

Natural Resource Evaluation (NRE) Report

Simpson Road PD&E Study



Appendix A

ADVANCED NOTIFICATION AND AGENCY
CORRESPONDENCE



Transportation & Transit Department



January 22, 2019

Mr. Chris Stahl, Environmental Manager
Florida State Clearinghouse
Department of Environmental Protection
3900 Commonwealth Boulevard
Mail Station 47
Tallahassee, Florida 32399-3000

Tawny Olore, PE
Executive Director

SUBJECT: Advance Notification
Project Development and Environment (PD&E) Services
Simpson Road Widening Project from US 192 to 560' South of Myers Road
ETDM Number: N/A
Federal Aid Project Number: N/A
Financial Management Number: N/A
Osceola County, Florida

Josh DeVries, AICP
Transportation Planning

Kathy Lee, PE
Traffic Operations

Dear Mr. Chris Stahl:

This Advance Notification (AN) package is being sent to your office for distribution to State agencies that conduct federal consistency reviews (consistency reviewers) in accordance with the Coastal Zone Management Act and Presidential Executive Order 12372. Although we will request specific comments during the permitting process, we are asking that consistency reviewers examine the attached information and provide us with their comments.

Todd Hudson, PE
Transportation Engineering

Rene LaPorte
Construction

Consistency reviewers have 45 days from this AN to provide their comments. Once you have received their comments, please submit a consistency determination for the State of Florida within 60 days of this AN. If you need more review time, send a written request for an extension to our office within the initial 60 day comment period.

Gary Yeager
Traffic Services

Though this is a non-federal action, the County is conducting the study to remain eligible for future funding. As such, the County will determine the type of environmental documentation necessary and coordinate with Florida Department of Transportation (FDOT) should federal funds be identified. The determination will be based upon in-house environmental evaluations and comments received through coordination with other agencies. Please provide a consistency review for this project in accordance with the State's Coastal Zone Management Program.

In addition, please review this project's consistency, to the maximum extent feasible, with the requirements of Chapter 163 of the Florida Statutes.

Osceola County

1 Courthouse Square • Kissimmee, Florida 34741

Your comments should be submitted via mail or email to the Project contact:

Josh DeVries
Director of Planning / Senior Planner
Department of Transportation and Transit
Osceola County Government
1 Courthouse Square, Suite 3100
Kissimmee, FL 34741
Joshua.DeVries@Osceola.org

Sincerely,

A handwritten signature in blue ink that reads "Josh DeVries". The signature is written in a cursive style with a large initial "J" and a long, sweeping underline.

Josh DeVries, AICP
Director of Planning / Senior Planner
Osceola County Government

Attachments

ADVANCE NOTIFICATION PACKAGE

Overview

Project Name: Simpson Road Widening

Project Limits: From US 192 to 560' South of Myers Road

District: FDOT District 5

County: Osceola County

Metropolitan Planning Organization: MetroPlan Orlando

Plan ID: 92043 & 92075

Financial Management No: N/A

Federal Involvement: N/A

Agency Responsible for NEPA Document: Osceola County

Contact Information: Joshua DeVries, AICP
Director of Planning / Senior Planner
Department of Transportation and Transit
Osceola County Government
1 Courthouse Square, Suite 3100
Kissimmee, FL 34741
Phone: 407.742.7813
E-mail: Joshua.DeVries@Osceola.org

Howard Newman, PE – Consultant Project Manager
HDR, Inc.
315 East Robinson Street, Suite 400
Orlando, FL 32801
Phone: 407-420-4167
E-mail: howard.newman@hdrinc.com

TRANSMITTAL LIST

Name	Agency
Chris Stahl, Florida State Clearinghouse	Florida Department of Environmental Protection
Bart Vernace	Federal Aviation Administration
Richelle Gosman	Federal Transit Administration
Stan Mitchell	Federal Transit Administration
Andrew Kizlauskas	US Army Corps of Engineers
Lisa Lovvorn	US Army Corps of Engineers
Randy Turner	US Army Corps of Engineers
Randall Overton	US Coast Guard
Kim Gates	US Environmental Protection Agency
Ntale Kajumba	US Environmental Protection Agency
Alya Singh-White	US Environmental Protection Agency
Amanetta Somerville	US Environmental Protection Agency
Roshanna White	US Environmental Protection Agency
Zakia Williams	US Fish and Wildlife Service
John Mckechnie	US Forest Service
Steven Schnetzler	US Forest Service
Jennifer Schull	National Marine Fisheries Service
Leroy Crockett	National Resources Conservation Service
Gary Huttman	MetroPlan Orlando
Keith Caskey	MetroPlan Orlando
Nick Lepp	MetroPlan Orlando
Don Fisher	Osceola County
Danielle Slaterpryce	Osceola County
Beth Knight	Osceola County
Joshua DeVries	Osceola County
Sheriff Russ Gibson	Osceola County
Tawney Olore	Osceola County
Daniel McAvoy	Osceola County
Bob Mindick	Osceola County
Annette Burkett	SFWMD
Mindy Parrott	SFWMD
Kerrith Fiddler	City of Kissimmee
Elizabeth Harris	City of Kissimmee
Chief Jeff O'Dell	City of Kissimmee
Mike Steigerwald	City of Kissimmee
Jim Walls	City of Kissimmee
Andre A. Anderson	City of St. Cloud
Veronica Miller	City of St. Cloud
Chief Pete Gauntlett	City of St. Cloud
Stephanie Holtkamp	City of St. Cloud

Name	Agency
Joseph Silvestris	City of St. Cloud
Douglas Tillery	City of St. Cloud
Mr. Billy Cyprus	Miccosukee Tribe of Indians of Florida
Mr. Fred Dayhoff	Miccosukee Tribe of Indians of Florida
Mr. James Floyd	Muscogee (Creek) Nation
Historic and Cultural Preservation Department	Muscogee (Creek) Nation
Stephanie A. Bryan	Poarch Band of Creek Indians
Carolyn M. White	Poarch Band of Creek Indians
Mr. Marcellus W. Osceola	Seminole Tribe of Florida
Paul N. Backhouse, Ph.D.	Seminole Tribe of Florida
Mr. Bradley Mueller	Seminole Tribe of Florida
Victoria Menchaca	Seminole Tribe of Florida
Mr. Gregory Chilcoat	Seminole Nation of Oklahoma
Mr. Theodore Isham	Seminole Nation of Oklahoma
Jason Watts	FDOT Native American Coordinator



Celebrating Small Town Life

PLANNING
&
ZONING

February 5, 2019

Joshua DeVries, Director of Planning
Transportation Planning
1 Courthouse Square
Kissimmee, FL 34741

**RE: Advance Notification
Simpson Road Widening Project
(US 192 to 560' south of Myers Rd)**

Dear Mr. DeVries:

Please be advised that we have reviewed your letter dated January 22, 2019, regarding the above mentioned road widening project. As this project is outside of our Joint Planning Area, we have no comments at this time. However, due to the interconnective nature of transportation planning, we recognize that changes that occur even outside of our jurisdictional boundaries can affect us. Therefore, we appreciate this advance notification and look forward to collaborating with you in the future.

Sincerely,

André A. Anderson, AICP
Planning & Zoning Director



February 7, 2019

Florida Fish and Wildlife Conservation Commission

Chris Stahl, Coordinator
Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Blvd., M.S. 47
Tallahassee, FL 32399-3000
Chris.Stahl@dep.state.fl.us

Re: SAI# FL201901238519C, Simpson Road Widening, Osceola County.
Advance Notification

Commissioners
Robert A. Spottswood
Chairman
Key West

Michael W. Sole
Vice Chairman
Tequesta

Joshua Kellam
Palm Beach Gardens

Gary Lester
Oxford

Gary Nicklaus
Jupiter

Sonya Rood
St. Augustine

Dear Mr. Stahl:

Florida Fish and Wildlife Conservation Commission (FWC) staff has reviewed the Advance Notification for the proposed Simpson Road widening in Osceola County, and provides the following comments and recommendations for your consideration in accordance with Chapter 379, Florida Statutes, and pursuant to the federal National Environmental Policy Act, the federal Coastal Zone Management Act, and the State of Florida Coastal Management Program.

Osceola County proposes to enhance mobility on Simpson Road between US 92 and Myers Road by widening the existing two-lane segments to four lanes with bike lanes and 5-foot-wide sidewalks on both sides. The length of the project is approximately 4.1 miles.

Osceola County may apply for federal funding of this project, and they propose to prepare a Project Development and Environment Study (PD&E) which will include a Natural Resource Evaluation with a Protected Species and Habitat Evaluation in accordance with the Florida Department of Transportation PD&E Manual. The FWC will participate as a reviewing agency in these pre-construction planning and design activities, and we look forward to providing technical assistance throughout this process to minimize the project impacts on fish and wildlife resources. We find that this project is consistent with FWC's authorities under the Florida Coastal Management Program/Coastal Zone Management Act.

If you need further assistance, please do not hesitate to contact our office by email at FWCConservationPlanningServices@MyFWC.com. If you have specific technical questions regarding the content of this letter, contact Brian Barnett at (772) 579-9746 or email brian.barnett@MyFWC.com.

Sincerely,

Jennifer D. Goff, Director
Office of Conservation Planning Services

jdg/bb
Simpson Road Widening_38049_020719

Office of the
Executive Director
Eric Sutton
Executive Director
Thomas H. Eason, Ph.D.
Assistant Executive Director
Jennifer Fitzwater
Chief of Staff

850-487-3796
850-921-5786 FAX

Managing fish and wildlife resources for their long-term well-being and the benefit of people.

620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: 850-488-4676

Hearing/speech-impaired:
800-955-8771 (T)
800 955-8770 (V)

MyFWC.com

Chris Stahl
Page 2
February 7, 2019

cc: Joshua DeVries, Joshua.DeVries@Osceola.org

From: Stahl, Chris [<mailto:Chris.Stahl@dep.state.fl.us>]
Sent: Thursday, March 14, 2019 8:18 AM
To: Newman, Howard
Cc: State_Clearinghouse
Subject: State_Clearance_Letter_For_FL201901238519C_Project Development and Environment (PD&E) Services Simpson Road Widening Project from US 192 to 560' South of Myers Road, Osceola County

March 14, 2019

Howard H. Newman
HDR Inc.
315 E. Robinson Street, Suite 400
Orlando, Florida 32801

RE: Department of Transportation - Advance Notification - Project Development and Environment (PD&E) Services Simpson Road Widening Project from US 192 to 560' South of Myers Road, Osceola County, Florida.
SAI # FL201901238519C

Dear Howard:

Florida State Clearinghouse staff has reviewed the proposal under the following authorities: Presidential Executive Order 12372; § 403.061(42), Florida Statutes; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

The Florida Fish and Wildlife Conservation Commission has reviewed the proposed project and provided a comment letter which is attached and incorporated hereto.

The proposed project will require an Environmental Resource Permit from the South Florida Water Management District (SFWMD) in accordance with Rule 62-330.054, Florida Administrative Code (FAC). Please contact the either Mark Daron or Marc Ady of the SFWMD Orlando Service Center at (407) 858-6100 or email erpreapp@sfwmd.gov to schedule a pre-application meeting with staff. 2. The project may qualify for a consumptive water use permit from the South Florida Water Management District for construction dewatering, landscape irrigation, potable and/or wastewater facilities, in accordance with Chapter 40E-2, FAC. Please contact Alberto Naya in the District's Water Use Bureau at 561-682-2513 or anaya@sfwmd.gov to schedule a pre-application meeting.

If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The applicant shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section at (850)-245-6333. Project activities shall not resume without verbal and/or written authorization. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities

notified in accordance with Section 872.05, Florida Statutes. If you have any questions, please contact Alyssa Costas, Historic Sites Specialist, by email at Alyssa.Costas@dos.myflorida.com, or by telephone at 850.245.6333 or 800.847.7278.

Based on the information submitted and minimal project impacts, the state has no objections to allocation of federal funds for the subject project and, therefore, the funding award is consistent with the Florida Coastal Management Program (FCMP). The state's final concurrence of the project's consistency with the FCMP will be determined during any environmental permitting processes, in accordance with Section 373.428, Florida Statutes, if applicable.

Thank you for the opportunity to review the proposed plan. If you have any questions or need further assistance, please don't hesitate to contact me.

Sincerely,

Chris Stahl

Chris Stahl, Coordinator
Florida State Clearinghouse
Florida Department of Environmental Protection
3800 Commonwealth Blvd., M.S. 47
Tallahassee, FL 32399-2400
ph. (850) 717-9076
State.Clearinghouse@floridadep.gov

From: [Swanson, Sherri](#)
To: [Swanson, Sherri](#)
Subject: RE: [EXTERNAL] Caracara Question
Date: Monday, April 29, 2019 9:15:42 AM
Attachments: [image002.png](#)

From: Schubert, Steve [mailto:steve_schubert@fws.gov]
Sent: Wednesday, November 21, 2018 10:48 AM
To: Swanson, Sherri <Sherri.Swanson@hdrinc.com>
Subject: Re: [EXTERNAL] Caracara Question

Hi Sherri,

So, caracaras may occasionally nest in pine trees or other non-cabbage palms. This general pasture area (from the road to the lake) is just big enough to support one nesting caracara pair, but it is surrounded by very little caracara habitat. So it may only support non-breeding caracaras.

