachycineta bicolor*)
- Tricolored Heron (*Egretta tricolor*)
- Turkey Vulture (*Cathartes aura*)
- White Ibis (*Eudocimus albus*)
- White Pelican (*Pelecanus erythrorhynchos*)
- Wilson's Snipe (*Gallinago delicata*)
- Wood Stork (*Mycteria americana*)
- Yellow-rumped Warbler (*Setophaga coronata*)

4 EFFECT DETERMINATION

The project limits for the SR 60 Grade Separation Over CSX RR falls within the USFWS Consultation Area for the Audubon's Crested Caracara. Suitable habitat is present within 1,500 meters of the project limits. No Crested Caracaras were documented within the project limits during the Spring 2016 survey. Based on the survey results, it has been determined that the project "may affect, but is not likely to adversely affect" the Crested Caracara.

5 REFERENCES

FNAI 2016. Element Occurrence Data Report. Florida Natural Areas Inventory. May 31, 2016.

USFWS 2004. Draft Species Conservation Guidelines South Florida Audubon's Crested Caracara. South Florida Ecological Services, US Fish and Wildlife Service. April 20, 2004.

Appendix A

Photo Pages



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 1 — view to the north

Photo 1



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 1 — view to the south-southeast

Photo 2



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 1 — view to the east

Photo 3



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 1 — view to the west

Photo 4



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 2 — view to the north

Photo 5



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 2 — view to the northwest

Photo 6



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 2 — view to the south

Photo 7



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 2 — view to the southeast

Photo 8



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 2 — view to the southwest

Photo 9



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 3 — view to the north

Photo 10



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 3 — view to the northeast

Photo 11



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 3 — view to the southeast

Photo 12



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 3 — view to the south

Photo 13



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 3 — view to the southwest

Photo 14



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 4 — view to the north

Photo 15



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 4 — view to the south

Photo 16



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 4 — view to the east

Photo 17



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 4 — view to the west

Photo 18



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 5 — view to the north

Photo 19



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 5 — view to the south

Photo 20



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 5 — view to the east

Photo 21



SR 60 Grade Separation Over CSX RR
FPID 436559-1-52-01
Station 5 — view to the west

Photo 22

Appendix B

Survey Data Sheets

Crested Caracara Survey Data Sheet

Observation Block Number: 1 Survey Date: 1/8/16

Observer Name: Niki Cribbs Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:05 am</u>				
Temperature <u>62°F</u>	Wind Speed & Direction <u>calm</u>	Cloud Cover <u>Overcast</u>	Visibility <u>good</u>	Precipitation <u>none</u>
Finish Time: <u>10:20 am</u>				
Temperature <u>62°F</u>	Wind Speed & Direction <u>7 mph ESE</u>	Cloud Cover <u>overcast</u>	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Northern cardinal perching on wires
 cattle egrets - fly over
 meadowlark - calling
 red-shouldered hawk perching on fencepost
 Eastern phoebe perching
 Yellow rumped warbler perching
 Barn swallows fly over
 Turkey vultures
 Bald Eagle - fly over from N., perched on powerline pole

Crested Caracara Survey Data Sheet

Observation Block Number: 2 Survey Date: 11/7/16

Observer Name: Shannon Ladd Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:04 AM</u>				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
<u>56°F</u>	<u>NNE 9mi/h</u>	<u>cloudy overcast</u>	<u>fair</u>	<u>light mist</u>

Finish Time: <u>10:19 AM</u>				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
<u>58°F</u>	<u>N 9mi/h</u>	<u>cloudy overcast</u>	<u>fair</u>	<u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

great egret - in flight to N
 warbler (pine warbler?) - perched in oak
 sandhill crane - audible / in flight
 red shouldered hawk - audible
 northern cardinal - in oak
 mourning dove - perched on powerline
 bald eagle - audible? / flight to W
 SE american kestrel - perched on powerline / in flight
 glossy ibis - in flight to W
 turkey vulture - in flight

Crested Caracara Survey Data Sheet

Observation Block Number: 3 Survey Date: 1/7/16

Observer Name: Michelle Grover Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time:				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
57°F	7 mph N	overcast	good	none
Finish Time:				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
58°F	7 mph NNE	overcast	good	none

Caracara Observations: 0

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Great blue heron - Foraging in cattle
 Great egret - Fly over - west, Foraging (II)
 Wood stork - Flyover - heading west (III)
 Killdeer - Flyover
 Little blue heron - Foraging in creek
 Tricolored heron - Foraging in creek
 Sandhill crane - Flyover (III)
 Carolina chickadee - sitting/perching
 American crow - Flyover
 Mourning dove - perching

deer - Foraging

palm warbler many - perching/Foraging

Page 1 of 1 bald eagle - perching power line
 3 rd pole west of CRCA

Belted Kingfisher - perching

black vulture - perching (many)

Crested Caracara Survey Data Sheet

Observation Block Number: 4 Survey Date: 1/7/16

Observer Name: Niki Cribbs Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:05 am</u>				
Temperature <u>57°F</u>	Wind Speed & Direction <u>7mph N</u>	Cloud Cover <u>overcast</u>	Visibility <u>good</u>	Precipitation <u>early mist ending</u>
Finish Time: <u>10:20 am</u>				
Temperature <u>58°F</u>	Wind Speed & Direction <u>7mph NNE</u>	Cloud Cover <u>overcast</u>	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations: ✓

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

great egret flyovers
 turkey vulture perching on power poles
 white ibis flyovers
 sandhill cranes flyovers
 northern harrier foraging in wet prairie
 sandhill cranes " " "
 great blue heron " " "
 kestrel - perching on billboard, fence post (pole 37 has cavity)

Crested Caracara Survey Data Sheet

Observation Block Number: Block 1 Survey Date: 1/21/16

Observer Name: Shannon Ladd Observer Location: in vehicle / blind / on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:05 am</u>				
Temperature <u>49 F</u>	Wind Speed & Direction <u>ESE 6 mph</u>	Cloud Cover <u>Partly cloudy</u>	Visibility <u>good low fog</u>	Precipitation <u>none</u>
Finish Time:				
Temperature <u>60 F</u>	Wind Speed & Direction <u>ESE 7 mph</u>	Cloud Cover <u>Partly cloudy</u>	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

osprey - perched in tree
red-tailed hawk - perched in tree
carle egret - foraging in field
eastern meadowlark - audible
great-tailed grackle - perched on wire
bald eagle - pair, in flight to E
mockingbird - in bush
eastern phoebe - in tree
great egret - in flight to E palm warbler - in tree
CBH - in flight to E

Crested Caracara Survey Data Sheet

Observation Block Number: 2 Survey Date: 1/21/16

Observer Name: Michelle Graver Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:05am</u>				
Temperature <u>45°F</u>	Wind Speed & Direction <u>7 mph E</u>	Cloud Cover <u>Partly cloudy</u>	Visibility <u>Good/Clear</u>	Precipitation <u>None</u>
Finish Time:				
Temperature <u>56°F</u>	Wind Speed & Direction <u>6.9 mph E</u>	Cloud Cover <u>Partly cloudy</u>	Visibility <u>Good/Clear</u>	Precipitation <u>None</u>

Caracara Observations:

- time of day Ø
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Palm warblers - F/ying
 Great egret - Foraging
 Mourning dove - perching
 Blue jay - perching
 Downy woodpecker - perching
 Common grackle - perching
 Wood Stork - Foraging

deer
hog

Pictures @ apex b/w both observation areas

P1 N
 P2 S
 P3 E
 P4 W

Crested Caracara Survey Data Sheet

Observation Block Number: 3 Survey Date: 1/21/16

Observer Name: Niki Cribbs Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:05am</u>				
Temperature <u>47°F</u>	Wind Speed & Direction <u>7mph E</u>	Cloud Cover <u>partly clear</u>	Visibility <u>2lm. low clouds w/ light fog</u>	Precipitation <u>Ø</u>
Finish Time: <u>10:20 am</u>				
Temperature <u>53°F</u>	Wind Speed & Direction <u>7mph ESE</u>	Cloud Cover <u>partly clear</u>	Visibility <u>excellent</u>	Precipitation <u>Ø</u>

Caracara Observations: Ø

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

west flyover

Killdeer foraging

cattle egret flyover

Meadow larks - calling

Bald eagle flyover N-S, perches on power pole

GBH, LBH in canal

ducks (unk sp.)

