

# Final Biological Assessment Report

**Florida Department of Transportation - District VII**

**County Line Road (C.R. 578)**  
**Project Development and Environment Study**  
**From U.S. 19 (S.R. 55) to U.S. 41 (S.R. 45)**

*Work Program Item Segment Number: 257298 I  
Federal-Aid Program Number: 7822 001 S  
Pasco and Hernando Counties, Florida*

*The proposed project involves improving County Line Road (C.R. 578) to a multi-lane facility from U.S. 19 (S.R. 55) to east of U.S. 41 (S.R. 45) in Pasco and Hernando Counties, a distance of approximately 19.3 kilometers (12.0 miles). The project includes a segment of roadway along a new alignment. This segment is referred to as the Ayers Road Extension and extends from the interchange of C.R. 578 and the Suncoast Parkway to east of U.S. 41, a distance of approximately 5.6 kilometers (3.5 miles).*



**January 2003**

# Final Biological Assessment Report

**Florida Department of Transportation - District VII**

**County Line Road (C.R. 578)**  
**Project Development and Environment Study**  
**From U.S. 19 (S.R. 55) to U.S. 41 (S.R. 45)**

*Work Program Item Segment Number: 257298 1  
Federal-Aid Program Number: 7822 001 S  
Pasco and Hernando Counties, Florida*

*The proposed project involves improving County Line Road (C.R. 578) to a multi-lane facility from U.S. 19 (S.R. 55) to east of U.S. 41 (S.R. 45) in Pasco and Hernando Counties, a distance of approximately 19.3 kilometers (12.0 miles). The project includes a segment of roadway along a new alignment. This segment is referred to as the Ayers Road Extension and extends from the interchange of C.R. 578 and the Suncoast Parkway to east of U.S. 41, a distance of approximately 5.6 kilometers (3.5 miles).*

*Prepared by:*

*URS Corporation Southern*

*January 2003*



## TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
1.0	INTRODUCTION .....	1-1
1.1	Purpose.....	1-1
1.2	Project Description.....	1-2
2.0	NEED FOR IMPROVEMENT .....	2-1
2.1	Consistency with Transportation Plans.....	2-1
3.0	ALTERNATIVE ALIGNMENT ANALYSIS .....	3-1
3.1	Build Alternative Alignments Evaluation.....	3-1
3.1.1	Project Segments.....	3-1
3.2	Recommendation .....	3-1
4.0	VEGETATIVE COMMUNITIES .....	4-1
4.1	Upland Communities .....	4-2
4.2	Wetland Communities.....	4-4
5.0	PROTECTED SPECIES .....	5-1
5.1	Field Investigations .....	5-1
5.2	Protected Species Evaluation Results .....	5-2
5.2.1	Plants .....	5-2
5.2.2	Amphibians .....	5-8
5.2.3	Reptiles.....	5-8
5.2.4	Birds.....	5-9
5.2.5	Mammals.....	5-11
5.3	Protected Species Conclusions .....	5-11
5.4	Commitments.....	5-13
6.0	REFERENCES .....	6-1

Appendix A Vegetative Community and Habitat Maps

Appendix B Agency Correspondence

Appendix C Eastern Indigo Snake Construction Precautions

## LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
1-1	Project Location Map .....	1-1
3-1	Proposed Typical Section.....	3-2

## LIST OF TABLES

<u>Table</u>		<u>Page</u>
5-1	Protected Species Potentially Occurring Within the Project Study Corridor .....	5-3

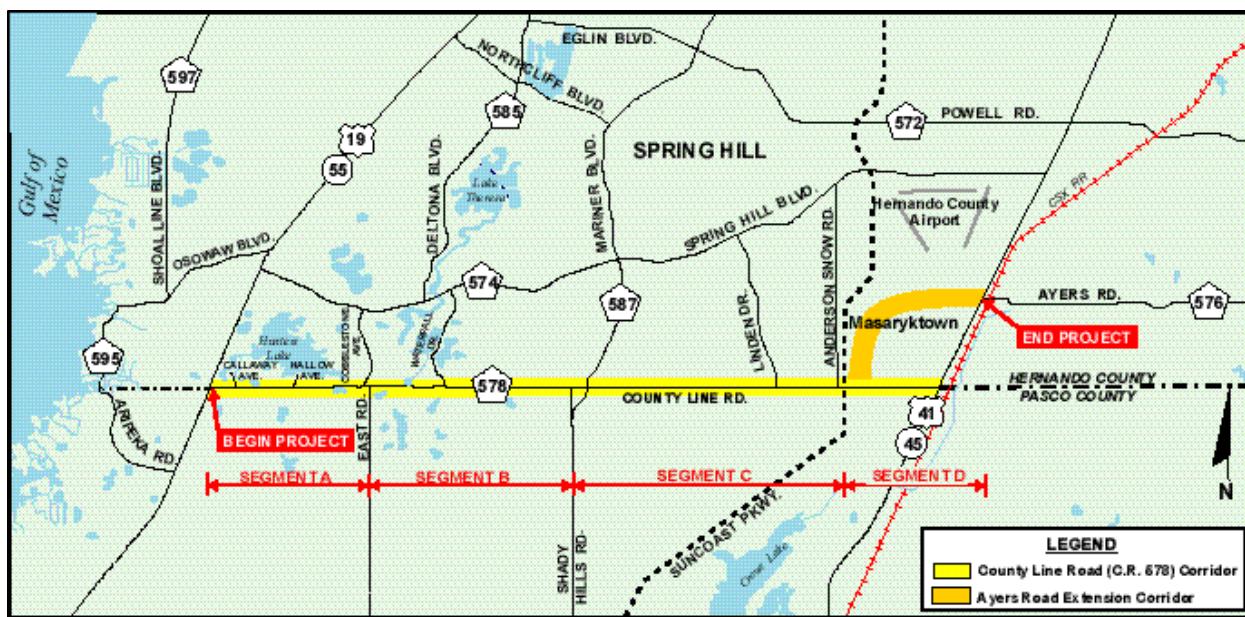
# *Section 1.0*

## **INTRODUCTION**

---

The Florida Department of Transportation (FDOT) in partnership with Pasco and Hernando Counties has conducted a Project Development and Environment (PD&E) Study to evaluate capacity improvement alternatives for County Line Road (C.R. 578) in Pasco and Hernando Counties, as shown in Figure 2-1. The proposed project involves improving C.R. 578 from a primarily two-lane roadway to a multi-lane facility from the vicinity of U.S. 19 (S.R. 55) to the vicinity of U.S. 41 (S.R. 45), a distance of approximately 12.0 miles (mi) [19.3 kilometers (km)]. A segment of roadway on new alignment, referred to as the Ayers Road Extension, is being proposed from the C.R. 578/Suncoast Parkway interchange to the vicinity of U.S. 41 and Ayers Road (C.R. 576), a distance of approximately 3.5 mi (5.6 km). The Ayers Road Extension provides for a continuous travel route between U.S. 19 and C.R. 581 and it also would improve access to the Hernando County Airport with a new connection to the airport.