My opinion, just to be safe, is to check the cabbage palms once per month starting in early January - until April - just to confirm no nesting is occurring. The "nest check" could take as little as 15 minutes per tree if you can see into or through the crown of the tree. For trees that you cannot see into, you could approach the tree and listen for caracara rattling, or potentially flushing an adult out of the tree. I attached a map of the palms I thought existed on the site just by looking at the aerial. I think the tall one that you identified was the same as the one in my figure (at about 18 feet tall), but you would need to confirm. I agree that it is unlikely that caracara would nest in a 7 ft palm, but you never know. As the population gets squeezed by development, they have been nesting more and more in atypical areas.

Let me know if you have further questions or need additional guidance.
Steve



On Tue, Nov 20, 2018 at 11:50 AM Swanson, Sherri <Sherri.Swanson@hdrinc.com> wrote:

Steve,

We walked all of the ponds sites in search of wildlife habitat, with a focus on the crested caracara.

We found one (1) palm of sufficient height for nesting on the large pasture parcel. All other trees on site were smaller palms (approx. 7 like attached photo 5242), live oaks, Chinese tallow trees, or cypress.

Based on our review, we do not believe caracara will use this site for nesting. We did not walk offsite toward the lake area, as the ponds would be closer to the road.

I wanted to revisit your recommendation to survey palms each month (Jan-April) in 2019.

Do you believe we need to check the one large palm (photo 5280).

Thank you!

Sherri

[Sherri R. Swanson](#), PWS, ENV SP

Professional Associate | Environmental Project Manager

HDR

[D \[941.342.2707\]](tel:941.342.2707) [M \[941.685.9592\]](tel:941.685.9592)

hdrinc.com/follow-us

From: Schubert, Steve [mailto:steve_schubert@fws.gov]

Sent: Wednesday, November 14, 2018 2:54 PM

To: Swanson, Sherri <Sherri.Swanson@hdrinc.com>

Cc: Marla Hamilton <marla_hamilton@fws.gov>

Subject: Re: [EXTERNAL] Caracara Question

Hi Sherri,

I looked at our data sources for caracaras and only found 2 observations of birds (no nests) in recent years (from e-Bird); see attached. So I would expect caracaras to use the pasture area (either for one nesting pair or non-breeding adults or juveniles). Also, FWC just informed me that they will not be doing caracara surveys as part of the East lake Toho (ELT) drawdown this winter/spring on the east side of the pasture.

At this time, the best course of action would be to conduct monthly checks (Jan-April) for caracara nests in and around (within 300 meters of the external perimeter boundary) your potential stormwater feature of any cabbage palms. Since the site is only about 90 acres and there are only a few palms (I counted only 4 in the aerial) , it would not take much effort to view each palm (once a month) to determine if there are any nesting caracaras in the palms. This should still provide us with the information that we need (i.e., is there a caracara nest near the project area?), and will reduce the effort from bi-monthly surveying to only once a month. If there are other areas that you are concerned about (either the remainder of the road/roadside or potential staging areas), we can discuss a protocol for those as well.

Let me know if you have any questions,

thanks

Steve

On Wed, Nov 14, 2018 at 10:15 AM, Swanson, Sherri <Sherri.Swanson@hdrinc.com> wrote:

Hi Steve,

I am sure you are busy, but wondering if you have five minutes to field a couple caracara questions related to a pond site "alternative" along Simpson Road. The parcel is a pasture with oak trees.

Or, could you recommend someone for me to speak with if not you?

Thank you,

Sherri

[Sherri R. Swanson](#), PWS, ENV SP
Professional Associate | Environmental Project Manager

HDR
[2601 Cattlemen Road, Suite 400](#)
Sarasota, FL 34232
D [941.342.2707] M [941.685.9592]
[\[sherri.swanson@hdrinc.com\]](mailto:sherri.swanson@hdrinc.com)

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Natural Resource Evaluation (NRE) Report

Simpson Road PD&E Study



Appendix B

CRESTED CARACARA NESTING SEASON
SURVEY TECHNICAL MEMORANDUM





PD&E SERVICES

Simpson Road Improvements

from US 192 to 560 south of Myers Road

Osceola County, Florida

Contract No. PS-18-9906-DG



Crested Caracara Nesting Season Survey

Technical Memo

Osceola County

Department of Transportation and Transit



June 2019



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Crested Caracara Nesting Season Survey

Technical Memo



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Crested Caracara Nesting Season Survey

Technical Memo



1.0 Introduction

Osceola County is conducting a Project Development and Environment (PD&E) study for a 4.1-mile section of Simpson Road near Kissimmee in northwest Osceola County, Florida. The proposed improvements will increase capacity through the corridor, enhance operations, and improve bicycle and pedestrian safety. The improvements include the widening of Simpson Road from US192 to south of Myers Road, which will require stormwater management facilities to treat run-off from seven drainage sub-basins and a floodplain compensation site. The project location is shown on **Figure 1**.

2.0 Report Purpose

The crested caracara is federally threatened under the Endangered Species Act (ESA). The Simpson Road improvements fall within the USFWS Crested Caracara Consultation Area and solitary crested caracara have been observed approximately one mile east of the project mainline along East Lake Tohopekaliga (**Figure 2**). The crested caracara could utilize undeveloped woodland pasture within the project study area; however, nesting would be unlikely in proximity to Simpson Road where the construction would occur.

In order to address the possible of presence (e.g. foraging and/or nesting) and ensure protections for the crested caracara, communication was initiated with the USFWS and an informal survey conducted to confirm the presence or absence of nesting crested caracara within the woodland pasture north of Hilliard Isle Road. This report documents the USFWS approved methodology and summarizes the results of the field surveys.

3.0 Land Use and Land Cover

Land use and land cover along Simpson Road was evaluated using the South Florida Water Management District (SFWMD) Land Cover Land Use GIS data (2014-2016) and site-specific data collected during field investigations. All mapping was in accordance with the Florida Land Use, Cover and Forms Classification System (FLUCFCS) (FDOT 1999/2000). The land use and land cover with a 500-foot buffer of the project corridor is shown on **Figure 3**.

The project area was an active transportation corridor (FLUCFCS, 8100) bisecting a predominantly urban area, including high density residential (FLUCFCS, 1300), low density residential (FLUCFCS, 1100), commercial services (FLUCFCS, 1400), institutional facilities (FLUCFCS, 1700), and utilities (FLUCFCS, 8300) with patches of disturbed open land (FLUCFCS, 7400), woodland pasture (FLUCFCS 2130), agricultural land (FLUCFCS 2110, 2210), forested wetland (FLUCFCS, 6210), and lakes (FLUCFCS 5100). Some recent agricultural lands were in active transition, cleared, and/or under development.

The most common undeveloped uplands included woodland pasture with live oak (*Quercus virginiana*) and slash pine (*Pinus elliottii*), bahiagrass (*Paspalum notatum*) fields, undeveloped lots with wooded vegetation, and abandoned lots with concrete slabs regenerating with ruderal species.

Wetlands, surface waters, and drainage features were also present. Wetlands included a cypress dome and a non-forested marsh with nuisance and exotic shrubs and cattails (*Typha* spp.). Channelized drainage features were associated with Boggy Creek and East Lake Tohopekaliga and some supported mixed wetland hardwoods, cypress, and exotic trees. Several small, man-made ponds and lakes with and without dense littoral vegetation and shrubs were present. All other surface waters were associated with drainage ditches.