Boat-tailed grackles flyover

yellow rumped warblers

morning doves

Belted Kingfisher - canal

west foraging in canal

Crested Caracara Survey Data Sheet

Observation Block Number: Block 4 Survey Date: 1/22/16

Observer Name: Shannon Ladd Observer Location: in vehicle / blind / on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:00am</u>				
Temperature <u>63°F</u>	Wind Speed & Direction <u>SSE 12mph</u>	Cloud Cover <u>Cloudy</u>	Visibility <u>good</u>	Precipitation <u>none</u>
Finish Time: <u>10:20am</u>				
Temperature <u>67°F</u>	Wind Speed & Direction <u>SSE 17mph</u>	Cloud Cover <u>cloudy</u>	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

great egret - in flight to E
 GBH - in flight
 sandhill crane - in flight to S, pair - foraging in WLS of SR 64
 cattle egret - perched on crew
 boat tailed grackle - perched on Demerline
 black vulture - in flight
 red wing black bird - in WLS
 white ibis - in flight
 red tailed hawk - perched in tree
 kingfisher - in flight
 northern harrier - in WLS of am crew - perched on SR 64 utility pole
 bald eagle - in flight
 Wood stork - "S"

Crested Caracara Survey Data Sheet

Observation Block Number: 5 Survey Date: 1/22/16
 Observer Name: Michelle Grover Observer Location: in vehicle/blind/on foot
 Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:05</u>				
Temperature <u>59°</u>	Wind Speed & Direction <u>8 mph SE</u>	Cloud Cover <u>overcast/ cloudy</u>	Visibility <u>good / 7 miles</u>	Precipitation <u>None</u>
Finish Time: <u>10:20</u>				
Temperature <u>66°</u>	Wind Speed & Direction <u>17 mph SSE</u>	Cloud Cover <u>overcast/ cloudy</u>	Visibility <u>good / 7 miles</u>	Precipitation <u>None</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Mourning doves - perching
 Sandhill cranes - Flying
 Common grackle - Flying
 ibis - Flying
 Vulture - Flying

8:39am
 locals stated they have never
 seen Caracara here

9:05am
 - local property owner, Poland Dargatzis
 stated Caracara used to
 nest south of Whidden rd
 in cemetery area.
 - haven't seen birds in 2-3 years
 - retention pond used to be of
 but overgrown now

P1 Facing N
 P2 " S
 Page 1 of 1
 P3 " E
 P4 " W

*Flagged observation station (see notes on back)

P6 Facing SE
 P6 Nesting site Facing SE
 P7 " " " NE

Crested Caracara Survey Data Sheet

Observation Block Number: Block 1 Survey Date: 2/5/14

Observer Name: Shannon Ladd Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:00am</u>				
Temperature <u>46°F</u>	Wind Speed & Direction <u>N 17 mph</u>	Cloud Cover <u>mostly sunny</u>	Visibility <u>good</u>	Precipitation <u>none</u>
Finish Time:				
Temperature <u>48°F</u>	Wind Speed & Direction <u>N 13 mph</u>	Cloud Cover <u>sunny</u>	Visibility <u>good</u>	Precipitation <u>none</u>
Caracara Observations: <ul style="list-style-type: none"> • time of day • number of birds • plumage (adult/juvenile) • activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.) • nesting stage (building, incubating, nestlings, fledglings) • flight direction to identify foraging areas and the nesting tree (recorded on aerial) • mark any nesting tree locations on an aerial; do not approach potential nest tree 				
Other Bird Observations and Activity/Behavior: <u>great egret - in flight to W</u> <u>bald eagle - perched on power pole</u> <u>florida sandhill cranes - foraging in field</u> <u>meadowlarks - in field</u> <u>black vultures - in flight</u> <u>mockingbird - perched on fence</u> <u>white ibis - in flight to W</u> <u>kestrel - in flight</u>				

Crested Caracara Survey Data Sheet

Observation Block Number: 2 Survey Date: 2/4/16

Observer Name: Niki Cribbs Observer Location: in vehicle blind / on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:00 am</u>				
Temperature <u>68°F</u>	Wind Speed & Direction <u>9 mph SSE</u>	Cloud Cover <u>high clouds mostly clear</u>	Visibility <u>excellent</u>	Precipitation <u>none</u>
Finish Time: <u>10:10 am</u>				
Temperature <u>72°F</u>	Wind Speed & Direction <u>11 mph SSE</u>	Cloud Cover <u>overcast</u>	Visibility <u>excellent</u>	Precipitation <u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Pileated woodpecker flyover $E \rightarrow W \rightarrow N$ mourning doves pecking
 Bald eagle (juv.) perched on tower, flew to N. Pr. of adults @ substation
 " " adult flyover to N
 Northern Cardinal
 Blue jay in oak tree, calling
 Red-tailed hawk soaring
 Turkey vulture
 Kestrels foraging in powerline easement
 WOST $S \rightarrow N$
 Pr.

CSX guy - "lots of Eagles out here, no caracara this far north"

Crested Caracara Survey Data Sheet

Observation Block Number: Block 3 Survey Date: 2/4/14

Observer Name: Shannon Ladd Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:00 am</u>				
Temperature <u>68°F</u>	Wind Speed & Direction <u>SSE 14 mph</u>	Cloud Cover <u>partly cloudy</u>	Visibility <u>good</u>	Precipitation <u>none</u>
Finish Time: <u>10:10 am</u>				
Temperature <u>72°F</u>	Wind Speed & Direction <u>SSE 11 mph</u>	Cloud Cover	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

GBH - wading in WL mottled ducks - in creek
woodstork - wading in creek tree swallows - in flight
bald eagle - in flight to W. yellowlegs - foraging in WL
Killdeer - in field great egret - foraging in WL
anhinga - on creek bank black vulture
red wing black birds - perched on fence mourning dove
sandhill cranes - in flight to E
cattle egrets - in field
loggerhead shrike - perched on fence

Crested Caracara Survey Data Sheet

Observation Block Number: 4 **Survey Date:** 2/6/16
Observer Name: Niki Cribbs **Observer Location:** in vehicle / blind / on foot
Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:55 am</u>				
Temperature <u>49° F</u>	Wind Speed & Direction <u>7 mph N</u>	Cloud Cover <u>mostly clear high clouds</u>	Visibility <u>excellent</u>	Precipitation <u>none</u>
Finish Time: <u>10:10 am</u>				
Temperature <u>55° F</u>	Wind Speed & Direction <u>9 mph N</u>	Cloud Cover <u>partly clear high cumulus</u>	Visibility <u>excellent</u>	Precipitation <u>none</u>

Caracara Observations: Ø

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Bald eagle flyover S → N
west in wetlands to N

Sandhill cranes - in wetlands to N, flyovers

White Ibis flyover

Boat tailed grackles - perching, flying about

Red winged Black Birds in wetlands to South

GBH carrying nesting material into bay head to N.

Northern cardinal - perching, calling in oaks

Black vultures, turkey vultures

Mourning doves } perching on wires

Blue Jay }

Crested Caracara Survey Data Sheet

Observation Block Number: 5 Survey Date: 2/5/16

Observer Name: Michelle Grover Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:00</u>				
Temperature <u>45°</u>	Wind Speed & Direction <u>NNW 10mph</u>	Cloud Cover <u>clear</u>	Visibility <u>10 miles</u>	Precipitation <u>0</u>
Finish Time: <u>10:15</u>				
Temperature <u>49°</u>	Wind Speed & Direction <u>N 12mph</u>	Cloud Cover <u>clear</u>	Visibility <u>10 miles</u>	Precipitation <u>0</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

mourning dove - perching
starlings - Foraging
sandhill crane - Fly over
Tod shouldered hawk - perching
black vulture - Soaring
woodpecker (audible)
red winged blackbird
Common grackle
American Kestrel

Crested Caracara Survey Data Sheet

Observation Block Number: 1 Survey Date: 18 Feb 16

Observer Name: Bruce Hasbrouck Observer Location: in vehicle (circled) / blind / on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:50</u>				
Temperature <u>54</u>	Wind Speed & Direction <u>NE 5</u>	Cloud Cover <u>0</u>	Visibility <u>unlimited</u>	Precipitation <u>0</u>
Finish Time:				
Temperature <u>64</u>	Wind Speed & Direction <u>NE 5-10</u>	Cloud Cover <u>0</u>	Visibility <u>unl</u>	Precipitation <u>0</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Doves, R.W. Blackbird, white eyed, grackle, meadow lark
 Bald Eagle (3) - Fly South. Osprey, G.B.H., warbler, turkey vulture
 → Cavorting
 least Flycatcher