**FIGURE 1-1**  
**PROJECT LOCATION MAP**



### **1.1 PURPOSE**

The objective of the PD&E Study is to provide documented environmental and engineering analyses that will assist the FDOT and the Federal Highway Administration (FHWA) in reaching a decision on the location and conceptual design for improvements to C.R. 578. This Study will also comply with the requirements of the National Environmental Policy Act (NEPA) and other Federal laws to qualify the proposed project for Federal-aid funding.

The purpose of this report is to evaluate the C.R. 578 project area for the potential for occurrences of federal and/or state listed threatened and endangered plant and animal species and to assess potential impacts to any protected species, or their habitats, which may occur as a result of the construction or operation of the proposed project.

## **1.2 PROJECT DESCRIPTION**

The C.R. 578 corridor is an east/west facility with a functional classification of a major collector. The project is located within Sections 1 through 6 of Township 24 South, Range 17 East and Sections 1 through 6 of Township 24 South, Range 18 East in Pasco County, and Sections 31 through 36 of Township 23 South, Range 17 East; Sections 25, 26, 31 through 36 of Township 23 South, Range 18 East; and Section 30 of Township 23 South, Range 19 East in Hernando County.

C.R. 578 is currently a two-lane rural roadway from U.S. 19 to Callaway Avenue and from Hallow Avenue to U.S. 41. From the vicinity of Callaway Avenue to Hallow Avenue, C.R. 578 has been expanded to a four-lane divided suburban facility with an open drainage system. In addition, for 0.5 mi (0.8 km) west and east of the interchange at the Suncoast Parkway, C.R. 578 has recently been expanded to a four-lane divided facility. The existing posted speed limit along C.R. 578 ranges from 40 to 55 miles per hour (mph) (60 to 90 kilometers per hour (km/h)). The existing right-of-way (ROW) width ranges from 50 feet (ft) (15.24 meters (m)) to 170 ft (51.82 m) except at the Suncoast Parkway interchange where the ROW width is 254 ft (77.42 m).

Primary land uses along C.R. 578 include numerous residential subdivisions, individual residences, commercial development, the Spring Hill Regional Hospital, the Suncoast Elementary School, the Hernando County Airport, and numerous religious facilities.

# **Section 2.0**

## **NEED FOR IMPROVEMENT**

---

The need for improvements along the C.R. 578 corridor is based primarily on the following conditions:

- Current substandard traffic operations;
- Future traffic demands along the C.R. 578 corridor, and the projected future socioeconomic growth in northwest Pasco and southwest Hernando Counties;
- Inadequate driver sight distances;
- Inadequate capacity as a designated evacuation route;
- Need for adequate pedestrian facilities;
- Assistance in improving access to the Hernando County Airport; and
- Providing a continuous route between U.S. 19 and C.R. 581.

The 2025 Average Annual Daily Traffic (AADT) volumes that were developed from the use of the 2020 Tampa Bay Regional Planning Model (TBRPM) using the revised land use data for Pasco County indicate that a four-lane roadway will be required for C.R. 578 from U.S. 19 to U.S. 41 to provide acceptable levels of service.

### **2.1 CONSISTENCY WITH TRANSPORTATION PLANS**

The portion of the project from East Road to the Suncoast Parkway is included in the *Pasco County Metropolitan Planning Organization's (MPO's) 2025 Long Range Transportation Plan (LRTP)*<sup>4</sup> as a four-lane divided facility. The portion of the project from U.S. 19 to the Suncoast Parkway is included in the *Hernando County MPO's 2025 LRTP*<sup>5</sup> and is recommended to be improved to a four-lane divided facility. The proposed new roadway alignment, Ayers Road Extension, from the interchange of C.R. 578 and Suncoast Parkway to the vicinity of U.S. 41 and Ayers Road is also identified in the *Hernando County 2025 LRTP*<sup>5</sup> as a four-lane divided facility.

In addition, the *Hernando County 2025 LRTP*<sup>5</sup> has designated a portion of C.R. 578, from east of the Suncoast Parkway to U.S. 41, as a constrained facility. This constraint is based on the existing scenic and aesthetic characteristics associated with this canopy roadway segment. No multi-lane improvements are considered for this segment.

*Section 3.0*

### **3.1 BUILD ALTERNATIVE ALIGNMENTS EVALUATION**

To effectively develop and evaluate all viable improvement options, the following three-step process was applied:

- Step One: Typical sections were developed in conjunction with the Department, Pasco County and Hernando County based on the design criteria and the traffic analysis.
  - Step Two: Alignments were developed for each segment based on the typical section developed in Step One, and the assumption that additional ROW (ROW) could be acquired on the south side, north side, or from both sides of the existing facility.
  - Step Three: The project was divided into four segments based on the existing land use patterns and future construction segments.

### **3.1.1 PROJECT SEGMENTS**

Project segments are used in this type of study to effectively assess and compare the effects of each alignment. C.R. 578 was divided into the four study segments as follows due to existing land use patterns:

- Segment A: U.S. 19 to East Road – A distance of 2.4 mi (3.9 km).
  - Segment B: East Road to Mariner Boulevard/Shady Hills Road – A distance of 3.2 mi (5.1 km).
  - Segment C: Mariner Boulevard/Shady Hills Road to Suncoast Parkway – A distance of 3.9 mi (6.3 km).
  - Segment D: Suncoast Parkway to U.S. 41 (Ayers Road Extension) – A distance of 3.5 mi (5.6 km).

### 3.2 RECOMMENDATION

Both the existing and design year conditions were evaluated, and various improvement alternative alignments were developed and are documented in the *Preliminary Engineering Report (PER), Section 8.0*. After a thorough technical analysis and a comprehensive public involvement process, the study recommended the following optimized alternative for C.R. 578 (Alignment S-8) and Ayers Road Extension (Alignment S-5).