Crested Caracara Nesting Season Survey

Technical Memo



Figure 1 | Project Location Map



Crested Caracara Nesting Season Survey

Technical Memo

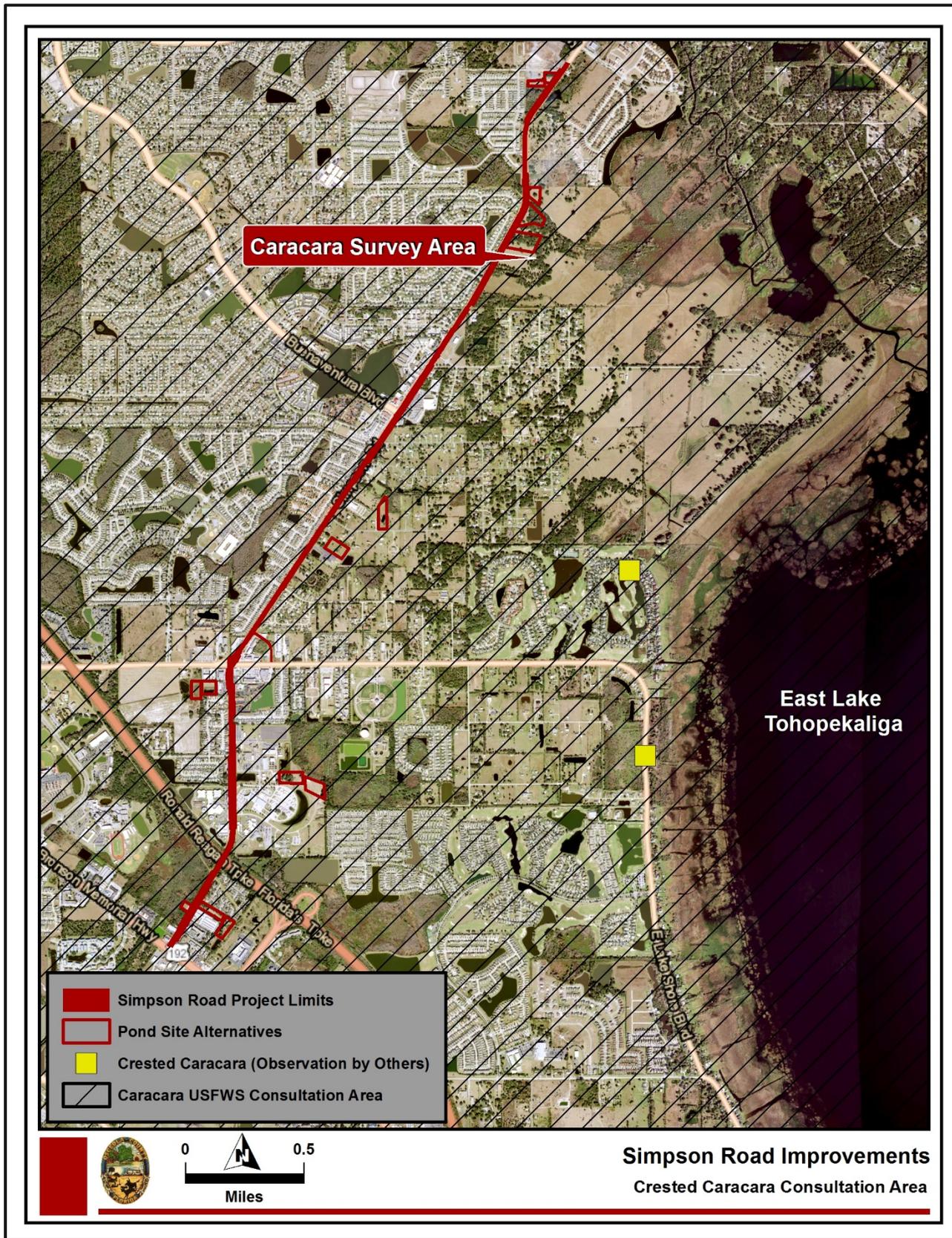


Figure 2 | Crested Caracara Consultation Area Map



Crested Caracara Nesting Season Survey

Technical Memo

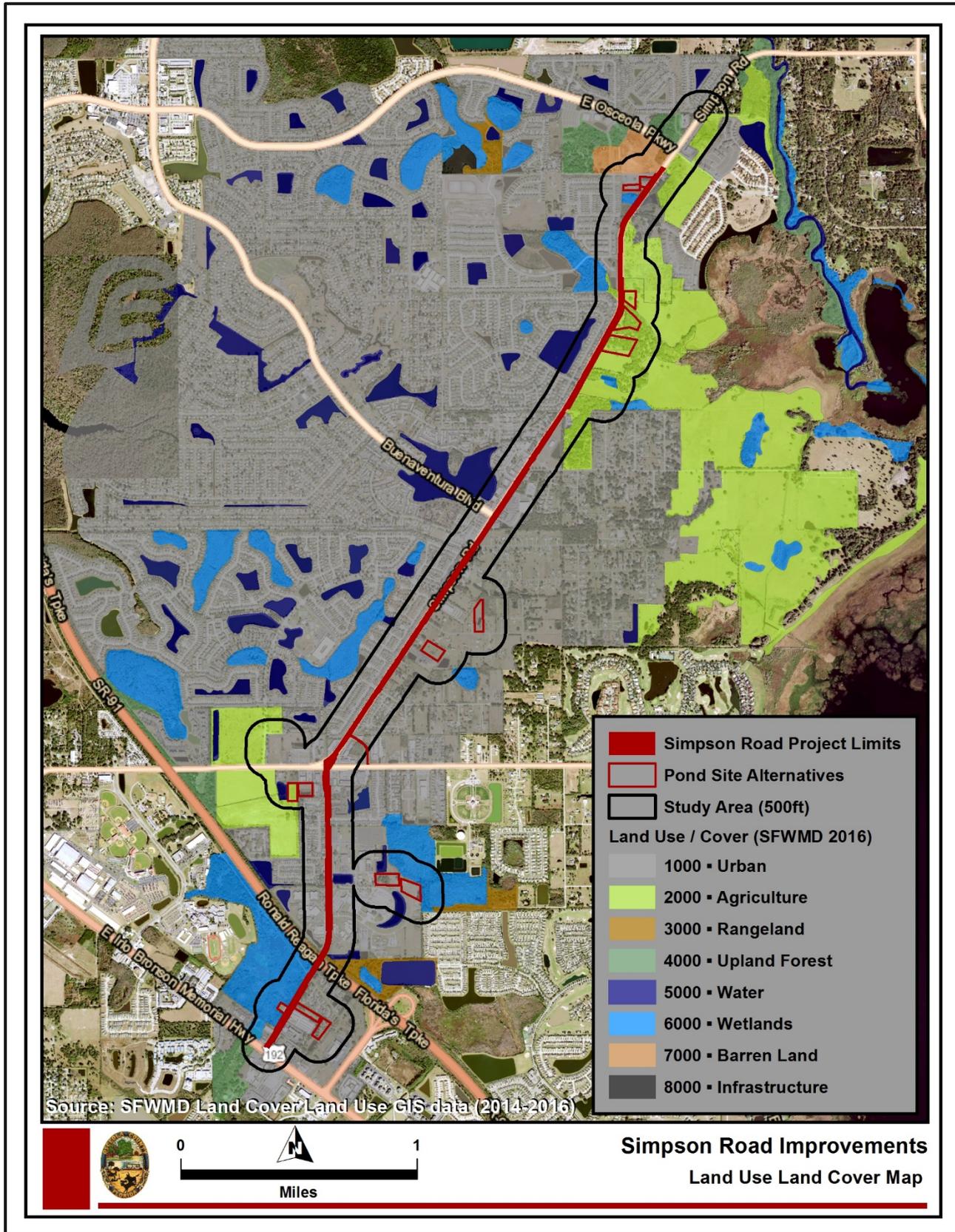


Figure 3 | Land Use Land Cover Map



Crested Caracara Nesting Season Survey

Technical Memo



4.0 Methodology

An informal crested caracara nest survey was conducted, per guidance received from Steve Schubert, USFWS during conversations in November 2018. Surveys were conducted monthly (four events) within the woodland pasture north of Hilliard Isle Road from January to April during the 2019 nesting season. Each survey lasted about two to three hours and concluded with the requested cabbage palm (*Sabal palmetto*) inspections (*i.e.* “nest check”) within 300 meters beyond the preferred pond site alternatives.

Through communication with the USFWS, it was determined that an informal survey focus within the woodland pasture in the vicinity where the road widening and pond site would be expected. Prior to the field surveys, aerial imagery (2014/2017) was used in a desktop analysis to identify potential cabbage palms within the project area and any palms located approximately 300 meters beyond the project boundaries. This preliminary review was also used to establish observation stations suitable to view wildlife activity around known cabbage palms, taking into account known caracara observations further to the east.

Caracara nest surveys began with a site reconnaissance on November 19, 2018 to identify any potential caracara foraging habitat and verify cabbage palm locations. Caracara surveys were conducted January 8th, February 12th, March 12th, and April 9th during the 2019 nesting season. Survey sessions were initiated close to sunrise and lasted about two to three hours. Each station was set up to allow an unobstructed view of potential caracara movement around the woodland pasture. Surveys were conducted from a vehicle using high-power binoculars.

Weather conditions and other field observations were recorded as shown in **Table 1**. A map depicting the survey area with the observation stations is provided as **Figure 4**.



Crested Caracara Nesting Season Survey

Technical Memo

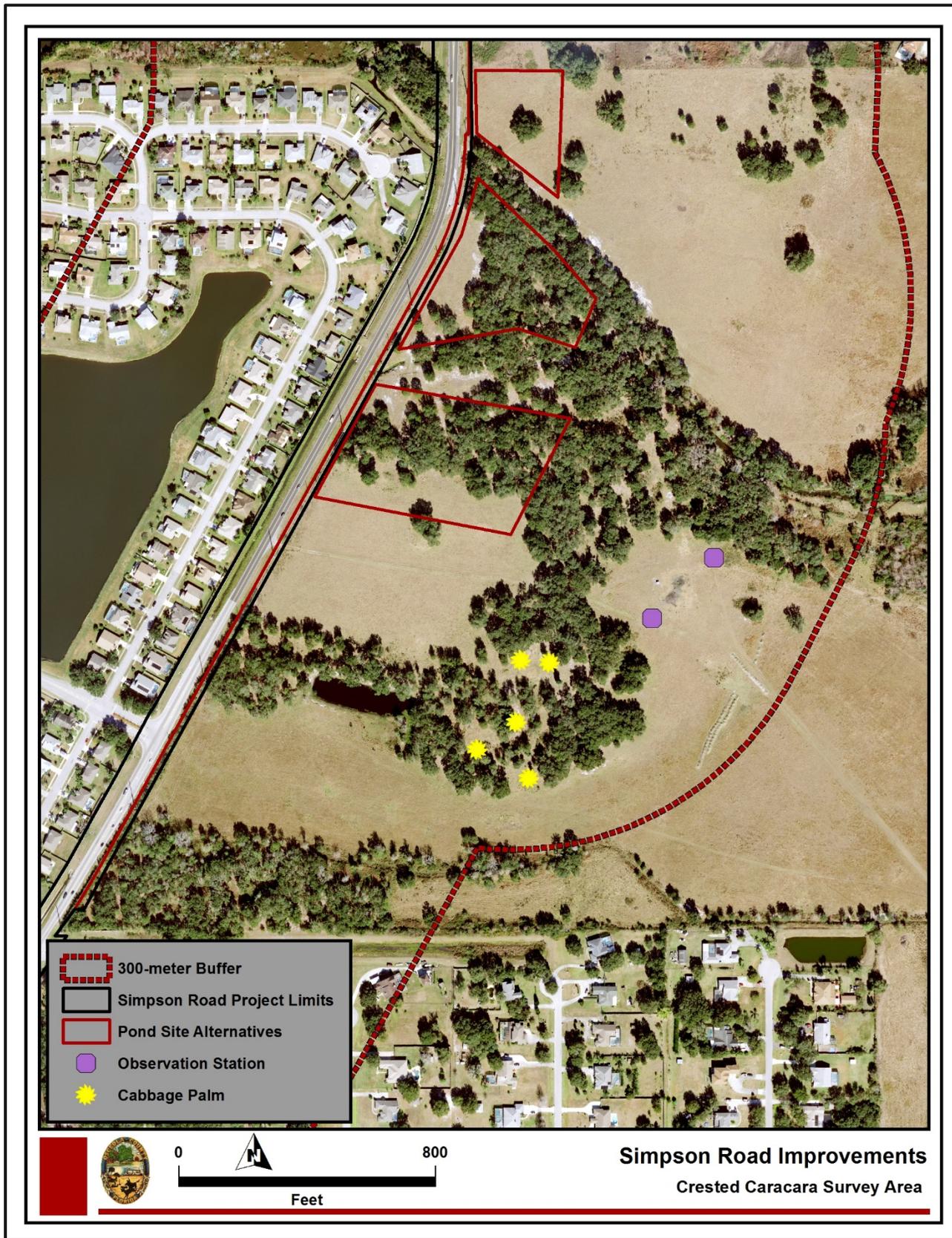


Figure 4 | Crested Caracara Survey Area



Crested Caracara Nesting Season Survey

Technical Memo



5.0 Result Summary

Crested caracara are known to utilize dry prairie habitats with scattered cabbage palms and sparsely forested cabbage palm/oak/pine hammocks and they typically nest in cabbage palms. Due to land use changes throughout Florida, the caracara has been increasingly found utilizing improved pastures, as well as woodland pastures, agricultural fields, and rangeland with low herbaceous vegetation. Caracara have been known to nest in proximity to development; however for this road improvement project, the rapidly increasing urban development within the project study area is an expected deterrent to their nesting.

The crested caracara could utilize the undeveloped woodland pasture east of Simpson Road and north of Hilliard Isle Road on an intermittent basis for foraging; however, nesting would be unlikely adjacent to Simpson Road due to heavy traffic, development, and lack of appropriate nesting habitat. The predominant vegetation with the woodland pasture was mature live oak and slash pine. The three channelized drainage features were associated with Boggy Creek and East Lake Tohopekaliga and supported wetland hardwoods, cypress, and exotic trees. Four immature cabbage palms 8-12 feet in height and one cabbage palm approximately 20 feet in height were inspected during each survey. No crested caracara activity nor any caracara nests were observed during the four survey events as shown in **Table 1**.

Additionally, mature cabbage palms were not observed within the proposed project impact area; therefore, no cabbage palms would be removed due to construction of the ponds within the woodland pasture. This woodland pasture will be revisited as part of the data collection efforts required for permitting. If caracara are observed, or evidence of caracara nesting noted, including the presence of solitary caracara or nesting pairs and/or nesting behavior, formal coordination with the USFWS will be initiated to determine the appropriate course of action.

Table 1 | Results of Crested Caracara 2019 Nesting Season Survey

Date	Sunrise	Survey Start	Survey End	Weather	Observations	Notes
January 8, 2019	7:19am	7:20am	10:00am	Sunny 70-75°F	No caracara. 25-30 sandhill crane. 10 killdeer. 1 Eastern meadowlark. 100+ cattle. 1 red-shouldered hawk. Pileated woodpeckers. 1 osprey. Blue jays. Ground doves.	Walked pasture following survey and visually inspected all cabbage palms
February 12, 2019	7:06am	7:30am	9:45am	100% overcast with low clouds 75°F	No caracara. 15 sandhill cranes. 2 killdeer. 50+ cattle. Pileated woodpeckers. 1 Sherman's fox squirrel	Walked pasture and viewed all cabbage palms and cypress
March 12, 2019	7:39am	7:50am	9:50am	Overcast with low clouds 78°F	No caracara. 1 sandhill crane. 50+ cattle. Pileated woodpeckers. 1 Sherman's fox squirrel	Walked pasture and viewed all cabbage palms
April 9, 2019	7:07am	6:50am	9:30am	Sunny +75°F	No caracara. No sandhill cranes. 75+ cattle. Pileated woodpeckers. Red-shouldered hawk. 1 Sherman's fox squirrel. Black vultures. White egret (overhead)	Walked pasture and viewed all cabbage palms

Representative photos of the woodland pasture (showing no cabbage palms), as well as photographs of the cabbage palms observed within the woodland pasture, are provided below.



Crested Caracara Nesting Season Survey

Technical Memo



Crested Caracara Nesting Season Survey

Technical Memo



Crested Caracara Nesting Season Survey

Technical Memo



Crested Caracara Nesting Season Survey

Technical Memo



Natural Resource Evaluation (NRE) Report

Simpson Road PD&E Study



Appendix C

WILDLIFE PROTECTION GUIDELINES



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.

Natural Resource Evaluation (NRE) Report

Simpson Road PD&E Study



Appendix D

EFFECT DETERMINATION KEYS





United States Department of the Interior



FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

August 1, 2017

Donnie Kinard
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Subject: Consultation Key for the Eastern Indigo Snake – Revised

Dear Mr. Kinard:

This letter revises and replaces the January 25, 2010, and August 13, 2013, letters to the U.S. Army Corps of Engineers (Corps) regarding the use of the eastern indigo snake programmatic effect determination key (Key) for projects occurring within the South Florida Ecological Service's Office (SFESO) jurisdiction. This revision supersedes all prior versions of the Key in the SFESO area. The purpose of this revision is to clarify portions of the previous keys based on questions we have been asked, specifically related to habitat and refugia used by eastern indigo snakes (*Drymarchon corais couperi*), in the southern portion of their range and within the jurisdiction of the SFESO. This Key is provided pursuant to the Service's authorities under the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C.1531 *et seq.*). This Key revision has been assigned Service Consultation Code: 41420-2009-I-0467-R001.

The purpose of this Key is to assist the Corps (or other Federal action agency) in making appropriate effects determinations for the eastern indigo snake under section 7 of the Act, and streamline informal consultation with the SFESO for the eastern indigo snake when the proposed action can be walked through the Key. The Key is a tool available to the Corps (or other Federal action agency) for the purposes of expediting section 7 consultations. There is no requirement to use the Key. There will be cases when the use of the Key is not appropriate. These include, but are not limited to: where project specific information is outside of the scope of the Key or instances where there is new biological information about the species. In these cases, we recommend the Corps (or other Federal action agency) initiates traditional consultation pursuant to section 7 of the Act, and identify that consultation is being requested outside of the Key.