Crested Caracara Survey Data Sheet

Observation Block Number: 2 Survey Date: 2/18/16
 Observer Name: Niki Gibbs Observer Location: in vehicle/blind/on foot
 Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:45</u>				
Temperature <u>51° F</u>	Wind Speed & Direction <u>6 mph NNE</u>	Cloud Cover <u>0%</u>	Visibility <u>excellent</u>	Precipitation <u>none</u>
Finish Time:				
Temperature <u>58° F</u>	Wind Speed & Direction <u>11 mph NNE</u>	Cloud Cover <u>0%</u>	Visibility <u>excellent</u>	Precipitation <u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Bald eagle perched on tower ^{adult perched @ substation}
 Great egret flyover E → W ^{leaves perch for south}
 Blue jay perching, calling
 Wood stork flyover W → E, into canal ^{adult, 2 adult adults in flight over power line}
 GBH E → W ^{soaring}
 northern cardinal calling
 Osprey in flight
 Turkey vulture soaring around
 Redshouldered Hawk
 Black vulture
 Bobcat
 Kestrel foraging in easement, perching on wires

Crested Caracara Survey Data Sheet

Observation Block Number: 3 Survey Date: 2/18/16

Observer Name: Shannon Ladel Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:45 am</u>				
Temperature <u>52 F</u>	Wind Speed & Direction <u>NNE 9 mph</u>	Cloud Cover <u>clear</u>	Visibility <u>good</u>	Precipitation <u>none</u>
Finish Time: <u>10:05 am</u>				
Temperature <u>58 F</u>	Wind Speed & Direction <u>NNE 10 mph</u>	Cloud Cover <u>clear</u>	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

perched on power pole

red-tailed hawk - in flight sandhill cranes - foraging in field

bald eagle - in flight to N mottled ducks - in canal

wood storks foraging in canal

Killdeer - foraging in field W of canal

great egrets - in flight to W loggerhead shrike - perched on fence post

pink duck - in flight to W anhinga - in canal

meadowlark

lesser yellowlegs } foraging in field W of canal

red wing blackbird } northern harrier - in flight

osprey - in flight

American robin - in flight American crow

black vulture - in flight juvenile eagle - in flight

belted kingfisher - in flight cottontailed grackle

CBH - foraging in WL

Crested Caracara Survey Data Sheet

Observation Block Number: 4 Survey Date: 2/17/16
 Observer Name: Shannen Ladd Observer Location: in vehicle / blind / on foot
 Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:45 am</u>				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
<u>50°F</u>	<u>NNW 4 mph</u>	<u>heavy fog</u>	<u>POOR</u>	<u>none</u>
Finish Time: <u>10:05 am</u>				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
<u>53°F</u>	<u>NW 7 mph</u>	<u>partly cloudy</u>	<u>good</u>	<u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

great egret - in flight to S black vulture - in flight
 sandhill crane - foraging in field S of SR 60
 red wing black bird - perched on powerline
 SE american kestrel - perched on powerline
 great blue heron - in flight to S
 crow - perched on powerline eastern phoebe -
 white ibis - in flight to N perched in tree
 meadowlark - audible red bellied woodpecker
 blue-gray gnatcatchers - in shrubs in flight / perched on powerline
 ovenbird - in flight to NW

Crested Caracara Survey Data Sheet

Observation Block Number: 5 Survey Date: 2/18/16

Observer Name: Michelle Grover Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:45am</u>				
Temperature <u>52°</u>	Wind Speed & Direction <u>NNE 9 mph</u>	Cloud Cover <u>clear</u>	Visibility <u>Slight haze but 10 miles</u>	Precipitation <u>0</u>
Finish Time: <u>10:00am</u>				
Temperature <u>58°</u>	Wind Speed & Direction <u>NNE 9 mph</u>	Cloud Cover <u>Clear</u>	Visibility <u>clear 10 miles</u>	Precipitation <u>0</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Starlings - Flying

grackle - Flying

Sandhill crane - Flying

mourning dove - perching

mockingbird - perching

blue jay - perching

woodpecker (audible) - foraging

palm warbler - foraging

cardinal - perching

redwinged blackbird - perching

yellow rumped warbler - foraging

black vulture - soaring

Sandhill crane - foraging

red bellied woodpecker - perching

Crested Caracara Survey Data Sheet

Observation Block Number: 1 Survey Date: 3/2/16

Observer Name: Shannon Ladd Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:35 am</u>				
Temperature <u>62 F</u>	Wind Speed & Direction <u>SW 6 mph</u>	Cloud Cover <u>cloudy</u>	Visibility <u>fair</u>	Precipitation <u>none</u>
Finish Time: <u>10:00 am</u>				
Temperature <u>68 F</u>	Wind Speed & Direction <u>W 9 mph</u>	Cloud Cover <u>cloudy</u>	Visibility <u>good</u>	Precipitation <u>none</u>
Caracara Observations: <ul style="list-style-type: none"> • time of day • number of birds • plumage (adult/juvenile) • activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.) • nesting stage (building, incubating, nestlings, fledglings) • flight direction to identify foraging areas and the nesting tree (recorded on aerial) • mark any nesting tree locations on an aerial; do not approach potential nest tree 				
Other Bird Observations and Activity/Behavior: <u>GBH - in flight to W</u> <u>bald eagle - perched on power pole, pair in flight to E</u> <u>sandhill crane - pair in flight to E</u> <u>yellow-rumped warbler - perched in shrubs</u> <u>great egret - in flight to W</u> <u>meerkat bird - perched on power line</u> <u>black vulture</u>				

Crested Caracara Survey Data Sheet

Observation Block Number: 2 Survey Date: 3/3/16

Observer Name: Shannon Ladd Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time:				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
55°F	N 5 mph	mostly sunny	good	none
Finish Time:				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
63°F	E 6 mph	partly cloudy	good	none

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

red tailed hawk - in flight / perched in tree
 wood storks - in flight to S
 sandhill cranes - audible / foraging
 bald eagle - perched on power pole
 mourning dove - perched on power line
 blue jay - perched in tree
 blue-gray gnatcatcher - " american robin - in field
 great egret - in flight to W
 white ibis - " " meadow lark - audible
 boat tailed grackles - perched on power line

Crested Caracara Survey Data Sheet

Observation Block Number: 3 Survey Date: 3/3/16

Observer Name: Michelle Grover Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:35</u>				
Temperature <u>55°F</u>	Wind Speed & Direction <u>5mph NNW</u>	Cloud Cover <u>Cloudy Foggy</u>	Visibility <u>low due to fog 10 miles</u>	Precipitation <u>Ø</u>
Finish Time: <u>9:50</u> fog burned off shortly after sunrise				
Temperature <u>63°</u>	Wind Speed & Direction <u>5mph NE</u>	Cloud Cover <u>overcast</u>	Visibility <u>10 miles</u>	Precipitation <u>Ø</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Mottled duck - Flyover

Wood Stork - Flyover

great blue heron - Flyover

Sandhill crane - Flyover

Ibis - Flyover

palm warbler - foraging

red winged blackbird - perching

Killdeer - Foraging

great egret - foraging

morning dove - perching

balisee eagle - Flying

meadowlark - Flying

Adult eagle - perching

2017501

Crested Caracara Survey Data SheetObservation Block Number: 4 Survey Date: 3/3/16Observer Name: N. Cribbs Observer Location: in vehicle/blind/on footProject and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101**Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)**

Start Time: <u>6:35</u>				
Temperature <u>55°F</u>	Wind Speed & Direction <u>4 mph NE</u>	Cloud Cover <u>overcast</u>	Visibility <u>good</u>	Precipitation <u>none</u>
Finish Time: <u>9:50</u>				
Temperature <u>63°F</u>	Wind Speed & Direction <u>6 mph E</u>	Cloud Cover <u>high clouds</u>	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations: Ø

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Cattle egrets fly over N→S
 white ibis " "
 redshouldered hawk on pole, kestrel on wire
 Wood storks fly over S→N
 Sandhill cranes (2) foraging in pasture
 ↳ not paired
 Boat-tailed grackles fly over