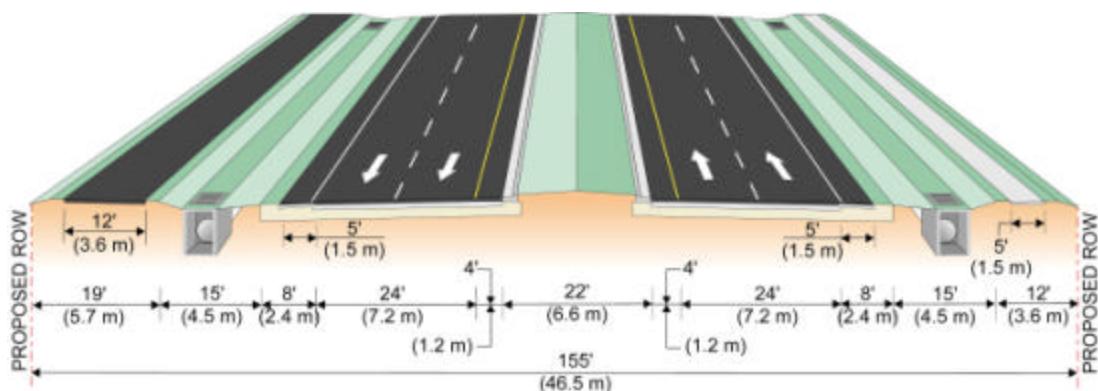
- U.S. 19 to Hamlet Circle North Alignment

- Hamlet Circle to Fountain Court                                  Within existing right-of-way (ROW)
- Fountain Court to Kelley Road                                  South Alignment
- Kelly Road to Suncoast Parkway                                North Alignment
- Suncoast Parkway to U.S. 41  
(Ayers Road Extension)    New Alignment

Ayers Road Extension (Alignment S-5) begins east of the Suncoast Parkway and travels north to east and connects to U.S. 41 at Ayers Road.

The typical section proposed, and approved by Pasco and Hernando Counties, is a four-lane divided suburban facility with a 30 ft (9.0 m) median of which 22 ft (6.6 m) is raised, two 12 ft (3.6 m) travel lanes in each direction, 8 ft (2.4 m) outside shoulders with 5ft (1.5 m) of the shoulder paved, and 15 ft (4.5 m) drainage swales. A 12 ft (3.6 m) multi-use facility on the north side of the roadway and a 5 ft (1.5 m) sidewalk on the south side of the roadway are recommended. The design speed for this typical section is 55 mph (90 km/h). This typical section will require a minimum of approximately 155 ft (46.5 m) of ROW, as shown in Figure 3-1.

**FIGURE 3-1**  
**SUBURBAN TYPICAL SECTION**



## **Section 4.0**

# **VEGETATIVE COMMUNITIES**

---

In order to assess the project area for the potential occurrence of federal and state listed protected species, upland and wetland vegetative communities within the project study area were evaluated and species composition within each community type was determined using published data and field reviews. A project study corridor was established to encompass a broad area of study, which includes all practical design alignments and pond sites for this project. The study corridor for C.R. 578 was based on the existing two-lane roadway with proposed widening improvements to a four-lane roadway to either side of C.R. 578. Because of the long linear nature of this roadway practical improvements are limited to a 600-ft (183.0 m) wide corridor centered on the centerline of the existing roadway. The Ayers Road Extension study corridor was based on a starting location east of the Suncoast Parkway at C.R. 578 and ending at Ayers Road and U.S. 41.

The following published information was collected and analyzed:

- U.S. Department of Agricultural, Natural Resources Conservation Service (NRCS), Pasco County Soil Survey 1985.
- U.S. Department of Agricultural, Natural Resources Conservation Service (NRCS), Hernando County Soil Survey 1977.
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory Maps (NWI); Aripeka, Port Richey NE, Masaryktown.
- U.S. Geological Survey 7.5 Minute Series Quadrangle Maps, Aripeka, Port Richey NE, and Masaryktown maps.
- Aerial Photographs of the Project Area at 1 inch (in) to 200 ft scale.

Using the above referenced information, the approximate boundaries of upland and wetland communities were mapped on black and white aerials, 1 in to 200 ft (1:2400) scale. Each community type was then classified using the Florida Department of Transportation Florida Land Use, Cover and Forms Classification System (FLUCFCS) (FDOT 1999) and the U.S. Fish and Wildlife Service (USFWS) Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et.al. 1979). A copy of the vegetative communities map is provided in Appendix A.

On October 18, 19, and 20, 1999 a field review of the study area was conducted by a project biologist familiar with Florida community types. The purpose of the review was to verify and/or refine preliminary community type boundaries and FLUCFCS/USFWS classification codes established through in office literature reviews and photo interpretation. During field investigations the perimeter of each wetland community type within the project study corridor was walked and visually inspected. Pedestrian transects were conducted through all upland community types within the project study corridor.

## **4.1 UPLAND COMMUNITIES**

Nine (9) upland vegetative communities were identified within the study corridor. A description of each of these upland habitat types is provided below.

### **Xeric Oak**

#### **FLUCFCS - 421**

Xeric oak was the dominant habitat type identified within the project study corridor. The vegetation associated with these xeric oak habitats consist of a sparse open canopy made up of the following tree species: blue jack oak (*Quercus incana*), turkey oak (*Quercus laevis*), sand live oak (*Quercus geminata*), live oak (*Quercus virginiana*), longleaf pine (*Pinus palustris*), and persimmons (*Diospyros virginiana*). The understory was composed of saw palmetto (*Serenoa repens*), beauty berry (*Callicarpa americana*), wire grass (*Aristida stricta*), gopher apple (*Licania michauxii*), and several pioneering species such as dog fennel (*Eupatorium capillifolium*) and broomsedge (*Andropogon* spp.). Xeric oak habitats were identified on both sides, north and south, of C.R. 578 between U.S. 19 and the Suncoast Parkway. The xeric habitats within the project study corridor are isolated pockets less than 5 acres (ac) (2.03 hectares (ha)) in size. Most areas of xeric habitat are narrow bands separating residential and commercial developments from C.R. 578. A large number of gopher tortoises were observed utilizing this habitat.

### **Improved Pasture**

#### **FLUCFCS - 211**

Improved pasture is found in locations along the entire project study corridor. Vegetation associated with these improved pastures consists mainly of bahia grass (*Paspalum notatum*) with scattered islands of live oak trees. The improved pasture areas within the Ayers Road Extension project study corridor contain a significant population of historic live oak trees. The historic live oak trees are located west of Jackson Street and north of Palacky Street.

### **Longleaf Pine - Xeric Oak**

#### **FLUCFCS - 412**

Longleaf pine - xeric oak habitat was identified at two locations within the project study corridor. The first location is on the north side of C.R. 578 just east of Linden Drive. The second location is also on the north side of C.R. 578 and is found on both the east and west sides of Sparks Road. Typical vegetation associated with this habitat includes longleaf pine, sand pine (*Pinus clausa*), and live oak.