This Key uses project size and home ranges of eastern indigo snakes as the basis for making determinations of "may affect, but is not likely to adversely affect" (NLAA) and "may affect, and is likely to adversely affect" (may affect). Suitable habitat for the eastern indigo snake consists of a mosaic of habitats types, most of which occur throughout South Florida. Information on home ranges for individuals is not available in specific habitats in South Florida. Therefore, the SFESO uses the information from a 26-year study conducted by Layne and Steiner (1996) at Archbold Biological Station, Lake Placid, Florida, as the best available

information. Layne and Steiner (1996) determined the average home range size for a female eastern indigo snake was 46 acres and 184 acres for a male.

Projects that would remove/destroy less than 25 acres of eastern indigo snake habitat are expected to result in the loss of a portion of an eastern indigo snakes home range that would not impair the ability of the individual to feed, breed, and shelter. Therefore, the Service finds that take would not be reasonably certain to occur due to habitat loss. However, these projects have the potential to injure or kill an eastern indigo snake if the individual is crushed by equipment during site preparation or other project aspects. The Service's *Standard Protection Measures for the Eastern Indigo Snake* (Service 2013 or most current version) and the excavation of underground refugia (where a snake could be buried, trapped and/or injured), when implemented, are designed to avoid these forms of take. Consequently, projects less than 25 acres that include the Service's *Standard Protection Measures for the Eastern Indigo Snake* (Service 2013 or most current version) and a commitment to excavate underground refugia as part of the proposed action would be expected to avoid take and thus, may affect, but are not likely to adversely affect the species.

If a proposed project would impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, the Key should not be used. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range.

Projects that would remove 25 acres or more of eastern indigo snake habitat could remove more than half of a female eastern indigo snakes home range. This loss of habitat within a home range would be expected to significantly impair the ability of that individual to feed, breed, and shelter. Therefore, the Service finds take through habitat loss would be reasonably certain to occur and formal consultation is appropriate. Furthermore, these projects have the potential to injure or kill an eastern indigo snake if the individual is crushed by equipment during site preparation or other project aspects. The Service's *Standard Protection Measures for the Eastern Indigo Snake* (Service 2013 or most current version) and the excavation of underground refugia (where a snake could be buried, trapped and/or injured), when implemented, are designed to avoid these forms of take.

Eastern indigo snakes use a variety of habitat and are difficult to detect. Therefore, site specific information on the land use, observations of eastern indigo snakes within the vicinity, as well as other factors, as appropriate, will all be considered by the Service when making a final recommendation on the appropriate effects determination and whether it is appropriate to conclude consultation with the Corps (or other Federal action agency) formally or informally for projects that will impact 25 acres or more of habitat. Accordingly, when the use of the Key results in a determination of "may affect," the Corps (or other Federal action agency) is advised that consultation may be concluded informally or formally, depending on the project specific effects to eastern indigo snakes. Technical assistance from the Service can assist you in making a determination prior to submitting a request for consultation. In circumstances where the Corps (or other Federal action agency) desires to proceed with a consultation request prior to receiving

additional technical assistance from the Service, we recommend the agency documents the biological rationale for their determination and proceed with a request accordingly.

If the use of the Key results in a determination of “no effect,” no further consultation is necessary with the SFESO. If the use of the Key results in a determination of “NLAA,” the SFESO concurs with this determination based on the rationale provide above, and no further consultation is necessary for the effects of the proposed action on the eastern indigo snake. For “no effect” or “NLAA” determinations, the Service recommends that the Corps (or other Federal action agency) documents the pathway used to reach your no effect or NLAA determination in the project record and proceed with other species analysis as warranted.

Eastern Indigo Snake Programmatic Effect Determination Key
Revised July 2017
South Florida Ecological Service Office

Scope of the Key

This Key should be used only in the review of permit applications for effects determinations for the eastern indigo snake (*Drymarchon corais couperi*) within the South Florida Ecological Service’s Office (SFESO) area (Broward, Charlotte, Collier, De Soto, Glades, Hardee, Hendry, Highlands, Lee, Indian River, Martin, Miami-Dade, Monroe, Okeechobee, Osceola, Palm Beach, Polk, Sarasota, and St. Lucie Counties). There is no designated critical habitat for the eastern indigo snake.

This Key is subject to revision as the Corps (or other Federal action agency) and Service deem necessary and in particular whenever there is new information on eastern indigo snake biology and effects of proposed projects.

The Key is a tool available to the Corps (or other Federal action agency) for the purposes of expediting section 7 consultations. There is no requirement to use the Key. There will be cases when the use of the Key is not appropriate. These include, but are not limited to: where project specific information is outside of the scope of the Key or instances where there is new biological information about the species. In these cases, we recommend the Corps (or other Federal action agency) initiates traditional consultation pursuant to section 7 of the Act, and identify that consultation is being requested outside of the Key.

Habitat

Habitat use varies seasonally between upland and wetland areas, especially in the more northern parts of the species’ range. In southern parts of their range eastern indigo snakes are habitat generalists which use most available habitat types. Movements between habitat types in northern areas of their range may relate to the need for thermal refugia (protection from cold and/or heat).

In northern areas of their range eastern indigo snakes prefer an interspersed of tortoise-inhabited sandhills and wetlands (Landers and Speake 1980). In these northern regions eastern indigo

snakes most often use forested areas rich with gopher tortoise burrows, hollowed root channels, hollow logs, or the burrows of rodents, armadillos, or land crabs as thermal refugia during cooler seasons (Lawler 1977; Moler 1985a; Layne and Steiner 1996). The eastern indigo snake in the northern region is typically classified as a longleaf pine savanna specialist because here, in the northern four-fifths of its range, the eastern indigo snake is typically only found in vicinity of xeric longleaf pine–turkey oak sandhills inhabited by the gopher tortoise (Means 2006).

In the milder climates of central and southern Florida, comprising the remaining one fifth of its range, thermal refugia such as those provided by gopher tortoise burrows may not be as critical to survival of indigo snakes. Consequently, eastern indigo snakes in these regions use a more diverse assemblage of habitats such as pine flatwoods, scrubby flatwoods, floodplain edges, sand ridges, dry glades, tropical hammocks, edges of freshwater marshes, muckland fields, coastal dunes, and xeric sandhill communities; with highest population concentrations of eastern indigo snakes occurring in the sandhill and pineland regions of northern and central Florida (Service 1999). Eastern indigo snakes have also been found on agricultural lands with close proximity to wetlands (Zeigler 2006).

In south Florida, agricultural sites (*e.g.*, sugar cane fields and citrus groves) are occupied by eastern indigo snakes. The use of sugarcane fields by eastern indigo snakes was first documented by Layne and Steiner in 1996. In these areas there is typically an abundance of wetland and upland ecotones (due to the presence of many ditches and canals), which support a diverse prey base for foraging. In fact, some speculate agricultural areas may actually have a higher density of eastern indigo snakes than natural communities due to the increased availability of prey. Gopher tortoise burrows are absent at these locations but there is an abundance of both natural and artificial refugia. Enge and Endries (2009) reporting on the status of the eastern indigo snake included sugarcane fields and citrus groves in a Global Information Systems (GIS)-base map of potential eastern indigo snake habitat. Numerous sightings of eastern indigo snakes within sugarcane fields have been reported within south Florida (Florida Fish and Wildlife Conservation Commission Indigo Snake Database [Enge 2017]). A recent study associated with the Comprehensive Everglades Restoration Plan (CERP) (A-1 FEB Project formerly A-1 Reservoir; Service code: 41420-2006-F-0477) documented eastern indigo snakes within sugarcane fields. The snakes used artificial habitats such as piles of limerock, construction debris, and pump stations. Recent studies also associated with the CERP at the C-44 Project (Service code: 41420-2009-FA-0314), and C-43 Project (Service code: 41420-2007-F-0589) documented eastern indigo snakes within citrus groves. The snakes used artificial habitats such as boards, sheets of tin, construction debris, pipes, drain pipes in abandoned buildings and septic tanks.

In extreme south Florida (*i.e.*, the Everglades and Florida Keys), eastern indigo snakes also utilize tropical hardwood hammocks, pine rocklands, freshwater marshes, abandoned agricultural land, coastal prairie, mangrove swamps, and human-altered habitats. Though eastern indigo snakes have been found in all available habitats of south Florida it is thought they prefer hammocks and pine forests since most observations occur there and use of these areas is disproportionate compared to the relatively small total area of these habitats (Steiner *et al.* 1983).

Even though thermal stress may not be a limiting factor throughout the year in south Florida, eastern indigo snakes still seek and use underground refugia. On the sandy central ridge of central Florida, eastern indigo snakes use gopher tortoise burrows more (62 percent) than other underground refugia (Layne and Steiner 1996). Other underground refugia used include armadillo (*Dasyus novemcinctus*) burrows near citrus groves, cotton rat (*Sigmodon hispidus*) burrows, and land crab (*Cardisoma guanhumi*) burrows in coastal areas (Layne and Steiner 1996; Wilson and Porras 1983). Natural ground holes, hollows at the base of trees or shrubs, ground litter, trash piles, and crevices of rock-lined ditch walls are also used (Layne and Steiner 1996). These refugia are used most frequently where tortoise burrows are not available, principally in low-lying areas off the central and coastal ridges.

Minimization Measures

The Service developed protection measures for the eastern indigo snake “Standard Protection Measures for the Eastern Indigo Snake” (Service 2013) located at: https://www.fws.gov/verobeach/ReptilesPDFs/20130812_EIS%20Standard%20Protection%20Measures_final.pdf. These protection measures (or the most updated version) are considered a minimization measure for projects proposed within eastern indigo snake habitat.

Determinations

If the use of this Key results in a determination of “**no effect**,” no further consultation is necessary with the SFESO.

If the use of this Key results in a determination of “**NLAA**,” the SFESO concurs with this determination and no further consultation is necessary for the effects of the proposed action on the eastern indigo snake.

For no effect or NLAA determinations, the Corps (or other Federal action agency) should make a note in the project file indicating the pathway used to reach your no effect or NLAA determination.

If a proposed project would impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, the subsequent Key should not be used. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual’s home range.

If the use of this Key results in a determination of “**may affect**,” consultation may be concluded informally or formally depending on project effects to eastern indigo snakes. Technical assistance from the Service can assist you in making a determination prior to submitting a request for consultation. In circumstances where the Corps desires to proceed with a consultation request prior to receiving additional technical assistance from the Service, we recommend the Corps document the biological rationale for their determination and proceed with a request accordingly.

- A. Project is not located in open water or salt marsh.....go to B
 Project is located solely in open water or salt marsh.....no effect
- B. Permit will be conditioned for use of the Service's most current guidance for Standard Protection Measures For The Eastern Indigo Snake (currently 2013) during site preparation and project construction.....go to C
 Permit will not be conditioned as above for the eastern indigo snake, or it is not known whether an applicant intends to use these measures and consultation with the Service is requested.....may affect
- C. The project will impact less than 25 acres of eastern indigo snake habitat (e.g., sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandoned citrus groves], and coastal dunes).....go to D
 The project will impact 25 acres or more of eastern indigo snake habitat (e.g., sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandoned citrus groves], and coastal dunes).....may affect
- D. The project has no known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and/or injured during project activities.....NLAA
 The project has known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and /or injured.....go to E
- E. Any permit will be conditioned such that all gopher tortoise burrows, active or inactive, will be excavated prior to site manipulation in the vicinity of the burrow¹. If an eastern indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Any permit will also be conditioned such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an eastern indigo snake, no work will commence until the snake has vacated the vicinity of proposed work.....NLAA²
 Permit will not be conditioned as outlined above.....may affect

End Key

¹ If excavating potentially occupied burrows, active or inactive, individuals must first obtain state authorization via a Florida Fish and Wildlife Conservation Commission Authorized Gopher Tortoise Agent permit. The excavation method selected should also minimize the potential for injury of an indigo snake. Applicants should follow the excavation guidance provided within the most current Gopher Tortoise Permitting Guidelines found at <http://myfwc.com/gophertortoise>.

² Please note, if the proposed project will impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/ human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, NLAA is not the appropriate conclusion. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range

Working with the Fish and Wildlife Foundation of Florida, the Service has established a fund to support conservation and recovery for the eastern indigo snake. Any project that has the potential to affect the eastern indigo snake and/or its habitat is encouraged to make a voluntary contribution to this fund. If you would like additional information about how to make a contribution and how these monies are used to support eastern indigo snake recovery please contact Ashleigh Blackford, Connie Cassler, or José Rivera at 772-562-3559.

This revised Key is effective immediately upon receipt by the Corps. Should circumstances change or new information become available regarding the eastern indigo snake and/or implementation of the Key, the determinations herein may be reconsidered and this Key further revised or amended.

Thank you for your continued cooperation in the effort to conserve fish and wildlife resources. If you have any questions or comments regarding this Key, please contact the SFESO at 772-562-3909.