Red-tailed hawk in flight
 Turkey v. in flight
 Black vultures perching on power poles
 Red bellied w.p. on " "
 Northern cardinal perching in oaks
 Bald eagle adult fly over to E
 American crow perching on pole
 Meadowlark in pasture
 and N→S

Crested Caracara Survey Data Sheet

Observation Block Number: 5 Survey Date: 3/4/16

Observer Name: Niki Cribbs Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:35</u>				
Temperature <u>65°F</u>	Wind Speed & Direction <u>calm</u>	Cloud Cover <u>partly cloudy</u>	Visibility <u>good</u>	Precipitation <u>none</u>
Finish Time: <u>9:50</u>				
Temperature <u>68°F</u>	Wind Speed & Direction <u>calm</u>	Cloud Cover <u>none</u>	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations: Ø

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Blue jays, ^{nesting material} mocking birds perching

Black vulture

Sandhill cranes fly over S→N

American Robin

White Ibis fly over E→W

mourning doves perching on wires

Gray catbird

red bellied woodpecker on wooden poles

Swallow tail kites ^(Pair) fly over S→N

Crested Caracara Survey Data Sheet

Observation Block Number: 1 Survey Date: 3/17/14

Observer Name: Shannon Ladd Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:20 am</u>				
Temperature <u>68°F</u>	Wind Speed & Direction <u>WNW 4mph</u>	Cloud Cover <u>fog</u>	Visibility <u>fair</u>	Precipitation <u>none</u>
Finish Time: <u>10:35 am</u>				
Temperature <u>72°F</u>	Wind Speed & Direction <u>SW 7mph</u>	Cloud Cover <u>partly cloudy</u>	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

sandhill cranes - flight to N
 bald eagle - flight to S
 juvenile bald eagle - flight to NW
 link ducks - flight to E
 adult eagle x2 + juvenile eagle - perched in trees - adult eating roadkill located adj to station
 wood stork - in flight to E
 great egret - in flight
 GBH - in flight
 mourning dove - perched on powerline
 american crow - in flight
 northern harrier - in flight to N
 meadowlark - audible perched on powerline
 meadow bird - perched on powerline

Crested Caracara Survey Data Sheet

Observation Block Number: 2 Survey Date: 17 mar 16

Observer Name: Bruce H Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)
9:20

Start Time: <u>6:50</u>				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
<u>70</u>	<u>0</u>	<u>Foggy</u>	<u>1 mile</u>	<u>0</u>

Finish Time:				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
<u>78</u>	<u>mild SE</u>	<u>partly cloudy</u>	<u>unl.</u>	<u>0</u>

Caracara Observations:

- time of day
- number of birds ①
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Pair of eagles over OAKS S. of RR
 Ducks
 Egrets
 GBN
 IBIS
 Doves
 Vultures
 Sandhill cranes
 Immature eagle one tower north west of point tower
 Ospreys
 Eagle chasing pair of ospreys
 2nd immature in tower north of RR
 lighter color
 Flew SE 10:05
 Flew SE 10:10

Crested Caracara Survey Data Sheet

Observation Block Number: 3 Survey Date: 3/17/16

Observer Name: Michelle Groves Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:20</u>				
Temperature <u>67°</u>	Wind Speed & Direction <u>5mph WNW</u>	Cloud Cover <u>overcast</u>	Visibility <u>Foggy low</u>	Precipitation <u>Ø</u>
Finish Time: <u>10:35</u>				
Temperature <u>69°</u>	Wind Speed & Direction <u>5mph W</u>	Cloud Cover <u>mostly cloudy</u>	Visibility <u>good some haze</u>	Precipitation <u>Ø</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

P1-P4 N,S,E,W
P5-P9 N,S,E,W

Other Bird Observations and Activity/Behavior:

Osprey (audible)

Killdeer - Foraging

red winged blackbird (audible) perching

meadowlark (audible)

juvenile bald eagle - perching on power pole - NW

Sandhill crane - Flying

common snipe - Foraging

Mottled duck - Foraging

Great blue heron - Foraging

Eagle Ø nest to east

adult eagle perching on power pole to the east

Roseate spoonbill (Flying)

Mockingbird perching

little blue heron

Crested Caracara Survey Data Sheet

Observation Block Number: 4 Survey Date: 3/18/16

Observer Name: Shannen Ladd Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:20 am</u>				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
<u>64°F</u>	<u>SW 4 mph</u>	<u>partly cloudy</u>	<u>fair (some fog)</u>	<u>none</u>
Finish Time: <u>10:35 am</u>				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
<u>73°F</u>	<u>SSW 8 mph</u>	<u>partly cloudy</u>	<u>good</u>	<u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

unk ducks - in flight red-bellied woodpecker
meadowlark - audible anhinga - in flight to N
red wing black bird - audible sandhill cranes - in flight to N
GBH - in flight to W
white ibis - in flight to W turkey vulture
resate spoonbill - in flight to W black vulture
american crow perched on powerline
boat-tailed grackle
great egret - in flight to W

Crested Caracara Survey Data Sheet

Observation Block Number: 5 Survey Date: 3/8/16

Observer Name: Michelle Grover Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:15</u>				
Temperature <u>68°</u>	Wind Speed & Direction <u>SE 1mph</u>	Cloud Cover <u>Foggy</u>	Visibility <u>Foggy</u>	Precipitation <u>0</u>
Finish Time: <u>10:30</u>				
Temperature <u>72°</u>	Wind Speed & Direction <u>SSW 4</u>	Cloud Cover <u>pty cloud</u>	Visibility <u>Clear/ Good</u>	Precipitation <u>0</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Swallowtail Kite - Soaring

Osprey - Soaring

Robin - perching

Common Snipe - Foraging

Mourning dove - perching

Mockingbird - perching

Osprey - Flying

Red winged blackbird - perching

Black vulture - Soaring, perching on power pole

Blue jay - perching

Crested Caracara Survey Data Sheet

Observation Block Number: 1 Survey Date: 4/1/16

Observer Name: Shannon Ladd Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:00 am</u>				
Temperature <u>70°F</u>	Wind Speed & Direction <u>S 9 mph</u>	Cloud Cover <u>overcast fog</u>	Visibility <u>fair</u>	Precipitation <u>none</u>
Finish Time:				
Temperature <u>75°F</u>	Wind Speed & Direction <u>S 10 mph</u>	Cloud Cover <u>cloudy</u>	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

unk duck - flight to N
bald eagle - flight to NW
white ibis - flight to SE
sandhill crane - foraging
GBH
great egret } in flight
american crow - perched on power pole
black vulture - in flight

Crested Caracara Survey Data Sheet

Observation Block Number: 2 Survey Date: 3/21/14

Observer Name: Shannon Ladd Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:00am</u>				
Temperature <u>67°F</u>	Wind Speed & Direction <u>SSE 3 mph</u>	Cloud Cover <u>partly cloudy</u>	Visibility <u>good</u>	Precipitation <u>none</u>
Finish Time: <u>10:18 am</u>				
Temperature <u>75°F</u>	Wind Speed & Direction <u>SSE 12 mph</u>	Cloud Cover <u>cloudy</u>	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

white ibis - flight to SE
mourning dove - perched on powerline
osprey - in flight / perched in tree / fishing
bald eagle - audible - juvenile perched on power pole
blue jay - in flight - adult " " " + pursuing osprey
hawk - audible
sandhill crane - audible / foraging
swallow-tail kite - in flight
GBH - in flight + snowy egret, roseate spoonbill
+ black vulture

Crested Caracara Survey Data Sheet

Observation Block Number: 3 Survey Date: 3/31/16

Observer Name: Michelle Grover Observer Location: in vehicle/~~blind~~/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:00</u>				
Temperature <u>68°</u>	Wind Speed & Direction <u>7mph ESE</u>	Cloud Cover <u>partly cloudy</u>	Visibility <u>good/deer</u>	Precipitation <u>Ø</u>
Finish Time: <u>10:30</u>				
Temperature <u>72°</u>	Wind Speed & Direction <u>SSE 9mph</u>	Cloud Cover <u>overcast</u>	Visibility <u>good/deer</u>	Precipitation <u>Ø</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Meadowlark (audible)
 bald eagle - perching
 great blue heron - foraging
 mottled ducks - flyover
 cardinal - perching
 logskate shrike - perching
 ibis - flyover