### **Pine - Mesic Oak**

#### **FLUCFCS - 414**

The pine - mesic oak habitat was identified at one location within the project study corridor. This habitat was identified on the north side of CR 578 approximately 1,000 ft (305m) east of Sparks Road and continuing east to Anderson Snow Road. The typical vegetation associated with this habitat consists of sand pine, longleaf pine, live oak, laurel oak (*Quercus laurifolia*), black cherry (*Prunus serotina*), and wax myrtle (*Myrica cerifera*). This habitat encompasses a large single tract of land in a relatively undisturbed condition with the exception of an old borrow pit located near C.R. 578 and west of the Suncoast Parkway construction limits.

**Live Oak  
FLUCFCS - 427**

Live oak hammock habitat was identified east of Anderson Snow Road and on the north side of C.R. 578. Live oak habitat encompasses the majority of all natural habitats within the Ayers Road Extension study corridor. The vegetation associated with live oak habitat is composed primarily of live oak trees. Other common trees include laurel oak, southern magnolia (*Magnolia grandiflora*), longleaf pine, southern red cedar (*Juniper silicicola*), and dahoont holly (*Ilex cassine*). A large number of gopher tortoises were observed utilizing this habitat.

**Pine Flatwoods  
FLUCFCS - 411**

Pine flatwoods habitat was identified in one location in the study area, south of C.R. 578, west of the Suncoast Parkway. Vegetation associated with pine flatwoods is longleaf pine, slash pine (*Pinus elliottii*), saw palmetto, and gallberry (*Ilex glabra*).

**Coniferous Plantation  
FLUCFCS - 441**

These pine forests are almost exclusively artificially generated by planting seedling stock or seeds and are characterized by high numbers of trees per acre and uniform appearance. Two areas of planted pine were identified in the study corridor. The first is south of C.R. 578 east of Grand Club Drive. The second is north of C.R. 578 east of the Suncoast Parkway.

**Citrus Groves  
FLUCFCS - 221**

One citrus grove was located within the project study corridor. This grove is located within the Ayers Road Extension study corridor approximately 2,000 ft (610m) southwest of Palacky Street. This citrus grove appears to be no longer in production.

**Open Land  
FLUCFCS - 191**

Open lands were common throughout much of the project study corridor. Open lands within the project study corridor consist of relatively small tracts of land in urban areas and are surrounded by development. Open lands typically do not have any structures or any indication of intended use. The open lands identified within the project study corridor consist primarily of disturbed xeric habitats in a transitional state. Many of the open lands are mowed regularly and exist only as small tracts of land between residential developments and C.R. 578. A large number of gopher tortoises were observed utilizing this habitat.

## **4.2 WETLAND COMMUNITIES**

Twelve (12) wetlands consisting of three wetland community types were identified within the study corridor. Descriptions of each of these wetland habitat types are provided below.

### **Open Water Lake or Pond**

**FLUCFCS - 522, 523, and 524 (Lakes) and 534 (Reservoir)**

**USFWS - PUB/SS/EMFx (Palustrine, Unconsolidated Bottom, Scrub-Shrub and Emergent, Semi-Permanently Flooded, Excavated)**

The lake and pond community type was the most common wetland type identified within the study corridor. Eight of the twelve wetlands identified are this community type (Wetlands 1, 2, 4, 5, 6, 8, 11, and 12). All the natural systems identified have been greatly influenced by residential and commercial development. The placement of retaining walls, dredged channels, and natural slope filling are the most evident disturbances. Fluctuating water levels were observed at all the lake and pond systems within the study corridor.

### **Marsh Wetland**

**FLUCFCS - 641 (Freshwater Marsh)**

**USFWS - PUB/EMFx (Palustrine, Unconsolidated Bottom and Emergent Vegetation, Semi-Permanently Flooded, Excavated)**

The marsh wetland community was the second most common wetland community type identified within the study corridor. This wetland type was found in Wetlands 3, 7, and 10. Herbaceous species commonly found in this community include cattail, soft rush, torpedo grass, maidencane, broomsedge (*Andropogon* spp.), and dog fennel (*Eupatorium capillifolium*).

### **Forested Wetland**

**FLUCFCS - 610 (Wetland Hardwood Forest)**

**USFWS - PFO1C (Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded)**

The forested wetland community was the least identified wetland community type within the project study corridor. Only one forested wetland (Wetland 9) was found to exist within the project study corridor. Carolina willow (*Salix caroliniana*) and persimmon (*Diospuros virginiana*) are the dominant vegetation found in this wetland with large live oak (*Quercus virginiana*) trees, greater than 36 in (91.4 centimeters (cm)), on the side slopes surrounding the wetland. Wetland 9 is located adjacent to the south side of C.R. 578 approximately 500 ft (152m) west of Shady Hills Road.

## ***Section 5.0***

# ***PROTECTED SPECIES***

---

In accordance with Section 7 of the Endangered Species Act of 1973 (as amended) and Chapter 68 of the Florida Administrative Code, the project study area was evaluated for the potential occurrences of federal and state listed protected plant and animal species. Literature searches and a habitat field review were conducted to identify protected species and any critical habitat that might be expected to occur within the study area. The reviews and database searches included the following:

- U.S. Fish and Wildlife Service, February 1996, *Endangered and Threatened Wildlife and Plants*, 50 CFR 17.11 and 17.12 (Pasco and Hernando Counties);
- Florida Fish and Wildlife Conservation Commission, August 1, 1997, Florida's Endangered Species, Threatened Species, and Species of Special Concern, Official Lists; and
- Rules for the Department of Agriculture and Consumer Services, Division of Plant Industry, Chapter 5B-40, Preservation of Native Flora of Florida.

Coordination was also conducted with the U.S. Fish and Wildlife Service (USFWS), the Florida Fish and Wildlife Conservation Commission (FFWCC), and the Pasco County Department of Development Services. Letters were sent to USFWS and FFWCC requesting information regarding location of, or the potential for, protected species within a 1mile vicinity of the C.R. 578 project study corridor. A meeting was conducted with Pasco County Department of Development Services representative Don Robinson, Pasco Biologist, to document known occurrences and locations of protected species within the C.R. 578 study corridor. Copies of letters, phone calls and meeting notes with above mentioned agencies are provided in Appendix B.

### **5.1 FIELD INVESTIGATIONS**

Field reviews of the study corridor were conducted by a project biologist on October 18, 19, and 20 of 1999. Field reviews consisted of cursory pedestrian transects throughout most of the project study corridor. All improvements are within or adjacent to the existing ROW which allowed good access and good observing conditions for locating and identifying flora and fauna.