Sincerely,



Roxanna Hinzman
Field Supervisor
South Florida Ecological Services

Cc:

Corps, Jacksonville, Florida (Dale Beter, Muriel Blaisdell, Ingrid Gilbert, Angela Ryan,
Irene Sadowski, Victoria White, Alisa Zarbo)
Service, Athens, Georgia (Michelle Elmore)
Service, Jacksonville, Florida (Annie Dziergowski)
Service, Panama City, Florida (Sean Blomquist)

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United States Department of the Interior



FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

January 25, 2010

David S. Hobbie
Chief, Regulatory Division
Jacksonville District Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Service Federal Activity Code: 41420-2007-FA-1494
Service Consultation Code: 41420-2007-I-0964
Subject: South Florida Programmatic
Concurrence
Species: Wood Stork

Dear Mr. Hobbie:

The Fish and Wildlife Service's (Service) South Florida Ecological Services Office (SFESO) and the U.S. Army Corps of Engineers Jacksonville District (Corps) have been working together to improve the consultation process for federally listed species associated with the Corps' wetland permitting program. The Service provided letters to the Corps dated March 23, 2007, and October 18, 2007, in response to a request for a multi-county programmatic concurrence with a criteria-based determination of "may affect, not likely to adversely affect" (NLAA) for the threatened eastern indigo snake (*Drymarchon corais couperi*) and the endangered wood stork (*Mycteria americana*) for projects involving freshwater wetland impacts within specified Florida counties. In our letters, we provided effect determination keys for these two federally listed species, with specific criteria for the Service to concur with a determination of NLAA.

The Service has revisited these keys recently and believes new information provides cause to revise these keys. Specifically, the new information relates to foraging efficiencies and prey base assessments for the wood stork and permitting requirements for the eastern indigo snake. This letter addresses the wood stork key and is submitted in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The eastern indigo snake key will be provided in a separate letter.

Wood stork

Habitat

The wood stork is primarily associated with freshwater and estuarine habitats that are used for nesting, roosting, and foraging. Wood storks typically construct their nests in medium to tall trees that occur in stands located either in swamps or on islands surrounded by relatively broad expanses of open water (Ogden 1991, 1996; Rodgers et al. 1996). Successful colonies are those



that have limited human disturbance and low exposure to land-based predators. Nesting colonies protected from land-based predators are characterized as those surrounded by large expanses of open water or where the nest trees are inundated at the onset of nesting and remain inundated throughout most of the breeding cycle. These colonies have water depths between 0.9 and 1.5 meters (3 and 5 feet) during the breeding season.

Successful nesting generally involves combinations of average or above-average rainfall during the summer rainy season and an absence of unusually rainy or cold weather during the winter-spring breeding season (Kahl 1964; Rodgers et al. 1987). This pattern produces widespread and prolonged flooding of summer marshes, which maximize production of freshwater fishes, followed by steady drying that concentrate fish during the season when storks nest (Kahl 1964). Successful nesting colonies are those that have a large number of foraging sites. To maintain a wide range of foraging sites, a variety of wetland types should be present, with both short and long hydroperiods. The Service (1999) describes a short hydroperiod as a 1 to 5-month wet/dry cycle, and a long hydroperiod as greater than 5 months. During the wet season, wood storks generally feed in the shallow water of the short-hydroperiod wetlands and in coastal habitats during low tide. During the dry season, foraging shifts to longer hydroperiod interior wetlands as they progressively dry-down (though usually retaining some surface water throughout the dry season).

Wood storks occur in a wide variety of wetland habitats. Typical foraging sites for the wood stork include freshwater marshes and stock ponds, shallow, seasonally flooded roadside and agricultural ditches, narrow tidal creeks and shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs. Because of their specialized feeding behavior, wood storks forage most effectively in shallow-water areas with highly concentrated prey. Through tactolocation, or grope feeding, wood storks in south Florida feed almost exclusively on fish between 2 and 25 centimeters [cm] (1 and 10 inches) in length (Ogden et al. 1976). Good foraging conditions are characterized by water that is relatively calm, uncluttered by dense thickets of aquatic vegetation, and having a water depth between 5 and 38 cm (5 and 15 inches) deep, although wood storks may forage in other wetlands. Ideally, preferred foraging wetlands would include a mosaic of emergent and shallow open-water areas. The emergent component provides nursery habitat for small fish, frogs, and other aquatic prey and the shallow, open-water areas provide sites for concentration of the prey during seasonal dry-down of the wetland.

Conservation Measures

The Service routinely concurs with the Corps' "may affect, not likely to adversely affect" determination for individual project effects to the wood stork when project effects are insignificant due to scope or location, or if assurances are given that wetland impacts have been avoided, minimized, and adequately compensated such that there is no net loss in foraging potential. We utilize our *Habitat Management Guidelines for the Wood Stork in the Southeast Region* (Service 1990) (Appendix 1) (HMG) in project evaluation. The HMG is currently under review and once final will replace the enclosed HGM. There is no designated critical habitat for the wood stork.

The SFESO recognizes a 29.9 kilometer [km] (18.6-mile) core foraging area (CFA) around all known wood stork colonies in south Florida. Appendix 2 (to be updated as necessary) provides locations of colonies and their CFAs in south Florida that have been documented as active within the last 10 years. The Service believes loss of suitable wetlands within these CFAs may reduce foraging opportunities for the wood stork. To minimize adverse effects to the wood stork, we recommend compensation be provided for impacts to foraging habitat. The compensation should consider wetland type, location, function, and value (hydrology, vegetation, prey utilization) to ensure that wetland functions lost due to the project are adequately offset. Wetlands offered as compensation should be of the same hydroperiod and located within the CFAs of the affected wood stork colonies. The Service may accept, under special circumstances, wetland compensation located outside the CFAs of the affected wood stork nesting colonies. On occasion, wetland credits purchased from a "Service Approved" mitigation bank located outside the CFAs could be acceptable to the Service, depending on location of impacted wetlands relative to the permitted service area of the bank, and whether or not the bank has wetlands having the same hydroperiod as the impacted wetland.

In an effort to reduce correspondence in effect determinations and responses, the Service is providing the Wood Stork Effect Determination Key below. If the use of this key results in a Corps determination of "no effect" for a particular project, the Service supports this determination. If the use of this Key results in a determination of NLAA, the Service concurs with this determination¹. This Key is subject to revisitation as the Corps and Service deem necessary.

The Key is as follows:

A. Project within 0.76 km (0.47 mile)² of an active colony site³ "may affect"⁴

Project impacts Suitable Foraging Habitat (SFH) at a location greater than 0.76 km (0.47 mile) from a colony site..... "go to B"

Project does not affect SFH⁵..... "no effect".

¹ With an outcome of "no effect" or "NLAA" as outlined in this key, and the project has less than 20.2 hectares (50 acres) of wetland impacts, the requirements of section 7 of the Act are fulfilled for the wood stork and no further action is required. For projects with greater than 20.2 hectares (50 acres) of wetland impacts, written concurrence of NLAA from the Service is necessary.

² Within the secondary zone (the average distance from the border of a colony to the limits of the secondary zone is 0.76 km (2,500 feet, or 0.47 mi).

³ An active colony is defined as a colony that is currently being used for nesting by wood storks or has historically over the last 10 years been used for nesting by wood storks.

⁴ Consultation may be concluded informally or formally depending on project impacts.

⁵ Suitable foraging habitat (SFH) are wetlands that typically have shallow-open water areas that are relatively calm and having a permanent or seasonal water depth between 5 to 38 cm (2 to 15 inches) deep. Other shallow non-wetland water bodies are also SFH. SFH supports and concentrates, or is capable of supporting and concentrating small fish, frogs, and other aquatic prey. Examples of SFH include, but are not limited to freshwater marshes, small

- B. Project impact to SFH is less than 0.20 hectare (one-half acre)⁶.....*NLAA*¹”
 - Project impact to SFH is greater in scope than 0.20 hectare (one-half acre).....*go to C*
- C. Project impacts to SFH not within the CFA (29.9 km, 18.6 miles) of a colony site*go to D*
 - Project impacts to SFH within the CFA of a colony site*go to E*
- D. Project impacts to SFH have been avoided and minimized to the extent practicable, and compensation (Service approved mitigation bank or as provided in accordance with Mitigation Rule 33 CFR Part 332) for unavoidable impacts is proposed in accordance with the CWA section 404(b)(1) guidelines and habitat compensation replaces the foraging value matching the hydroperiod⁷ of the wetlands affected and provides foraging value similar to, or higher than, that of impacted wetlands. See Appendix 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance⁸ *NLAA*¹”
 - Project not as above..... “*may affect*⁴”
- E. Project provides SFH compensation in accordance with the CWA section 404(b)(1) guidelines and is not contrary to the HMG; habitat compensation is within the appropriate CFA or within the service area of a Service-approved mitigation bank; and habitat compensation replaces foraging value, consisting of wetland enhancement or restoration

ponds, shallow, seasonally flooded roadside or agricultural ditches, seasonally flooded pastures, narrow tidal creeks or shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs.

⁶ On an individual basis, SFH impacts to wetlands less than 0.20 hectare (one-half acre) generally will not have a measurable effect on wood storks, although we request that the Corps require mitigation for these losses when appropriate. Wood storks are a wide ranging species, and individually, habitat change from impacts to SFH less than one-half acre are not likely to adversely affect wood storks. However, collectively they may have an effect and therefore regular monitoring and reporting of these effects are important.

⁷ Several researchers (Flemming et al. 1994; Ceilley and Bortone 2000) believe that the short hydroperiod wetlands provide a more important pre-nesting foraging food source and a greater early nestling survivor value for wood storks than the foraging base (grams of fish per square meter) that short hydroperiod wetlands provide. Although the short hydroperiod wetlands may provide less fish, these prey bases historically were more extensive and met the foraging needs of the pre-nesting storks and the early-age nestlings. Nest productivity may suffer as a result of the loss of short hydroperiod wetlands. We believe that most wetland fill and excavation impacts permitted in south Florida are in short hydroperiod wetlands. Therefore, we believe that it is especially important that impacts to these short hydroperiod wetlands within CFAs are avoided, minimized, and compensated for by enhancement/restoration of short hydroperiod wetlands.

⁸ For this Key, the Service requires an analysis of foraging prey base losses and enhancements from the proposed action as shown in the examples in Appendix 3 for projects with greater than 2.02 hectares (5 acres) of wetland impacts. For projects with less than 2.02 hectares (5 acres) of wetland impacts, an individual foraging prey base analysis is not necessary although type for type wetland compensation is still a requirement of the Key.

matching the hydroperiod⁶ of the wetlands affected, and provides foraging value similar to, or higher than, that of impacted wetlands. See Appendix 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance⁸..... "NLAA¹"

Project does not satisfy these elements "may affect⁴"

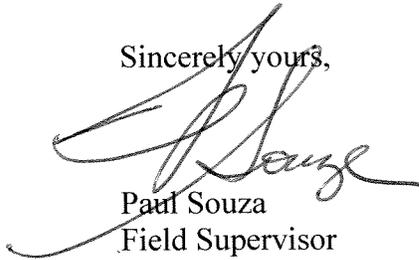
This Key does not apply to Comprehensive Everglades Restoration Plan projects, as they will require project-specific consultations with the Service.

Monitoring and Reporting Effects

For the Service to monitor cumulative effects, it is important for the Corps to monitor the number of permits and provide information to the Service regarding the number of permits issued where the effect determination was: "may affect, not likely to adversely affect." We request that the Corps send us an annual summary consisting of: project dates, Corps identification numbers, project acreages, project wetland acreages, and project locations in latitude and longitude in decimal degrees.

Thank you for your cooperation and effort in protecting federally listed species. If you have any questions, please contact Allen Webb at extension 246.