American crow - flyover
 black vulture - soaring

osprey - standing on the ground in the pasture

Crested Caracara Survey Data Sheet

Observation Block Number: 4 Survey Date: 3/29/16
 Observer Name: Shannon Ladd Observer Location: in vehicle/blind/on foot
 Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:05am</u>				
Temperature <u>71°F</u>	Wind Speed & Direction <u>NNE 1 mph</u>	Cloud Cover <u>overcast fog</u>	Visibility <u>fair</u>	Precipitation <u>none</u>
Finish Time: <u>10:20am</u>				
Temperature <u>76°F</u>	Wind Speed & Direction <u>NE 5 mph</u>	Cloud Cover <u>cloudy</u>	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

sandhill crane } in flight
 great egret }
 ABH, white ibis }
 meadowlark - audible
 redwing blackbird - in flight
 boat tailed grackle - in flight
 SE american kestrel - perched on powerline
 black vulture - perched on powerpole
 wood stork - in flight
 european starling - perched on powerline

Crested Caracara Survey Data Sheet

Observation Block Number: 5 Survey Date: 3/24/16

Observer Name: Michelle Grover Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>7:00 am</u>				
Temperature <u>64°</u>	Wind Speed & Direction <u>9 mph NE</u>	Cloud Cover <u>ptly cloudy</u>	Visibility <u>clear</u>	Precipitation <u>∅</u>
Finish Time: <u>10:20 am</u>				
Temperature <u>72°</u>	Wind Speed & Direction <u>10 mph NE</u>	Cloud Cover <u>ptly cloudy</u>	Visibility <u>clear</u>	Precipitation <u>∅</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

mourning doves - perching

Swallowtail Kite - soaring

redwing blackbird - foraging

cardinal - foraging

palm warbler - foraging

black vultures - soaring

ibis - fly over

grackle - perching

Mockingbird - perching

red-tailed hawk - foraging

Crested Caracara Survey Data Sheet

Observation Block Number: 1 Survey Date: 4/14/16

Observer Name: Niki Cribbs Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:45</u>				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
<u>67°F</u>	<u>calm</u>	<u>clear</u>	<u>light ground fog</u>	<u>0</u>

Finish Time:				
Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
<u>75°F</u>	<u>calm</u>	<u>Partly cloudy</u>	<u>Excellent</u>	<u>0</u>

- Caracara Observations:**
- time of day
 - number of birds
 - plumage (adult/juvenile)
 - activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
 - nesting stage (building, incubating, nestlings, fledglings)
 - flight direction to identify foraging areas and the nesting tree (recorded on aerial)
 - mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Cattle egrets foraging
meadowlark in pasture calling
white ibis in flight

Bald Eagle perched on transmission pole
Blue jays
Black vultures in flight

Crested Caracara Survey Data Sheet

Observation Block Number: 2 Survey Date: 4/13/16

Observer Name: Michelle Graver Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>0645</u>				
Temperature <u>67°</u>	Wind Speed & Direction <u>5 mph ESE</u>	Cloud Cover <u>hazy</u>	Visibility <u>good</u>	Precipitation <u>0</u>
Finish Time: <u>1000</u>				
Temperature <u>77°</u>	Wind Speed & Direction <u>1 mph E</u>	Cloud Cover <u>clear</u>	Visibility <u>good</u>	Precipitation <u>0</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

bald eagle - perching
 mourning dove - perching
 Gray catbird - audible
~~Red Adirondack~~
 Carolina wren - audible
 cardinal - audible

Squirrel tree cross audible

Crested Caracara Survey Data Sheet

Observation Block Number: 23 Survey Date: 4/13/16
 Observer Name: Niki Cribbs Observer Location: in vehicle ~~blind~~ / on foot
 Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

7:02 10:00

Start Time: <u>6:45 am</u>				
Temperature <u>67°F</u>	Wind Speed & Direction <u>calm</u>	Cloud Cover <u>clear</u>	Visibility <u>minimal ground fog</u>	Precipitation <u>Ø</u>
Finish Time:				
Temperature <u>77°F</u>	Wind Speed & Direction <u>5 mph SSE</u>	Cloud Cover <u>clear</u>	Visibility <u>excellent</u>	Precipitation <u>Ø</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

GBH Flyover N-S

2 eagles on transmission pole @ substation

meadow larks calling

logger headed shrikes on fence posts

Bob white quail

sandhill cranes foraging

red winged black birds Flyover between wetlands

Killdeer

Bluejays, mocking birds

cattle egrets foraging

Piliated Woodpecker

Greater yellowlegs foraging in PCD

Crested Caracara Survey Data Sheet

Observation Block Number: 4 Survey Date: 4/12/16

Observer Name: Shannon Ladd Observer Location: in vehicle/blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:45 am</u>				
Temperature <u>61 F</u>	Wind Speed & Direction <u>0 mph</u>	Cloud Cover <u>clear</u>	Visibility <u>good</u>	Precipitation <u>none</u>
Finish Time: <u>10:05 am</u>				
Temperature <u>75 F</u>	Wind Speed & Direction <u>SSE 3 mph</u>	Cloud Cover <u>clear</u>	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

<p>red wing black bird - Perched</p> <p>great egret</p> <p>great blue heron } in flight</p> <p>White ibis</p> <p>anhinga</p> <p>wood pecker</p> <p>american crow</p> <p>european starling } Perched on powerline</p> <p>eastern meadowlark</p>	<p>mockingbird</p> <p>sandhill crane - in flight</p> <p>turkey vultures - perched on fence post</p> <p>boat tailed grackle</p> <p>unk ducks in flight (mottled)</p>
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Crested Caracara Survey Data Sheet

Observation Block Number: 5 **Survey Date:** 3/14/15
Observer Name: Michelle Bover **Observer Location:** in vehicle/blind/on foot
Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:45</u>				
Temperature <u>68°</u>	Wind Speed & Direction <u>Calm</u> <u>0 mph</u>	Cloud Cover <u>Foggy</u>	Visibility <u>poor</u>	Precipitation <u>Ø</u>
Finish Time: <u>10:00</u>				
Temperature <u>75°</u>	Wind Speed & Direction <u>ptty calm</u> <u>cto 0 mph</u>	Cloud Cover <u>ptty</u> <u>cloudy</u>	Visibility <u>good</u>	Precipitation <u>Ø</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Red winged black bird - Foraging Mockingbird - perching
Pracox (audible)
Ibis - Fly over, Foraging
Mourning dove - perching
Swallowtail Kite - Soaring
black vulture - Soaring
Common grackle - perching
Sandhill cranes - Foraging

Crested Caracara Survey Data Sheet

Observation Block Number: 1 Survey Date: 4/28/16

Observer Name: Niki Cribbs Observer Location: in vehicle blind/on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: 6:35 am

Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
<u>71°F</u>	<u>2 mph SSE</u>	<u>mostly clear</u>	<u>good</u>	<u>Ø</u>

Finish Time: 9:50 am

Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
<u>78°F</u>	<u>1 mph S</u>	<u>mostly clear</u>	<u>good</u>	<u>Ø</u>

Caracara Observations:

- time of day Ø
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

White ibis flying W-E

GCH in flight to E

Bald eagle perched on transmission pole

Meadow larks in pasture

Sandhill crane (adult pr.) foraging in pasture

Black vultures

Wood Stork in flight over pasture

Crested Caracara Survey Data Sheet

Observation Block Number: 2 Survey Date: 4/27/16

Observer Name: Michelle Grover Observer Location: in vehicle ~~blind~~ / on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:35</u>				
Temperature <u>67°</u>	Wind Speed & Direction <u>2 mph E</u>	Cloud Cover <u>hazy</u>	Visibility <u>Fair</u>	Precipitation <u>Ø</u>
Finish Time: <u>10:00</u>				
Temperature <u>76°</u>	Wind Speed & Direction <u>8 mph SSE</u>	Cloud Cover <u>clear</u>	Visibility <u>good</u>	Precipitation <u>Ø</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Mourning dove - perching
 Red tailed hawk - perching
 juvenile bald eagle - perching
 Catbird - audible
 Carolina wren - audible
 Cardinal - perching
 American crow
 Sandhill cranes

black vulture

Crested Caracara Survey Data Sheet

Observation Block Number: 3 Survey Date: 4/29/16
 Observer Name: Niki Cribbs Observer Location: in vehicle/blind/on foot
 Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: 6:35 am

Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
71°F	calm	partly cloudy	good	Ø

Finish Time:

Temperature	Wind Speed & Direction	Cloud Cover	Visibility	Precipitation
80°F	calm	partly cloudy	good	Ø

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Sandhill crane foraging in pasture
 pair of ducks (unk. spp) fly over to south
 American crows, perching on wires
 cattle egrets
 pr of red bellied wood peckers on ^{wooden} pole w/cavities (#36) ← in + out of cavities
 white pelican flying S → N
 Black vulture perching on pole
 Boat-tailed grackle
 Swallow-tailed kites in flight around grove
 GBH flyover N → S
 European starlings

Crested Caracara Survey Data Sheet

Observation Block Number: 4 Survey Date: 4/28/16

Observer Name: Shannon Ladd Observer Location: in vehicle/☒ on foot

Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:35 am</u>				
Temperature <u>71°F</u>	Wind Speed & Direction <u>SSE 1 mph</u>	Cloud Cover <u>partly cloudy</u>	Visibility <u>good</u>	Precipitation <u>none</u>
Finish Time: <u>9:49 am</u>				
Temperature <u>79°F</u>	Wind Speed & Direction <u>SSE 4 mph</u>	Cloud Cover <u>clear</u>	Visibility <u>good</u>	Precipitation <u>none</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

meadowlark - in field
 sandhill crane - audible
 mottled duck - flight to W
 osprey - flight to E
 great egret - flight to E
 bald eagle - adult x2, juvenile - perched on power ~~line~~ pole
 red wing black birds
 ABH - flight to W
 white ibis - flight to E
 black vulture
 american crow
 meerkat bird
 killdeer - in field

Crested Caracara Survey Data Sheet

Observation Block Number: 5 Survey Date: 4/28/16
 Observer Name: Michelle Grover Observer Location: (in vehicle)/blind/on foot
 Project and FPID: SR 60 Grade Separation over CSX Railroad / FPID 436559-1-52-101

Morning Survey (15 min. before sunrise to 3 hrs. after sunrise)

Start Time: <u>6:35</u>				
Temperature <u>71°</u>	Wind Speed & Direction <u>4 mph SSE</u>	Cloud Cover <u>ptly cloudy</u>	Visibility <u>good</u>	Precipitation <u>0</u>
Finish Time: <u>9:50</u>				
Temperature <u>79° F</u>	Wind Speed & Direction <u>6 mph SSE</u>	Cloud Cover <u>ptly cloudy mostly clear</u>	Visibility <u>good</u>	Precipitation <u>0</u>

Caracara Observations:

- time of day
- number of birds
- plumage (adult/juvenile)
- activity/behavior (foraging, roosting, preening, territorial behavior, carrying nesting material/food, etc.)
- nesting stage (building, incubating, nestlings, fledglings)
- flight direction to identify foraging areas and the nesting tree (recorded on aerial)
- mark any nesting tree locations on an aerial; do not approach potential nest tree

Other Bird Observations and Activity/Behavior:

Mourning dove - perching

ibis - flyover

red winged blackbird - perching

woodpecker - audible

Swallow tail kite - soaring

cardinal (audible)

peacock roosters } audible

red tailed hawk

black vulture - perching foraging

mockingbird - perching

Appendix 2
Southeastern American Kestrel
Survey Data Sheets

SR 60 Grade Separation over CSX Railroad

FPID 436559-1-32-01

Bird List Compiled During Survey for Southeastern American Kestrel (June - July 2015)

	Common Name	Scientific Name	Listing (if any)	Activity	Notes
1	American Crow	<i>Corvus brachyrhynchos</i>		flight, perching	
2	Bald Eagle	<i>Haliaeetus leucocephalus</i>	*	flight, perching	along south substation boundary, outside project
3	Blue Jay	<i>Cyanocitta cristata</i>		flight, perching	
4	Boat-tailed Grackle	<i>Quiscalus major</i>		flight, perching	
5	Cattle Egret	<i>Bubulcus ibis</i>		flight, foraging	
6	Common Nighthawk	<i>Chordeiles minor</i>		flight	
7	Florida Sandhill Crane	<i>Grus canadensis</i>	ST	flight, foraging	2 adults and juvenile along west bank of PCDC
8	Glossy Ibis	<i>Plegadis falcinellus</i>		flight	
9	Great Blue Heron	<i>Ardea herodias</i>		flight, foraging in PCDC	
10	Mallard	<i>Anas platyrhynchos</i>		perching	observed perched on a pole
11	Mourning Dove	<i>Zenaida macroura</i>		flight, perching	
12	Northern Cardinal	<i>Cardinalis cardinalis</i>		perching	
13	Northern Mockingbird	<i>Mimus polyglottos</i>		flight, perching	
14	Osprey	<i>Pandion haliaetus</i>	SSC*	flight, perching	perches on cell tower
15	Red-bellied Woodpecker	<i>Melanerpes carolinus</i>		flight, foraging	pole #27, two birds enter cavity
16	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>		perching	pole #18
17	Southeastern American Kestrel	<i>Falco sparverius paulus</i>	ST	flight, perching, foraging, nesting	nest pole is located off-r/w on substation
18	Vulture, Black	<i>Coragyps atratus</i>		flight, perching	
19	White-eyed verio	<i>Vireo griseus</i>		perching	within access area for SMF 1 parcel
20	White Ibis	<i>Eudocimus albus</i>	SSC	flight, foraging	in PCDC
21	Wood Stork	<i>Mycteria americana</i>	FT	flight, foraging	in PCDC

FT = Federal-Listed Threatened

ST=State Threatened

SSC=(State) Species of Special Concern

SSC*=(State) Species of Special Conern--Monroe County population only

* Protected by Federal and State laws, but not a Federal- or State-listed species

American Kestrel Data Sheet

Date: 6/9/15 Monitor: Niki Cribbs

Sunrise: 6:30 am Odometer Reading Begin: 72218 End: 72224

Project and FPID: SR60 over CSX RR FPID 436559-132-01

AM Monitoring (sunrise to 3-4 hours past)

Start						
Time	Temp	Weather	Wind Speed	Cloud Cover	Cloud Type	Precipitation
6:30 am	70°	Good	4 mph S	0	0	0
Finish						
Time	Temp	Weather	Wind Speed	Cloud Cover	Cloud Type	Precipitation
9:30 am	75°	Good	5 mph SSW	Sunny	Blue	0

Observations (include aerial with data sheets)—Direction of travel and beginning and ending points of transect; odometer reading at each sighting location; sex of bird, bird activity and behavior, single bird or possible pair; nest site information including type of structure (natural or man-made); physical state of the structure; and tree species and stage of decay for those nests located in a tree. Information to include on the aerial: vegetative characteristics of the entire area of interest; boundaries and locations of Type I and Type II kestrel habitat; locations of transect lines; locations of all kestrels sighted while conducting the surveys; locations of nest sites; boundaries of the kestrel use area, including sighting locations and nest sites.

Great Blue Heron- Flyover W→E, foraging in PDC
Cattle egret " N→S

Mourning dove, perching on wires

Mocking birds perching

Boat tailed grackle- flyover, perching in trees

N. Cardinal- perching in trees

Red bellied woodpecker- in flight

72218 Kestrels in sub station vicinity, perching on poles
foraging on " " property

72219 ♂+♀ perching, foraging on International Paper Co
property (abandoned but landscaping is maintained, mowed)

Type I Habitat: Upland plant communities with less than 10% canopy closure and with at least 60% herbaceous ground cover of less than 25 cm in height.

Type II Habitat: Open woodland communities with greater than 10% but less than 25% canopy closure and with at least 60% herbaceous ground cover less than 25 cm in height.

American Kestrel Data Sheet

Date: 6/16/15 Monitor: Niki Cribbs
 Sunrise: 6:30 am Odometer Reading Begin: 72571 End: 72577
 Project and FPID: SR 60 over CSX RR FPID 436559-1-32-01

AM Monitoring (sunrise to 3-4 hours past)

Start						
Time	Temp	Weather	Wind Speed	Cloud Cover	Cloud Type	Precipitation
6:30 am	75° F	Good	Simple ESE	Clear	—	—
Finish						
Time	Temp	Weather	Wind Speed	Cloud Cover	Cloud Type	Precipitation
9:30 am	79° F	Good	calm	Clear	—	—

Observations (include aerial with data sheets)—Direction of travel and beginning and ending points of transect; odometer reading at each sighting location; sex of bird, bird activity and behavior, single bird or possible pair; nest site information including type of structure (natural or man-made); physical state of the structure; and tree species and stage of decay for those nests located in a tree. Information to include on the aerial: vegetative characteristics of the entire area of interest; boundaries and locations of Type I and Type II kestrel habitat; locations of transect lines; locations of all kestrels sighted while conducting the surveys; locations of nest sites; boundaries of the kestrel use area, including sighting locations and nest sites.