## **5.2 PROTECTED SPECIES EVALUATION RESULTS**

Responses to agency information requests have been received from USFWS and FFWCC. The USFWS directed us to the USFWS Jacksonville, Florida field office website, which provided a list of protected animal and plant species known to occur within Pasco and Hernando Counties. The USFWS list is for county wide occurrences and is not specific to the C.R. 578 project study corridor. FFWCC responded indicating that an active bald eagle's nest is located within one mile of the project area. The nest is located to the northwest of the U.S. 19/C.R. 578 intersection. A meeting was with the Pasco County Biologist provided a more site specific species listing.

The protected species listed in Table 5-1 were compiled from information obtained from the various sources mentioned above and on-site field investigations. The table provides the USFWS, FFWCC, and/or Florida Department of Agriculture and Consumer Services (FDA) protection status for each species. The probability of occurrence within the project limits is shown within the table as High, Moderate, or Low and is based on the habitat requirements for each species and the presence of the habitat within the proposed roadway construction limits. A Low listing indicates that no preferred habitat for that species was found to exist within the study area. A Moderate listing indicates that suitable habitat exists within the study area. A High listing indicated that suitable habitat exists and the species was observed during field reviews or documented in the above-referenced database as being located within the study area.

### **5.2.1 PLANTS**

#### **Brittle maidenhair fern (*Adiantum tenerum*)**

The brittle maidenhair fern is found in limestone sinkholes and rocky hammocks. The probability of occurrence is low due to the absence of available habitat within the project study corridor.

#### **Curtiss' milkweed (*Asclepias curtissii*)**

Curtiss' milkweed grows in scrub areas having leached, excessively well drained, white sands. The probability of occurrence is low due to the absence of available habitat within the project study corridor.

#### **Auricled spleenwort (*Asplenium auritum*)**

Auricled spleenwort is found nearly exclusively on the inclined trunks of large live oak trees in hammocks. Historically, it is known to occur at a location in Sumter County, an area along the Hillsborough River near the Pasco/Hillsborough County line, and Collier County. At present time, it is only believed to persist in South Florida. It has a low probability of occurrence due to the limited geographic distribution and absence of available habitat within the project study corridor.

**TABLE 5-1**  
**PROTECTED SPECIES POTENTIALLY OCCURRING WITHIN THE PROJECT STUDY CORRIDOR**

Scientific Name	Common Name	Habitat Preference	Habitat Presence	USFWS Designation	FFWCC/FDA Designation	Probability of Occurrence
<b>Plants</b>						
<i>Adiantum tenerum</i>	Brittle maidenhair fern	Limestone sinkholes and rocky hammocks	No	NL	E	Low
<i>Asclepias curtissii</i>	Curtiss' milkweed	Scrub	No	NL	E	Low
<i>Asplenium auritum</i>	Auricled spleenwort	Wet hammocks and swamps	No	NL	E	Low
<i>Asplenium pumilum</i>	Dwarf spleenwort	Limestone and rocks in moist hammocks	No	NL	E	Low
<i>Blechnum occidentale</i>	Sinkhole fern	Deep shaded ravines and moist and dense hammocks	No	NL	E	Low
<i>Campanula robbinsiae</i>	Brooksville bellflower	Brooksville Ridge Seepage Slope	No	E	E	Low
<i>Chamaesyce cumulicola</i>	Sand-dune spurge	Dunes and scrub	No	NL	E	Low
<i>Glandularia tampensis</i>	Tampa vervain	Clearings in moist hammocks	No	NL	E	Low
<i>Justicia cooleyi</i>	Cooley's Water-willow	Brooksville Ridge Seepage Slope	No	E	E	Low
<i>Lechea cernua</i>	Nodding pinweed	Scrub	No	NL	T	Low
<i>Lechea divaricata</i>	Pine pinweed	Flatwoods	No	NL	E	Low
<i>Malaxis unifolia</i>	Green adder's-mouth	Partial shade of second-growth mixed oak-pine woods	No	NL	E	Low
<i>Matelea floridana</i>	Florida milkvine	Hammocks	No	NL	E	Low
<i>Monotropis reynoldsiae</i>	Pigmy pipes	Root parasite on Flowering Dogwood	No	NL	E	Low
<i>Nolina brittoniana</i>	Britton's beargrass	Xeric Pine	Yes	E	E	Low
<i>Pteroglossaspis ecrystata</i>	Wild coco	Sandhills, pinelands, oak hammocks	No	NL	T	Low
<i>Spiranthes elata</i>	Tall neottia	Moist, rocky hammocks	No	NL	E	Low
<i>Thelypteris reptans</i>	Creeping fern	Hammocks around limestone sinkholes	No	NL	E	Low

**TABLE 5.1 (Continued)**  
**PROTECTED SPECIES POTENTIALLY OCCURRING WITHIN THE PROJECT STUDY CORRIDOR**

Scientific Name	Common Name	Habitat Preference	Habitat Presence	USFWS Designation	FFWCC/FDA Designation	Probability of Occurrence
<i>Triphora craigheadii</i>	Craighead's nodding caps	Hammocks	No	NL	E	Low
<i>Triphora latifolia</i>	Broad-leaved nodding caps	Hardwood hammocks	No	NL	E	Low
<b>Amphibians</b>						
<i>Rana capito</i>	Gopher frog	Xeric Habitats	Yes	NL	SSC	Moderate
<b>Reptiles</b>						
<i>Alligator mississippiensis</i>	American alligator	Wetland habitats	Yes	T(S/A)	SSC	Moderate
<i>Drymarchon corais couperi</i>	Eastern indigo snake	Various habitats, gopher tortoise burrows	Yes	T	T	Moderate
<i>Gopherus polyphemus</i>	Gopher tortoise	Xeric Habitats	Yes	NL	SSC	High
<i>Pituophis melanoleucus mugitus</i>	Florida pine snake	Xeric Habitats	Yes	NL	SSC	Moderate
<i>Pseudemys concinna suwanniensis</i>	Suwannee cooter	Rivers and springs	No	NL	SSC	Low
<i>Stilosoma extenuatum</i>	Short-tailed snake	Longleaf Pine, Turkey Oak	Yes	NL	T	Low
<b>Birds</b>						
<i>Aphelocoma coerulescens</i>	Florida scrub-jay	Sand pine scrub and coastal strand	Yes	T	T	Moderate
<i>Aramus guarauna</i>	Limpkin	Slow-moving freshwater rivers and streams, marshes, and lake shores	Yes	NL	SSC	Moderate
<i>Egretta caerulea</i>	Little blue heron	Coastal marshes, freshwater marshes, wet prairies, Mangrove swamps, open water, and sand, mud flats	Yes	NL	SSC	Moderate
<i>Egretta thula</i>	Snowy egret	Coastal marshes, freshwater marshes, wet prairies, Mangrove swamps, open water, and sand, mud flats	Yes	NL	SSC	Moderate
<i>Egretta tricolor</i>	Tricolored heron	Coastal marshes, freshwater marshes, wet prairies, Mangrove swamps, open water, and sand, mud flats	Yes	NL	SSC	Low