Sincerely yours,



Paul Souza
Field Supervisor
South Florida Ecological Services Office

Appendices

- cc: w/Appendices
- Corps, Jacksonville, Florida (Stu Santos)
- EPA, West Palm Beach, Florida (Richard Harvey)
- FWC, Vero Beach, Florida (Joe Walsh)
- Service, Jacksonville, Florida (Billy Brooks)

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Natural Resource Evaluation (NRE) Report

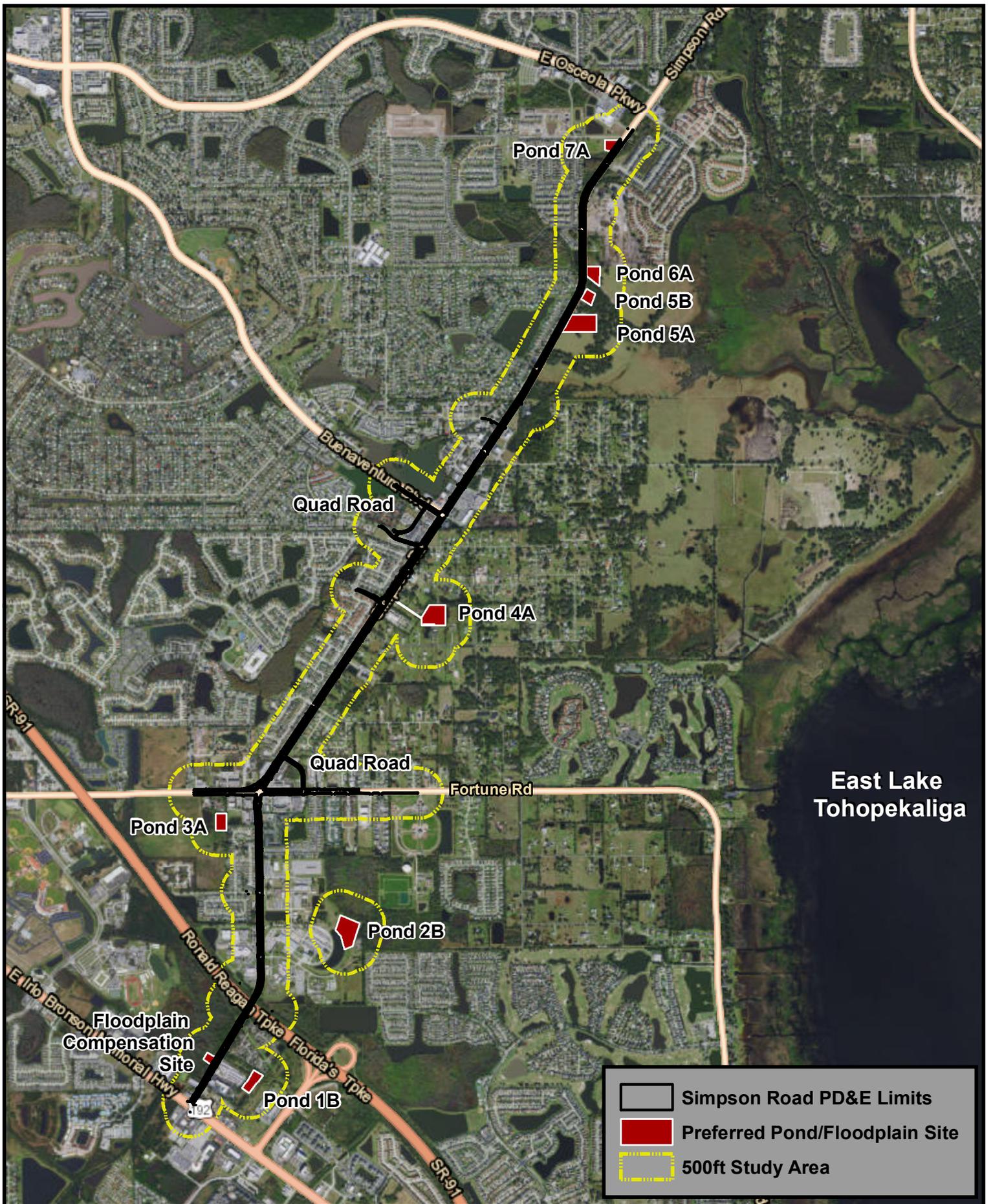
Simpson Road PD&E Study



Appendix E

RESOURCE MAPS



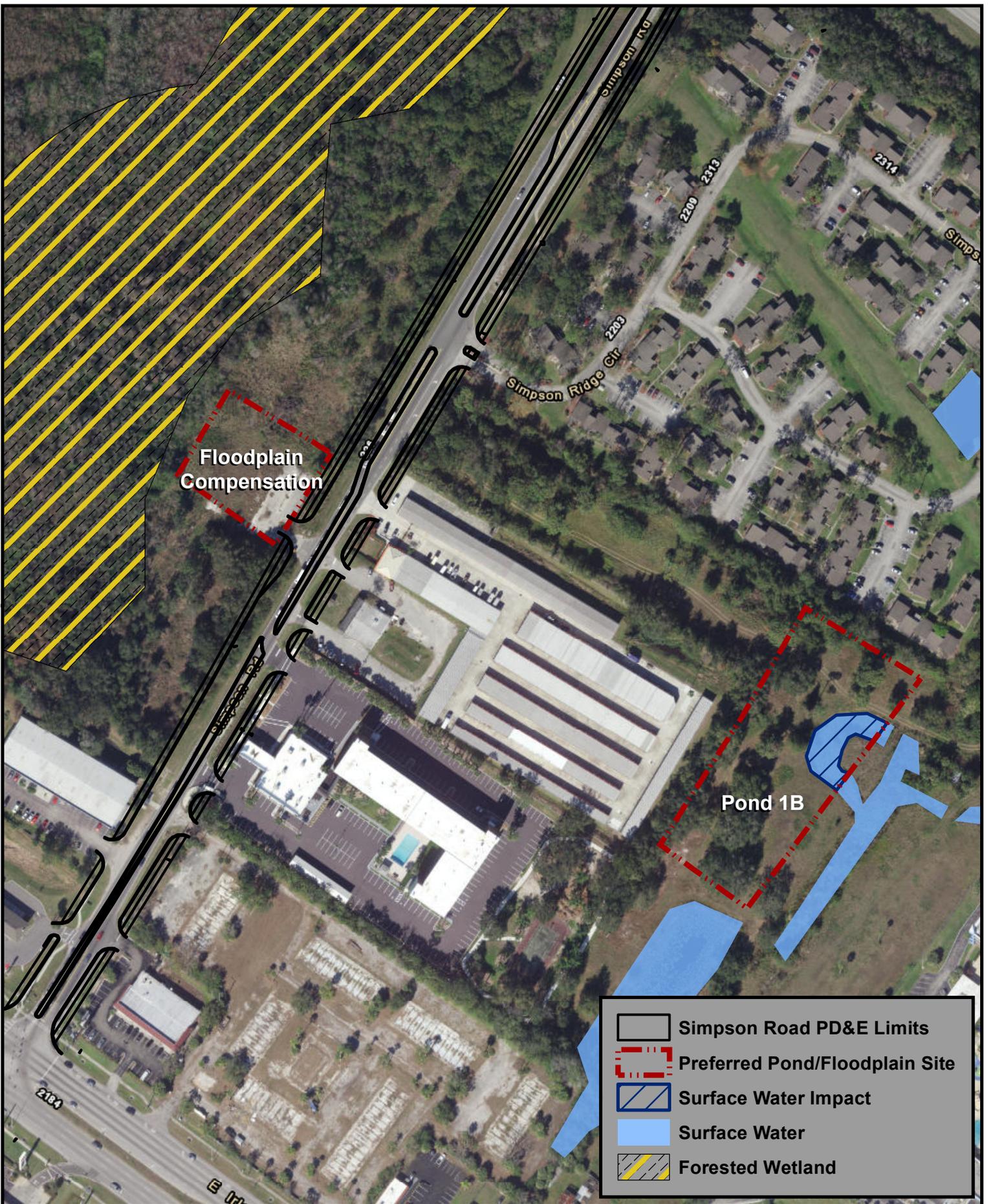


	Simpson Road PD&E Limits
	Preferred Pond/Floodplain Site
	500ft Study Area



0  1
Miles

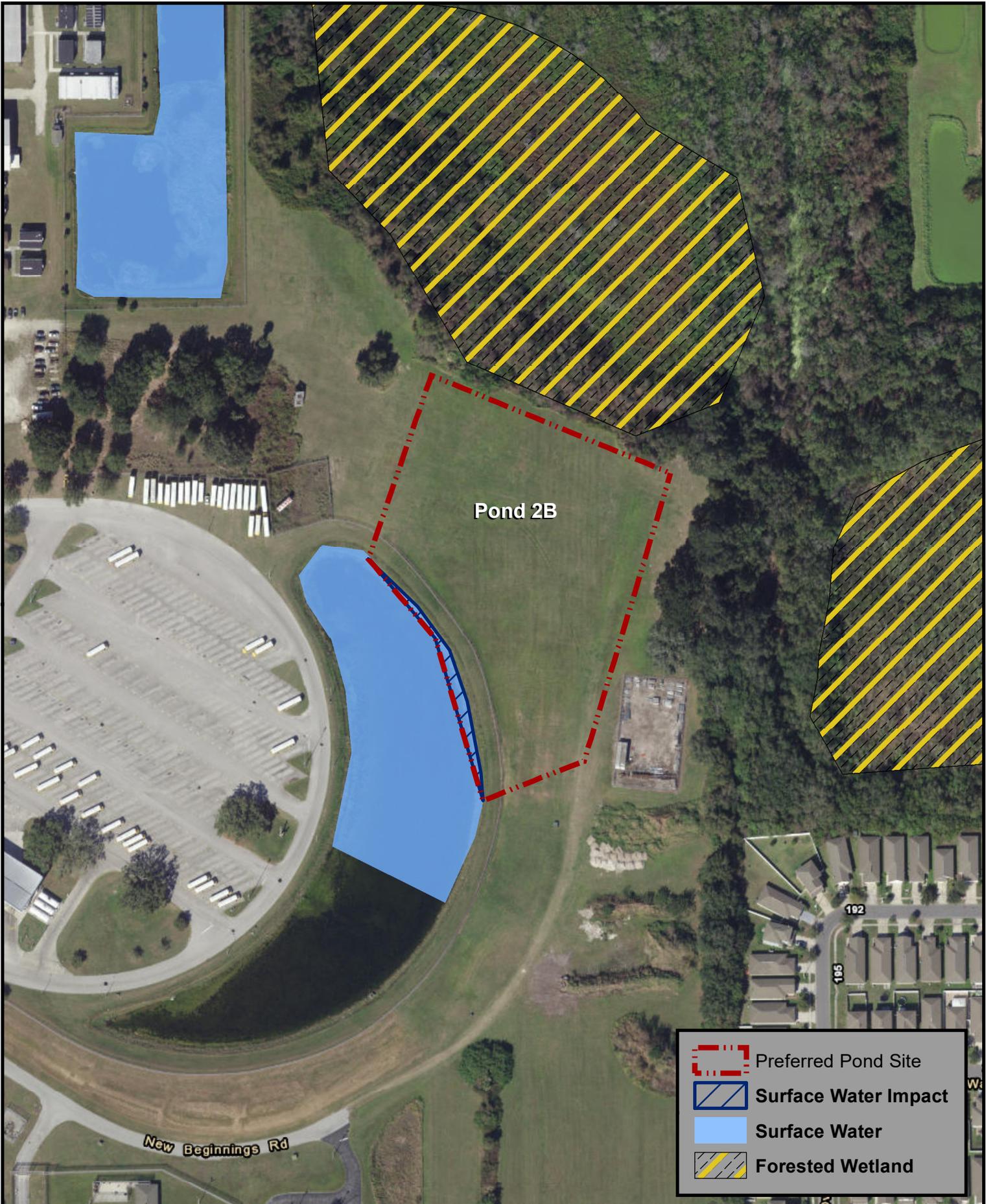
Simpson Road PD&E Study
Pond and Floodplain Compensation Sites Location Map



-  Simpson Road PD&E Limits
-  Preferred Pond/Floodplain Site
-  Surface Water Impact
-  Surface Water
-  Forested Wetland