Gr Blue Heron—circling over Peace Creek drainage canal

① Kestrel perched on wooden util. pole #15 odometer 72572

(pair) — flies N. to perch on power lines. Back to utility pole
 — single bird, male

② Kestrel ~~perched~~ ^{2nd male} also present. Male brings food from nearby — male jr + male adult
 perched on wire odometer 72573
 — near pole #30, also w/ cavities
 — single bird, male

— flew to rooftop of Int'l Paper Co out of sight
 — returned from rooftop to top of pole
 mourning doves—perching on wires

Black vultures—perching on power poles
 cattle egret flyover S→N

Sandhill cranes 2 ad, 1 jr
 in lawn of Int'l Paper Co.

Mocking birds perching in trees

Red-bellied w.p. on pole #27, cavity. obs 2nd RBWP enter cavity

Type I Habitat: Upland plant communities with less than 10% canopy closure and with at least 60% herbaceous ground cover of less than 25 cm in height. → + #28 also w/ cavity

Type II Habitat: Open woodland communities with greater than 10% but less than 25% canopy closure and with at least 60% herbaceous ground cover less than 25 cm in height.

American Crows perching on poles

American Kestrel Data Sheet

Date: 6/23/15 Monitor: Niki Cribbs

Sunrise: 6:33 am Odometer Reading Begin: 73268 End: 73274

Project and FPID: SR 60 over CSX RR FPLD 436559-1-32-01

AM Monitoring (sunrise to 3-4 hours past)

Start						
Time	Temp	Weather	Wind Speed	Cloud Cover	Cloud Type	Precipitation
6:33am	73°F	Good	4 mph NNE	Scattered high Cirrus	Cirrus	none
Finish						
Time	Temp	Weather	Wind Speed	Cloud Cover	Cloud Type	Precipitation
10:20	82°F	Good	7 mph S	Partly Sunny	Cumulus	none

Observations (include aerial with data sheets)—Direction of travel and beginning and ending points of transect; odometer reading at each sighting location; sex of bird, bird activity and behavior, single bird or possible pair; nest site information including type of structure (natural or man-made); physical state of the structure; and tree species and stage of decay for those nests located in a tree. Information to include on the aerial: vegetative characteristics of the entire area of interest; boundaries and locations of Type I and Type II kestrel habitat; locations of transect lines; locations of all kestrels sighted while conducting the surveys; locations of nest sites; boundaries of the kestrel use area, including sighting locations and nest sites.

Black vultures roosting in cell tower

Cardinal perching on wires
 mourning doves " " "
 Crows " " "

woodpeckers in flight N → S → N between wooded areas

RB woodpecker @ pole #26 w/cavity + Boat tailed grackle
 → flies into cavity repeatedly w/food

male Kestrel perched on wire (odometer = 73270)

@ pole #15 Kestrel
 (odometer = 73273) - perching on OH trans. poles

2 or 1 ♀
 3 kestrels obs.
 perching on light pole in
 C+T pks lot
 4th in C+T lot
 Sex unk

female Kestrel @ Int'l Paper Co (odometer = 73272) Perched on wire, light pole

flew SW to rooftop

2nd male Kestrel perching on pole tops, came in from south
 pair perching together - flies to SW out of sight

@ Substation - other kestrels further south by pasture

Type I Habitat: Upland plant communities with less than 10% canopy closure and with at least 60% herbaceous ground cover of less than 25 cm in height.

Type II Habitat: Open woodland communities with greater than 10% but less than 25% canopy closure and with at least 60% herbaceous ground cover less than 25 cm in height.

American Kestrel Data Sheet

Date: 6/30/15 Monitor: Nike Creibbs
 Sunrise: 6:36am Odometer Reading Begin: 73790 End: 73798
 Project and FPID: SR 60

AM Monitoring (sunrise to 3-4 hours past)

Start						
Time	Temp	Weather	Wind Speed	Cloud Cover	Cloud Type	Precipitation
6:36am	71°F	Good	21mph NW	Cumulus	mostly clear	☐
Finish						
Time	Temp	Weather	Wind Speed	Cloud Cover	Cloud Type	Precipitation
10:30am	84°F	Good	calm	mostly sunny	Cumulus	☐

Observations (include aerial with data sheets)—Direction of travel and beginning and ending points of transect; odometer reading at each sighting location; sex of bird, bird activity and behavior, single bird or possible pair; nest site information including type of structure (natural or man-made); physical state of the structure; and tree species and stage of decay for those nests located in a tree. Information to include on the aerial: vegetative characteristics of the entire area of interest; boundaries and locations of Type I and Type II kestrel habitat; locations of transect lines; locations of all kestrels sighted while conducting the surveys; locations of nest sites; boundaries of the kestrel use area, including sighting locations and nest sites.

"presumed nesting cavity pole" being replaced w/ metal pole looked in wood pole is cut (topped) + piece w/ cavity is on the ground → ^{could not see anything}
 • @ pole #17 - ♂ + ♀ on wires (odometer = 73790) @ C+J pkg lot / entrance
 red-headed w.p. on pole w/ cavities
 • odometer = 73794 ♀ on wires between SMF + Petersen
 73794 ♂ + ♀ on wires @ C+J
 ↳ fly to North of SR 60 to A.H. wires
 Between poles #29+30 ♀ on wire foraging in area to south (odometer = 73793)
 (Int'l Paper vicinity)
 also perching on pole #32 overlooking grove to south - same ♀

Red bellied w.p. using cavity on pole #28 adult obs. bring food to 2nd adult in cavity
 odometer 73796 - Kestrel on wire w. of PCDC, flew south into pasture

Other spp: ^{flock} Glossy Ibis, ^{in pair} flyover NS, GBH, Boat-tailed grackles, Northern cardinal, mocking bird, Black Vultures, Cattle egrets, osprey, blue jay, mallard duck

Type I Habitat: Upland plant communities with less than 10% canopy closure and with at least 60% herbaceous ground cover of less than 25 cm in height.

Type II Habitat: Open woodland communities with greater than 10% but less than 25% canopy closure and with at least 60% herbaceous ground cover less than 25 cm in height.

American Kestrel Data Sheet

Date: 7/7/15 Monitor: Niki Chibbs
 Sunrise: 6:35 am Odometer Reading Begin: 74354 End: 74360
 Project and FPID: SR 60 over CSX FPID 436559-1-32-01

AM Monitoring (sunrise to 3-4 hours past)

Start						
Time	Temp	Weather	Wind Speed	Cloud Cover	Cloud Type	Precipitation
6:35am	70°F	Good	2 mph ESE	mostly clear	stratus	0
Finish						
Time	Temp	Weather	Wind Speed	Cloud Cover	Cloud Type	Precipitation
9:45am	79°F	Good	5 mph SSE	clear	0	0

Observations (include aerial with data sheets)—Direction of travel and beginning and ending points of transect; odometer reading at each sighting location; sex of bird, bird activity and behavior, single bird or possible pair; nest site information including type of structure (natural or man-made); physical state of the structure; and tree species and stage of decay for those nests located in a tree. Information to include on the aerial: vegetative characteristics of the entire area of interest; boundaries and locations of Type I and Type II kestrel habitat; locations of transect lines; locations of all kestrels sighted while conducting the surveys; locations of nest sites; boundaries of the kestrel use area, including sighting locations and nest sites.

Blue jays—in wooded areas, mocking birds, Northern cardinals ^{pr} fly over N→S, Sandhill cranes N→S
 Osprey in flight @ sub sta, perching on cell tower, perching in pine
 Mallards perching on wires again, same location @ PCDC
 Black vultures on OH Transmission lines/poles to North
 Common nighthawk in flight around RR Xing
 Pole #17—red headed wood pecker
 pole #28—red bellied pr in/out of cavity
 pr. of red bellied wood peckers on pole 18(?) wood pole just W of RRX
 @ Corner of C+J property
 odometer: 74355, ♀ Kestrel perched on wooden pole, N-side of SR 60 @ SW corner
 74356 of Petersen Industries, also perches on wires (Substation group)
 odometer: 74356 (Int'l Paper Co) ♀ perching on roof + adj to pole #28

immature eagle to South of project on OH Transmission pole, flew to E West out of
 68 am: 74356 (2) ♂ Kestrels on wires, South of Substation, foraging on Substation prop.