**TABLE 5.1 (Continued)**  
**PROTECTED SPECIES POTENTIALLY OCCURRING WITHIN THE PROJECT STUDY CORRIDOR**

Scientific Name	Common Name	Habitat Preference	Habitat Presence	USFWS Designation	FFWCC/FDA Designation	Probability of Occurrence
<i>Eudocimus albus</i>	White ibis	Coastal marshes, freshwater marshes, wet prairies, Mangrove swamps, open water, and sand, mud flats	Yes	NL	SSC	Moderate
<i>Falco peregrinus</i>	Peregrine falcon	Open terrain-coastal barrier islands, lake and river margins, coastal ponds and sloughs	Yes	NL	E	Low
<i>Falco sparverius paulus</i>	American kestrel	Open Habitats, dry prairies, pine flatwoods	Yes	NL	T	Moderate
<i>Grus canadensis pratensis</i>	Florida sandhill crane	Dry prairies, freshwater marshes, and wet prairies	Yes	NL	T	High
<i>Haliaeetus leucocephalus</i>	Bald eagle	Pine flatwoods, Coastal wetlands, lakes, rivers	Yes	T	T	Moderate
<i>Mycteria americana</i>	Wood stork	Coastal marshes, freshwater marshes, wet prairies, cypress swamps, hardwood swamps, and mangrove swamps	Yes	E	E	Low
<i>Picoides borealis</i>	Red cockaded woodpecker	Frequently burned pine flatwoods, longleaf pin-oaks, and mixed hardwood pine	No	E	T	Low
<i>Speotyto cunicularia</i>	Burrowing owl	Dry prairies, open grassland	Yes	NL	SSC	Moderate
<b>Mammals</b>						
<i>Podomys floridanus</i>	Florida mouse	Sand pine and xeric oak	Yes	NL	SSC	Moderate
<i>Sciurus niger shermani</i>	Sherman's fox squirrel	Longleaf pine and turkey oak	Yes	NL	SSC	High
<i>Ursus americanus</i>	Florida black bear	Dense swamps and forests	No	NL	T	Low

USFWS = U.S. Fish and Wildlife Service

T = Threatened

FFWCC = Florida Fish and Wildlife Conservation Commission

E = Endangered

FDA = Florida Department of Agriculture and Consumer Services

SSC = Species of Special Concern

(S/A) = Listed due to similarity of appearance to a listed species

NL = Not Listed

**Dwarf spleenwort (*Asplenium pumilum*)**

Dwarf spleenwort is found on limestone or other calcareous rocks in moist hammocks. It is known to occur in five locations in Florida: one each in Hernando, Citrus, and Alachua counties and two in Citrus County. It has a low probability of occurrence due to the limited geographic distribution and absence of available habitat within the project study corridor.

**Sinkhole fern (*Blechnum occidentale*)**

Sinkhole fern is found in deep-shaded ravines or elsewhere in moist and dense hammocks. It also occurs occasionally on the sheer rock walls of deep sinkholes. In Florida, it is known to occur in near Brooksville, Hernando County, and in two locations in Alachua County. It has a low probability of occurrence due to the limited geographic distribution and absence of available habitat within the project study corridor.

**Brooksville bellflower (*Campanula robinsiae*)**

The Brooksville bellflower is found in wet prairies and along the edges of ponds near pastureland. There are only three known populations of the Brooksville bellflower and all are found on Chinsegut Hill in northern Hernando County. The Brooksville bellflower has a low probability of occurrence due to the limited geographic distribution and absence of available habitat within the project study corridor.

**Sand-dune spurge (*Chamaesyce cumulicola*)**

Sand-dune spurge is found in dunes and scrub habitat. The probability of occurrence is low due to the absence of available habitat within the project study corridor.

**Tampa vervain (*Glandularia tampensis*)**

Tampa vervain is found in clearings in moist hammocks. The probability of occurrence is low due to the absence of available habitat within the project study corridor.

**Cooley's water-willow (*Justicia cooleyi*)**

Cooley's water-willow inhabits hardwood forest on uplands or hills. It can sometimes be found on low rises in wet hammocks or swamps and is endemic to the Brooksville Ridge. The probability of occurrence is low for the Cooley's water-willow due to the limited geographic distribution and absence of available habitat within the project study corridor.

**Nodding pinweed (*Lechea cernua*)**

Nodding pinweed is found in scrub habitats. The probability of occurrence is low due to the absence of available habitat within the project study corridor.

**Pine pinweed (*Lechea divaricata*)**

Pine pinweed is found in flatwoods habitats. The probability of occurrence is low due to the absence of available habitat within the project study corridor.

**Green Adder's-mouth (*Malaxis unifolia*)**

Green adder's-mouth is found in the partial shade of second-growth mixed oak-pine woods. In Florida, it is known to occur mostly in the panhandle, but also found in locations in Alachua and Hernando counties. It has a low probability of occurrence due to the limited geographic distribution and absence of available habitat within the project study corridor.

**Florida milkweed (*Matelea floridana*)**

Florida milkweed is found in hammocks. The probability of occurrence is low due to the absence of available habitat within the project study corridor.

**Pigmy pipes (*Monotropsis reynoldsiae*)**

Pigmy pipes are root parasites on flowering dogwood and possibly other trees in mixed and deciduous woods. It is known to occur only in a few locations, one of which is the Withlacoochee State Forest in Hernando County. It has a low probability of occurrence due to the limited geographic distribution and absence of available habitat within the project study corridor.

**Britton's beargrass (*Nolina brittoniana*)**

Britton's beargrass inhabits scrub, high pine habitats, and occasionally can be found in hammocks. The range of Britton's beargrass is from the south end of Lake Wales Ridge in Highlands County north to Orange County and northern Lake County. An isolated population has been reported to occur in Hernando County. The probability of occurrence is low for Britton's beargrass due to the limited geographic distribution and absence of available habitat within the project study corridor.

**Wild coco (*Pteroglossaspis ecristata*)**

Wild coco is found in sandhills, pinelands, and oak hammocks. The probability of occurrence is low due to the absence of available habitat within the project study corridor.

**Tall neottia (*Spiranthes elata*)**

Tall neottia is found in moist, rock hammocks. The probability of occurrence is low due to the absence of available habitat within the project study corridor.