Simpson Road PD&E Study
Basin 1



	Preferred Pond Site
	Surface Water Impact
	Surface Water
	Forested Wetland

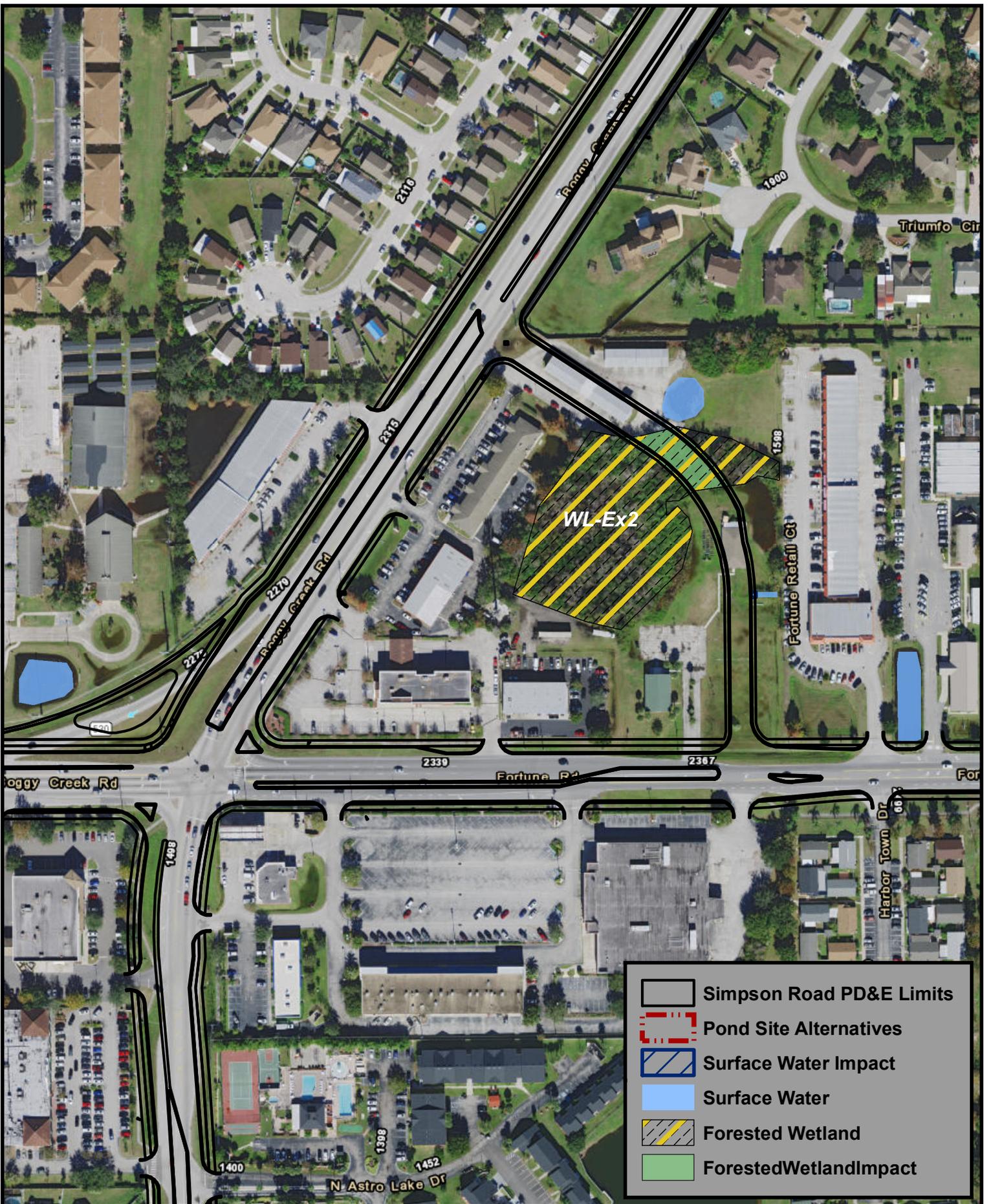


0  200
Feet

Simpson Road PD&E Study
Basin 2



Simpson Road PD&E Study
Basin 3



	Simpson Road PD&E Limits
	Pond Site Alternatives
	Surface Water Impact
	Surface Water
	Forested Wetland
	Forested Wetland Impact



Simpson Road PD&E Study
Fortune Road Quad Road



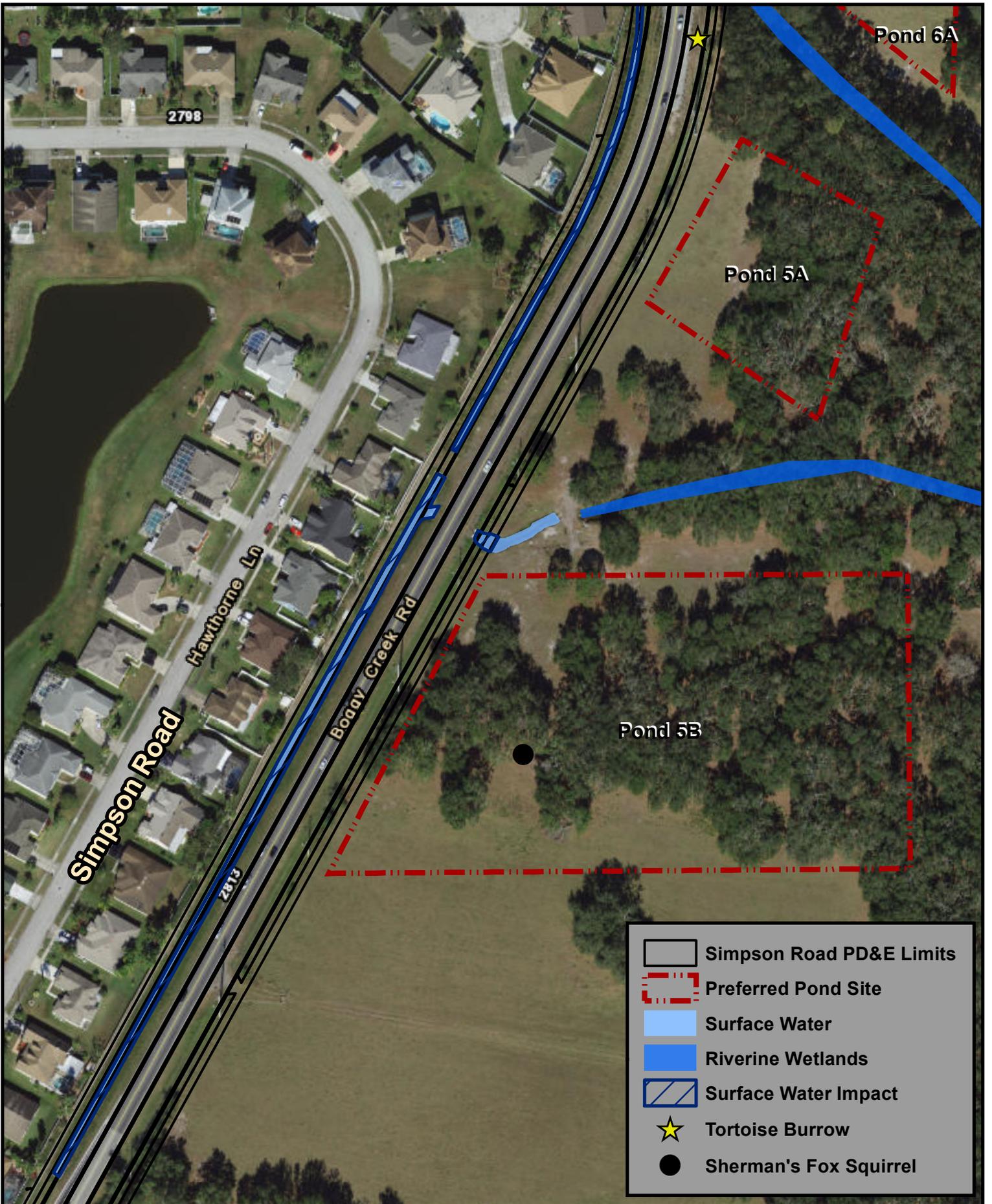
Simpson Road PD&E Study
Basin 4



-  Simpson Road PD&E Limits
-  Pond Site Alternatives
-  Surface Water Impact
-  Forested Wetland
-  Forested Wetland Impact
-  Surface Water
-  Riverine Wetlands
-  Sherman's Fox Squirrel



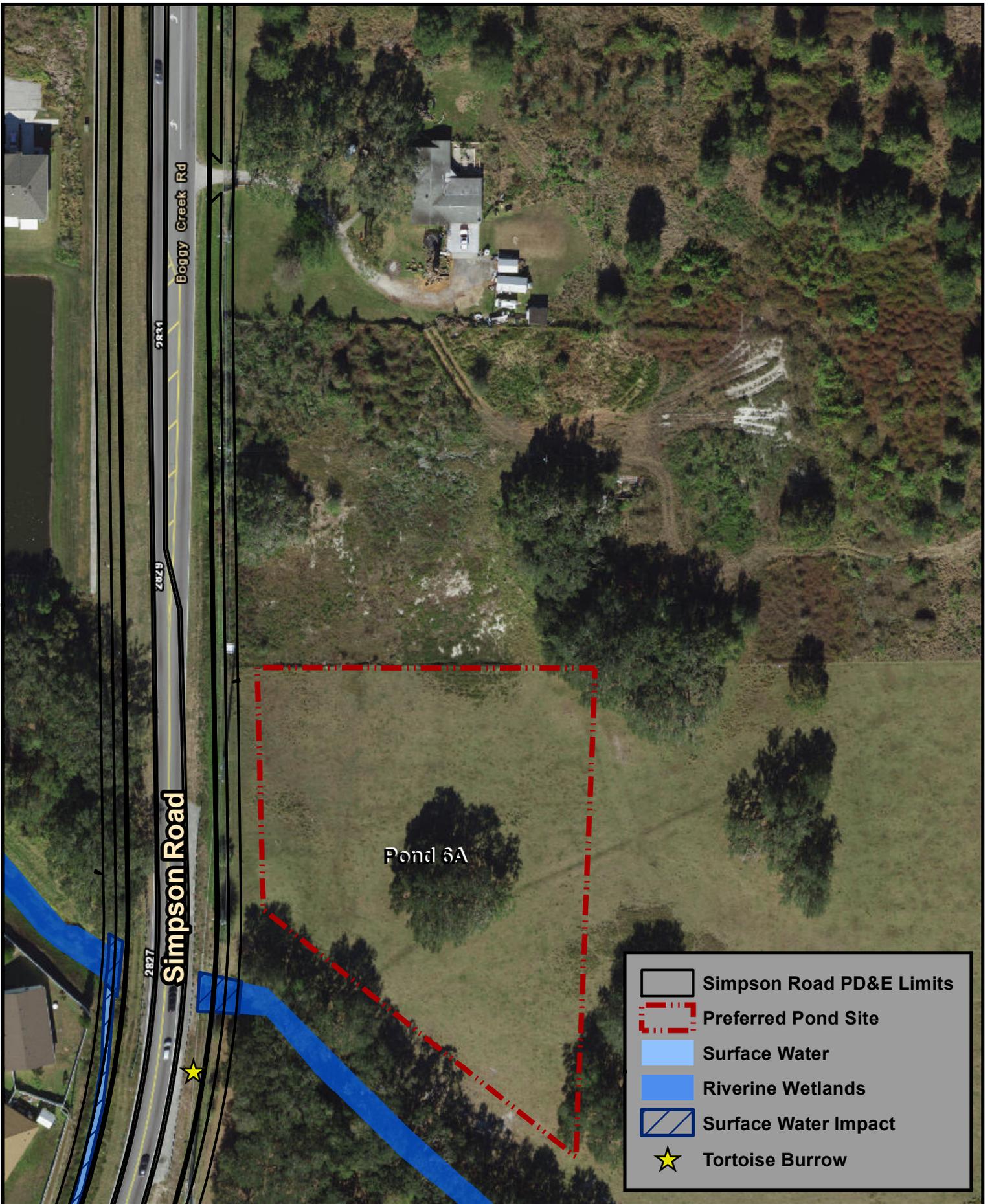
Simpson Road PD&E Study
Mainline



-  Simpson Road PD&E Limits
-  Preferred Pond Site
-  Surface Water
-  Riverine Wetlands
-  Surface Water Impact
-  Tortoise Burrow
-  Sherman's Fox Squirrel

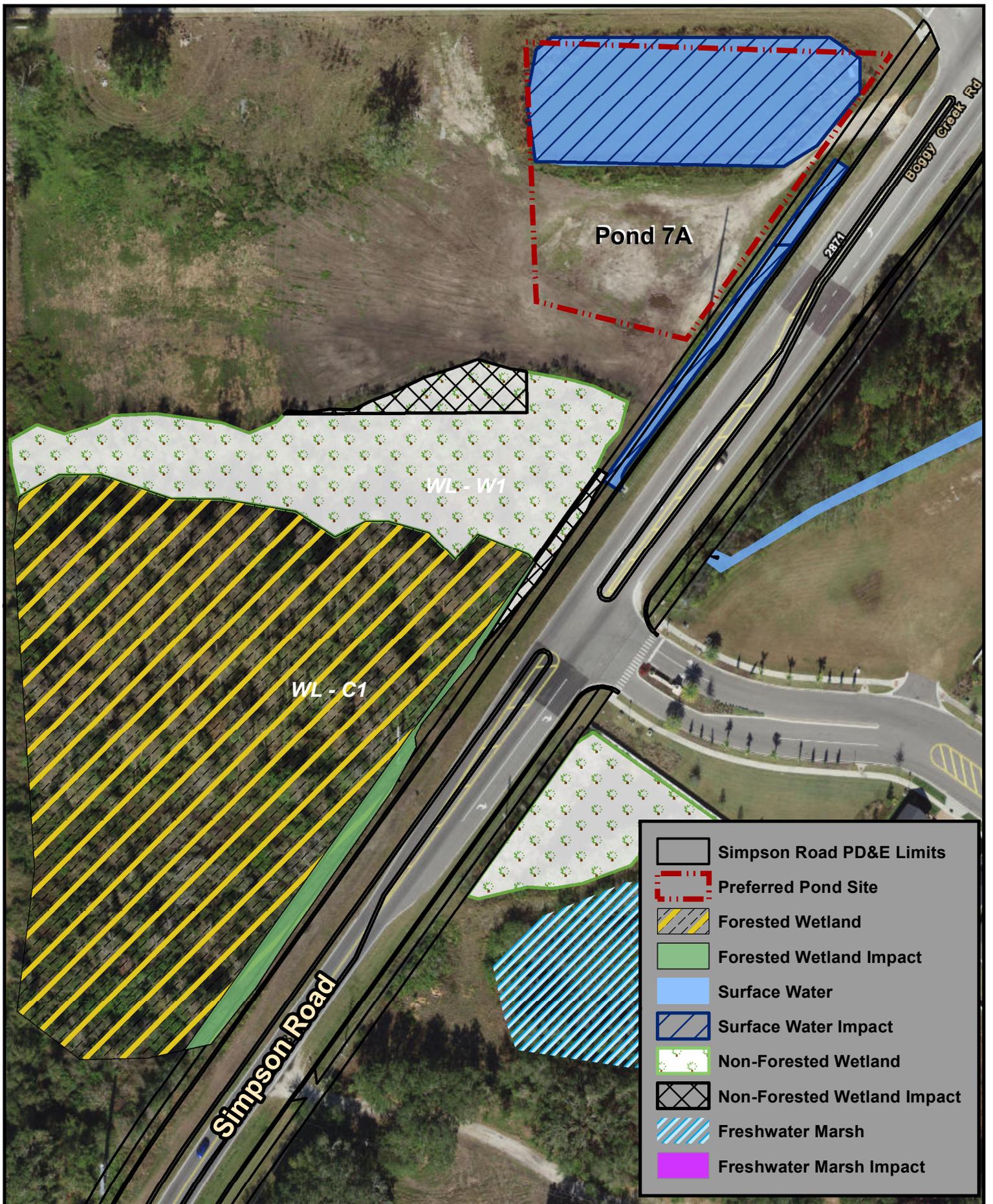


Simpson Road PD&E Study
Basin 5



	Simpson Road PD&E Limits
	Preferred Pond Site
	Surface Water
	Riverine Wetlands
	Surface Water Impact
	Tortoise Burrow