Type I Habitat: Upland plant communities with less than 10% canopy closure and with at least 60% herbaceous ground cover of less than 25 cm in height.
Type II Habitat: Open woodland communities with greater than 10% but less than 25% canopy closure and with at least 60% herbaceous ground cover less than 25 cm in height.

American Kestrel Data Sheet

Date: 7/14/15 Monitor: Niki Cribbs, Shannon Ladd

Sunrise: 6:39am Odometer Reading Begin: 114680 End: 114687

Project and FPID: SR 60 over CSX RR FPID 436559-1-32-01

AM Monitoring (sunrise to 3-4 hours past)

Start						
Time	Temp	Weather	Wind Speed	Cloud Cover	Cloud Type	Precipitation
6:39	77°F	good	5 mph SW	clear	cirrus	0
Finish						
Time	Temp	Weather	Wind Speed	Cloud Cover	Cloud Type	Precipitation
10:00	79°F	good	5 mph SW	Partly Sunny	Cumulus	0

Observations (include aerial with data sheets)—Direction of travel and beginning and ending points of transect; odometer reading at each sighting location; sex of bird, bird activity and behavior, single bird or possible pair; nest site information including type of structure (natural or man-made); physical state of the structure; and tree species and stage of decay for those nests located in a tree. Information to include on the aerial: vegetative characteristics of the entire area of interest; boundaries and locations of Type I and Type II kestrel habitat; locations of transect lines; locations of all kestrels sighted while conducting the surveys; locations of nest sites; boundaries of the kestrel use area, including sighting locations and nest sites.

odometer
114680 Kestrel perched in pine, Flies to north

Osprey perched on cell tower @ substation

114681 ♂ Kestrel perched on pole (former nest pole), 114683 ♂ on 3A pole - assume it is same bird

114681 ♀ perched on pole #21, flies to north

114681 ♀ perched on pole #27 @ Int'l Paper

2nd ♂ perched on chain link fence @ substa.

Red bellied w.p. @ pole #28 in/out of cavity + perching on adj. poles

114685 ♂ on N. side of SR60 in power line easement, perched on OH wire

114685 (unk sex) on OH trans. wire on N. side x from substation (3 kest. total @ substat today)

Blue jays, ibis, mallard on wire. mocking birds. Northern cardinal

4 Sandhill cranes foraging on roadside
2 adults 2 juv

Type I Habitat: Upland plant communities with less than 10% canopy closure and with at least 60% herbaceous ground cover of less than 25 cm in height.

Type II Habitat: Open woodland communities with greater than 10% but less than 25% canopy closure and with at least 60% herbaceous ground cover less than 25 cm in height.

Appendix 3
USFWS Standard Protection Methods for the
Eastern Indigo Snake

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE
U.S. Fish and Wildlife Service
August 12, 2013

The eastern indigo snake protection/education plan (Plan) below has been developed by the U.S. Fish and Wildlife Service (USFWS) in Florida for use by applicants and their construction personnel. At least **30 days prior** to any clearing/land alteration activities, the applicant shall notify the appropriate USFWS Field Office via e-mail that the Plan will be implemented as described below (North Florida Field Office: jaxregs@fws.gov; South Florida Field Office: verobeach@fws.gov; Panama City Field Office: panamacity@fws.gov). As long as the signatory of the e-mail certifies compliance with the below Plan (including use of the attached poster and brochure), no further written confirmation or “approval” from the USFWS is needed and the applicant may move forward with the project.

If the applicant decides to use an eastern indigo snake protection/education plan other than the approved Plan below, written confirmation or “approval” from the USFWS that the plan is adequate must be obtained. At least 30 days prior to any clearing/land alteration activities, the applicant shall submit their unique plan for review and approval. The USFWS will respond via e-mail, typically within 30 days of receiving the plan, either concurring that the plan is adequate or requesting additional information. A concurrence e-mail from the appropriate USFWS Field Office will fulfill approval requirements.

The Plan materials should consist of: 1) a combination of posters and pamphlets (see **Poster Information** section below); and 2) verbal educational instructions to construction personnel by supervisory or management personnel before any clearing/land alteration activities are initiated (see **Pre-Construction Activities** and **During Construction Activities** sections below).

POSTER INFORMATION

Posters with the following information shall be placed at strategic locations on the construction site and along any proposed access roads (a final poster for Plan compliance, to be printed on 11” x 17” or larger paper and laminated, is attached):

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat. These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.

SIMILAR SNAKES: The black racer is the only other solid black snake resembling the eastern indigo snake. However, black racers have a white or cream chin, thinner bodies, and WILL BITE if handled.

LIFE HISTORY: The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida. Although they have a preference for uplands, they also utilize some wetlands

and agricultural areas. Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps, roots, and debris piles. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

PROTECTION UNDER FEDERAL AND STATE LAW: The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. “Taking” of eastern indigo snakes is prohibited by the Endangered Species Act without a permit. “Take” is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of \$25,000 for civil violations and up to \$50,000 and/or imprisonment for criminal offenses, if convicted.

Only individuals currently authorized through an issued Incidental Take Statement in association with a USFWS Biological Opinion, or by a Section 10(a)(1)(A) permit issued by the USFWS, to handle an eastern indigo snake are allowed to do so.

IF YOU SEE A LIVE EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and allow the live eastern indigo snake sufficient time to move away from the site without interference;
- Personnel must NOT attempt to touch or handle snake due to protected status.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Immediately notify supervisor or the applicant’s designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

IF YOU SEE A DEAD EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and immediately notify supervisor or the applicant’s designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

Telephone numbers of USFWS Florida Field Offices to be contacted if a live or dead eastern indigo snake is encountered:

North Florida Field Office – (904) 731-3336

Panama City Field Office – (850) 769-0552

South Florida Field Office – (772) 562-3909

PRE-CONSTRUCTION ACTIVITIES

1. The applicant or designated agent will post educational posters in the construction office and throughout the construction site, including any access roads. The posters must be clearly visible to all construction staff. A sample poster is attached.
2. Prior to the onset of construction activities, the applicant/designated agent will conduct a meeting with all construction staff (annually for multi-year projects) to discuss identification of the snake, its protected status, what to do if a snake is observed within the project area, and applicable penalties that may be imposed if state and/or federal regulations are violated. An educational brochure including color photographs of the snake will be given to each staff member in attendance and additional copies will be provided to the construction superintendent to make available in the onsite construction office (a final brochure for Plan compliance, to be printed double-sided on 8.5" x 11" paper and then properly folded, is attached). Photos of eastern indigo snakes may be accessed on USFWS and/or FWC websites.
3. Construction staff will be informed that in the event that an eastern indigo snake (live or dead) is observed on the project site during construction activities, all such activities are to cease until the established procedures are implemented according to the Plan, which includes notification of the appropriate USFWS Field Office. The contact information for the USFWS is provided on the referenced posters and brochures.

DURING CONSTRUCTION ACTIVITIES

1. During initial site clearing activities, an onsite observer may be utilized to determine whether habitat conditions suggest a reasonable probability of an eastern indigo snake sighting (example: discovery of snake sheds, tracks, lots of refugia and cavities present in the area of clearing activities, and presence of gopher tortoises and burrows).
2. If an eastern indigo snake is discovered during gopher tortoise relocation activities (i.e. burrow excavation), the USFWS shall be contacted within one business day to obtain further guidance which may result in further project consultation.
3. Periodically during construction activities, the applicant's designated agent should visit the project area to observe the condition of the posters and Plan materials, and replace them as needed. Construction personnel should be reminded of the instructions (above) as to what is expected if any eastern indigo snakes are seen.

POST CONSTRUCTION ACTIVITIES

Whether or not eastern indigo snakes are observed during construction activities, a monitoring report should be submitted to the appropriate USFWS Field Office within 60 days of project completion. The report can be sent electronically to the appropriate USFWS e-mail address listed on page one of this Plan.