**Creeping fern (*Thelypteris reptans*)**

Creeping fern is found in hammocks around limestone sinkholes. The probability of occurrence is low due to the absence of available habitat within the project study corridor.

**Craighead's nodding-caps (*Triphora craigheadii*)**

Craighead's nodding-cap is found in hammocks. The probability of occurrence is low due to the absence of available habitat within the project study corridor.

**Broad-leaved nodding-caps (*Triphora latifolia*)**

Broad-leaved nodding-cap is found in hardwood hammocks. The probability of occurrence is low due to the absence of available habitat within the project study corridor.

## **5.2.2 AMPHIBIANS**

### **Gopher frog (*Rana capito*)**

The gopher frog lives in dry xeric habitats and is often found in association with gopher tortoise burrows. The probability that gopher frogs could be found in the project area is moderate due to the presence of gopher tortoise burrows in the project area.

## **5.2.3 REPTILES**

### **American alligator (*Alligator mississippiensis*)**

The American alligator utilizes river swamps, lakes, marshes, bayous and other open wetland habitats. No American alligators were observed during the field reviews. The American alligator has a moderate probability of occurrence for the project study corridor due to the available habitat. No adverse impacts to the American alligator are expected as a result of this project due to wetland impact avoidance and mitigation requirements.

### **Eastern indigo snake (*Drymarchon corais couperi*)**

The eastern indigo snake utilizes a wide variety of habitats ranging from mangrove swamps to xeric scrub communities. The eastern indigo snake prefers upland/wetland ecotone breaks for feeding, and often lives in association with gopher tortoise burrows, especially in the winter. The probability of occurrence for eastern indigo snake within the project study area is moderate due to the presence of gopher tortoise burrows and available habitat. Protective measures will be employed during construction to avoid any potential adverse impacts.

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

The gopher tortoise prefers dry, well-drained soils. Many xeric habitats are suitable for gopher tortoises including; sand pine scrub, xeric oak, and slash pine-turkey oak successional areas. Old fields and cleared areas near these xeric communities may also be utilized by the gopher tortoise. The probability of occurrence for the gopher tortoises is high. Gopher tortoises and their burrows were observed throughout the project study corridor including the location of several pond sites: Pond Site 2A, Pond Site 4B, Pond Site 6B, Pond Site 7A, Pond Site 8A, Pond Site 9B, Pond Site 10A, and Pond Site 11B (see Appendix A for habitat delineation). Impacts to gopher tortoises will require permitting through the FFWCC.

### **Florida pine snake (*Pituophis melanoleucus mugitus*)**

The Florida pine snake inhabits xeric upland communities and prefers dry, sandy, soils. The Florida pine snake can be found in association with gopher tortoise burrows. The probability of occurrence within the project study area is moderate due to the presence of gopher tortoise burrows and available habitat.

### **Suwannee cooter (*Pseudemys concinna suwanniensis*)**

The Suwannee cooter is found in rivers, spring runs, and associated backwaters and impoundments that drain into the Gulf of Mexico. The probability of occurrence within the project study area is low due to the lack of preferred habitat.

**Short-tailed snake (*Stilosoma extenuatum*)**

The short-tailed snake prefers longleaf pine-turkey oak habitats. The short-tailed snake appears to select Norfolk, Blanton fine sand, and St. Lucie soils. The short-tailed snake has a low probability of occurrence due to the absence of the preferred soil types.

**5.2.4            BIRDS****Florida scrub-jay (*Aphelocoma coerulescens*)**

The Florida scrub-jay primarily inhabits areas of xeric oak occurrence. Other habitats utilized by the Florida scrub-jay are sand pine scrub, xeric pines, and agricultural or residential lands where sufficient native oaks have been retained to support acorn caching. A historic Florida scrub-jay colony was reported by the Pasco County Biologist to have once occurred on the east side of U.S. 19 north of the project study corridor. No Florida scrub-jays were observed during the field reviews. The probability of occurrence for the Florida scrub-jay is moderate due to the historical use of habitat within 1 mi (1.6 km) of the project and the available habitat within the project study corridor.

**Limpkin (*Aramus guarauna*)**

The limpkin is associated with slow-moving freshwater rivers and streams. They may also be found in marshes and lake shores. The probability of occurrence of this species in the study area is moderate due to presence of preferred habitat.

**Little blue heron (*Egretta caerulea*)**

The little blue heron occurs in shallow freshwater, brackish, and saltwater habitats. Their nesting vegetation varies and includes bald cypress, Carolina willow, red maple, buttonbush, red mangrove, black mangrove, cabbage palm, and Brazilian pepper. The probability of occurrence of this species in the study area is moderate due to presence of preferred habitat.

**Snowy egret (*Egretta thula*)**

The snowy egret is widely distributed in both coastal and freshwater wetlands. Nests are often located in mangroves, willow, buttonbush, wax myrtle, and similar woody scrubs associated with aquatic habitats. They feed in shallow marshes, edges of swamps or ponds, flooded ditches, or stream banks. The probability of occurrence of this species in the study area is moderate due to presence of preferred habitat.

**Tricolored heron (*Egretta tricolor*)**

Tri-colored herons are common in estuarine habitats throughout Florida, nesting on islands or woody vegetation over standing water. The probability of occurrence of this species in the study area is low due to lack of preferred habitat.

**White ibis (*Eudocimus albus*)**

The white ibis is found in both estuarine and freshwater wetlands with feeding occurring in shallow waters. The species nests on islands in lakes, in marshes, or in mangroves. The probability of occurrence of this species in the study area is moderate due to presence of preferred habitat.

**Peregrine falcon (*Falco peregrinus*)**

The peregrine falcon requires an area with a large supply of birds for food and perches to roost on and feed from. Florida's coastal areas are the preferred habitat. There is low probability of occurrence that the peregrine falcon could be found within the project area due to lack of preferred habitat.

**American kestrel (*Falco sparverius paulus*)**

The American kestrel utilizes open habitats for foraging and nests in tree cavities. Open pine forest, pasture, and river bottom edges are the preferred habitat types. No American kestrels were observed during the field reviews, and none are expected to be adversely impacted as a result of this project. The probability of occurrence for the American kestrel is moderate due to the presence of preferred habitat in the study area.

**Florida sandhill crane (*Grus canadensis pratensis*)**

The Florida sandhill crane prefers wet prairies, marshy lake margins, and low-lying pastures. Hunter's Lake is reported to be utilized by Florida sandhill cranes. Florida sandhill cranes have been observed along the study corridor, in particular in the pastures along the proposed Ayers Road Alignments. It is unlikely that any significant impact would occur to the Florida sandhill crane as a result of this project due to wetland impact avoidance and mitigation requirements. The probability of occurrence of this species in the study area is high due to presence of this species within the study area.