-  Simpson Road PD&E Limits
-  Preferred Pond Site
-  Forested Wetland
-  Forested Wetland Impact
-  Surface Water
-  Surface Water Impact
-  Non-Forested Wetland
-  Non-Forested Wetland Impact
-  Freshwater Marsh
-  Freshwater Marsh Impact



Simpson Road PD&E Study
Basin 7

Natural Resource Evaluation (NRE) Report

Simpson Road PD&E Study



Appendix F

UMAM WORKSHEETS



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

Site/Project Name Simpson Road Improvements US 192 to 560 feet south of Myers Road		Application Number TBD	Assessment Area Name or Number Cypress	
FLUCCs code 621	Further classification (USFWS - NWI) PFO2C		Impact or Mitigation Site? Impact	Assessment Area Size 0.13
Basin/Watershed Name/Number Kissimmee River Watershed	Affected Waterbody (Class) III	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None		
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Relic system associated with tributaries of Boggy Creek and Lake Tohopekaliga and East Lake Tohopekaliga				
Assessment area description Forested wetland containing bald cypress and red maple with Carolina willow and primrose willow in the sub-canopy.				
Significant nearby features Simpson Road, tributaries of Boggy Creek and East Lake Tohopekaliga		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not Unique		
Functions Provides wildlife habitat, food chain support, water quality improvement, foraging and roosting habitat for wading birds, and other wildlife utilization (cover, refuge, nesting, nursery areas, etc.).		Mitigation for previous permit/other historic use No		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Urban wildlife, including wading bird roosting and foraging, raptors, snakes, small mammals (e.g. Sherman's fox squirrel), and insects.		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Wood stork (FT) foraging, wading birds (ST) foraging, potentially Eastern indigo snake (FT) shelter and foraging.		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):				
Additional relevant factors:				
Assessment conducted by: HDR		Assessment date(s): 2019		

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

Site/Project Name Simpson Road Improvements US 192 to 560 feet south of Myers Road	Application Number TBD	Assessment Area Name or Number
Impact or Mitigation Impact	Assessment conducted by: HDR	Assessment date: 2019

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

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

<p>.500(6)(a) Location and Landscape Support</p> <p>w/o pres or current with</p> <table border="1"> <tr> <td>3</td> <td>0</td> </tr> </table>	3	0	<p>System abuts a high volume transportation corridor, powerline easement, and high-density, residential communities. This relic, undeveloped habitat fragment was once linked to tributaries of Boggy Creek; however, these tributaries have been disturbed. Support for wildlife movement is possible, but limited by man-made barriers and human use. Access for avian species is possible including roosting and foraging. Small and mid-sized mammals could use the area, but highway mortality would be a serious threat.</p>
3	0		
<p>.500(6)(b)Water Environment (n/a for uplands)</p> <p>w/o pres or current with</p> <table border="1"> <tr> <td>4</td> <td>0</td> </tr> </table>	4	0	<p>Receives untreated roadway runoff and exotic species seed source from ditches. Standing water was observed at the time of the review.</p>
4	0		
<p>.500(6)(c)Community structure</p> <p>1. Vegetation and/or 2. Benthic Community</p> <p>w/o pres or current with</p> <table border="1"> <tr> <td>4</td> <td>0</td> </tr> </table>	4	0	<p>Forested wetland containing bald cypress and red maple with Carolina willow and primrose willow in the sub-canopy.</p>
4	0		

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.37	0

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

For impact assessment areas			
FL = delta x acres =			
0.37	x	0.13	= 0.05

Delta = [with-current]
0.37

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

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

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

Site/Project Name Simpson Road Improvements US 192 to 560 feet south of Myers Road		Application Number TBD	Assessment Area Name or Number Mixed Wetland Hardwood	
FLUCCs code 617	Further classification (USFWS) PFO1C		Impact or Mitigation Site? Impact	Assessment Area Size 0.04
Basin/Watershed Name/Number Kissimmee River Watershed	Affected Waterbody (Class) III	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None		
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Relic system associated with tributaries of Boggy Creek and Lake Tohopekaliga and East Lake Tohopekaliga				
Assessment area description Forested wetland containing bald cypress, red maple, American elm, laurel oak, and the exotic and invasive Chinese tallow with Carolina willow and Brazilian pepper in the sub-canopy.				
Significant nearby features Simpson Road, tributaries of Boggy Creek and East Lake Tohopekaliga		Uniqueness (considering the relative rarity in relation to the regional landscape.) Becoming more unique for the regional landscape due to development		
Functions Provides wildlife habitat, food chain support, water quality improvement, foraging and roosting habitat for wading birds, and other wildlife utilization (cover, refuge, nesting, nursery areas, etc.).		Mitigation for previous permit/other historic use No		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Urban wildlife, including wading bird roosting and foraging, raptors, snakes, small mammals (e.g. Sherman's fox squirrel), and insects.		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Wood stork (FT) foraging, wading birds (ST) foraging, potentially Eastern indigo snake (FT) shelter and foraging, crested caracara (FT) transient foraging, Florida sandhill crane (ST) foraging (observed adjacent).		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.): Florida sandhill crane and Sherman's fox squirrel observed adjacent				
Additional relevant factors:				
Assessment conducted by: HDR		Assessment date(s): 2019		

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

Site/Project Name Simpson Road Improvements US 192 to 560 feet south of Myers Road	Application Number TBD	Assessment Area Name or Number Mixed Wetland Hardwood
Impact or Mitigation Impact	Assessment conducted by: HDR	Assessment date: 2019

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

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

.500(6)(a) Location and Landscape Support w/o pres or current with <table border="1"> <tr> <td align="center">7</td> <td align="center">0</td> </tr> </table>	7	0	System abuts a high volume transportation corridor and high-density, residential communities. This relic ststem includes some of the remaining undeveloped habitat in this region (west of Lake Toho) and is linked to tributaries of Boggy Creek. Support for wildlife movement is possible, but limited to the west by man-made barriers and human use. Access for avian species is possible including roosting and foraging. Small and mid-sized mammals would use the area, but highway mortality is a threat.
7	0		
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current with <table border="1"> <tr> <td align="center">5</td> <td align="center">0</td> </tr> </table>	5	0	Receives untreated roadway runoff. Standing water was observed at the time of the review.
5	0		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current with <table border="1"> <tr> <td align="center">6</td> <td align="center">0</td> </tr> </table>	6	0	Forested system with bald cypress, red maple, American elm, laurel oak, and the exotic and invasive Chinese tallow with Carolina willow and Brazilian pepper in the sub-canopy.
6	0		

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.60	0

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

For impact assessment areas			
FL = delta x acres =			
0.60	x	0.04	= 0.02

Delta = [with-current]
0.60

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

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

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

Site/Project Name Simpson Road Improvements US 192 to 560 feet south of Myers Road		Application Number TBD	Assessment Area Name or Number Exotic Hardwoods
FLUCCs code 619	Further classification (USFWS) PFOC	Impact or Mitigation Site? Impact	Assessment Area Size 2.42
Basin/Watershed Name/Number Kissimmee River Watershed	Affected Waterbody (Class) III	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None	
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Only man-made connections exist			
Assessment area description Forested wetlands containing the exotic and invasive Chinese tallow with mature Carolina willow and Brazilian pepper in the sub-canopy and an occasional red maple and laurel oak.			
Significant nearby features Simpson Road, Fortune Road		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not unique	
Functions Provides some water quality value		Mitigation for previous permit/other historic use No	
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Urban wildlife		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Not expected	
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):			
Additional relevant factors:			
Assessment conducted by: HDR		Assessment date(s): 2019	

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

Site/Project Name Simpson Road Improvements US 192 to 560 feet south of Myers Road	Application Number TBD	Assessment Area Name or Number
Impact or Mitigation Impact	Assessment conducted by: HDR	Assessment date: 2019

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

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

.500(6)(a) Location and Landscape Support w/o pres or current 2 with 0	Systems are within an urban setting
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current 5 with 0	These areas receive untreated roadway and stormwater runoff
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current 3 with 0	Forested wetlands containing the exotic and invasive Chinese tallow with mature Carolina willow and Brazilian pepper in the sub-canopy and an occassional red maple and laurel oak.

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres 0.33	with 0

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

For impact assessment areas			
FL = delta x acres =			
0.33	x	2.42	= 0.80

Delta = [with-current]
0.33

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

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

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

Site/Project Name Simpson Road Improvements US 192 to 560 feet south of Myers Road		Application Number TBD	Assessment Area Name or Number Non-Forested Wetland	
FLUCCs code 640	Further classification (USFWS - NWI) PSSC		Impact or Mitigation Site? Impact	Assessment Area Size 0.04
Basin/Watershed Name/Number Kissimmee River Watershed	Affected Waterbody (Class) III	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance) None		
Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands Relic system associated with tributaries of Boggy Creek and Lake Tohopekaliga and East Lake Tohopekaliga				
Assessment area description Carolina willow and primrose willow.				
Significant nearby features Simpson Road, tributaries of Boggy Creek and East Lake Tohopekaliga		Uniqueness (considering the relative rarity in relation to the regional landscape.) Not Unique		
Functions Provides wildlife habitat, food chain support, water quality improvement, foraging and roosting habitat for wading birds, and other wildlife utilization (cover, refuge, nesting, nursery areas, etc.).		Mitigation for previous permit/other historic use No		
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found) Urban wildlife		Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area) Wood stork (FT) foraging, wading birds (ST) foraging, potentially Eastern indigo snake (FT) shelter and foraging.		
Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):				
Additional relevant factors:				
Assessment conducted by: HDR		Assessment date(s): 2019		

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

Site/Project Name Simpson Road Improvements US 192 to 560 feet south of Myers Road	Application Number TBD	Assessment Area Name or Number
Impact or Mitigation Impact	Assessment conducted by: HDR	Assessment date: 2019

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

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

.500(6)(a) Location and Landscape Support	<p>System abuts a high volume transportation corridor, powerline easement, and high-density, residential communities. This relic, undeveloped habitat fragment was once linked to tributaries of Boggy Creek; however, these tributaries have been disturbed. Support for wildlife movement is possible, but limited by man-made barriers and human use. Access for avian species is possible including foraging. Small and mid-sized mammals could use the area, but highway mortality would be a serious threat.</p>			
<table border="1"> <tr> <td>w/o pres or current</td> <td>with</td> </tr> <tr> <td align="center">3</td> <td align="center">0</td> </tr> </table>		w/o pres or current	with	3
w/o pres or current	with			
3	0			
.500(6)(b)Water Environment (n/a for uplands)	<p>Receives untreated roadway runoff and exotic species seed source from ditches. Standing water was observed at the time of the review. The area is managed by mowing.</p>			
<table border="1"> <tr> <td>w/o pres or current</td> <td>with</td> </tr> <tr> <td align="center">4</td> <td align="center">0</td> </tr> </table>		w/o pres or current	with	4
w/o pres or current	with			
4	0			
.500(6)(c)Community structure	<p>Carolina willow and primrose willow.</p>			
<p>1. Vegetation and/or 2. Benthic Community</p> <table border="1"> <tr> <td>w/o pres or current</td> <td>with</td> </tr> <tr> <td align="center">3</td> <td align="center">0</td> </tr> </table>		w/o pres or current	with	3
w/o pres or current	with			
3	0			

Score = sum of above scores/30 (if uplands, divide by 20)	
current or w/o pres	with
0.33	0

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

For impact assessment areas			
FL = delta x acres =			
0.33	x	0.04	= 0.01

Delta = [with-current]
0.33

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

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