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

The bald eagle is usually found near large open water habitats such as rivers, lakes and the coast. The bald eagle normally nests in large pine trees near water bodies that can provide a dependable food source. The location and activity of bald eagle nest site throughout the state are closely monitored by FFWCC. The nearest known bald eagle nest site (Nest Number HN 14) is located west of U.S. 19 in Aripeka, approximately 1.1 mi (1.8 km) west of the project study corridor in Section 36, Township 23 South, Range 16E, Hernando County. The probability of occurrence of this species in the study area is moderate.

**Wood stork (*Mycteria americana*)**

The wood stork prefers pristine swamp lands nesting in cypress and mangrove swamps. Wood storks may also utilize fresh water marshes, flooded pastures, and roadside ditches for feeding. No wood storks were observed during the field reviews. Roadside ditches found along the project study corridor percolate water to rapidly to provide feeding areas for the wood stork. Due to the lack of suitable habitat there is a low probability of occurrence for the wood stork.

**Red cockaded woodpecker (*Picoides borealis*)**

Red cockaded woodpeckers require mature pine flatwoods that are subject to frequent burning. There is a low probability that this species could be found in the study area due to absence of preferred habitat.

**Burrowing owl (*Speotyto cunicularia*)**

The burrowing owl prefers high open sandy ground with little vegetation present. Open habitats such as prairies and unimproved pastures are preferred. The Pasco County Biologist identified the area on the north side of C.R. 578 and east of Waterfall Road as a historical nesting area for the burrowing owl. No burrowing owls were identified during the field reviews. The probability of occurrence for the burrowing owl is moderate due the historical presence and available habitat within the project study corridor. Since most of the project will take place within the existing ROW, no significant adverse impacts are expected to occur to the burrowing owl population.

**5.2.5 MAMMALS****Florida mouse (*Podomys floridanus*)**

The Florida mouse has extremely narrow habitat requirements. Its primary habitat is sand pine scrub in an early successional stage. It also occurs in longleaf/pine oak and scrubby flatwood associations. These mice are primarily ground dwellers and typically live in burrows, particularly gopher tortoise burrows. The probability that it could be found in the project area is moderate due to the presence of gopher tortoise burrows in the project area.

**Sherman's fox squirrel (*Sciurus niger shermani*)**

Sherman's fox squirrel inhabits primarily longleaf pine, turkey oak and sand hills. Sherman's fox squirrel can also be found in the following habitats within the Tampa Bay area, unimproved pastures, pine flatwoods, mixed hardwoods, and mixed wetland forest. Individuals and nests have been observed at several locations in the study corridor including at Heritage Pines, near Shelby Avenue, and near Linden Drive (see Appendix A for habitat delineation). The probability for occurrence of the Sherman's fox squirrel is high due to the presence of observed individuals and suitable habitat within the corridor.

**Florida black bear (*Ursus americanus*)**

The black bear is a forest habitat generalist with seasonal preference for wherever food is most available. Reported bear sightings have been documented in the coastal forest areas near Aripeka at the southwest corner of Pasco County. A major highway, U.S. 19, and mixed-use development separates the project study corridor from the closest possible black bear habitat. Due to the urban border formed by U.S. 19 and existing development, it is unlikely that the Aripeka black bear population would be affected by this project. The probability of occurrence of the black bear is low due to the lack of available habitat.

**5.3 PROTECTED SPECIES CONCLUSIONS**

Evidence of three (3) protected species was observed within the C.R. 578 study area. Numerous gopher tortoises and burrows were observed and this species was given a high probability of occurrence. Impacts to the gopher tortoises and their habitats will require permitting through the FFWCC. Several other species are known commensals that live in gopher tortoise burrows and are in close association with them. These species include the gopher frog, Eastern indigo snake, Florida mouse, and Florida pine snake. The probability of occurrence of these species within the project study area is moderate due to the presence of gopher tortoise burrows and available

habitat. The moderate probability of occurrence of the Eastern indigo snake may require precautions to be taken during construction (Appendix C) and consultation with USFWS.

Florida sandhill cranes are reported to utilize Hunter's Lake in the project study area and were observed within the study corridor. The Florida sandhill crane has a high probability of occurrence within the project study corridor. It is unlikely that any significant impact would occur to the Florida sandhill crane as a result of this project due to wetland impact avoidance and mitigation requirements.

Sherman's fox squirrels have been observed in several locations along the study corridor and this species was given a high probability of occurrence. Coordination with FFWCC will be required during permitting and construction to minimize the effect of the project on Sherman's fox squirrels.

Small areas of preferred habitat for several species of birds are present within the project study area. The bird species include the limpkin, little blue heron, snowy egret, white ibis, and American kestrel. These species are not listed by the USFWS but are listed as Species of Special Concern or Threatened by FFWCC. However, no impacts to these species are anticipated due to minimal impacts to habitats utilized by these species.

The American alligator has a moderate probability of occurrence for the project study corridor due to the available habitat. However, no adverse impacts to the American alligator are expected as a result of this project due to wetland impact avoidance and mitigation requirements.

The Florida scrub-jay has a moderate probability of occurrence for the project study corridor due to a historic colony was reported to have once occurred on the east side of U.S 19 north of the project study corridor. However, no Florida scrub-jays were observed during the field reviews and no impacts are anticipated as a result of this project.

The bald eagle has a moderate probability of occurrence for the project study corridor due a known bald eagle nest located west of U.S. 19 in Aripeka, approximately 1.1 mi (1.8 km) west of the project study corridor. However, no impacts are anticipated due to its proximity to the project area.

The probability of occurrence for the burrowing owl within the study corridor is moderate due the historical presence and available habitat within the project study corridor. An area on the north side of C.R. 578 and east of Waterfall Road has been identified as a historical nesting area for the burrowing owl. However, no burrowing owls were identified during the field reviews. Since most of the project will take place within the existing ROW, no significant adverse impacts are expected to occur to the burrowing owl population.

Based on the review of the protected species contained within the various information sources listed above, it was determined that the C.R. 578 study area does not contain suitable habitat for any of the remaining animal or protected plant species known to occur within Pasco and Hernando Counties. Because of this, all of the remaining animal and plant species found within Table 5-1 was given low probability rankings for occurrence.

The project corridor is bordered on the east and west by two major roadways (U.S. 41 and U.S. 19) with the area in between consisting of residential communities, commercial retail, and agricultural pastures in private ownership. As a result of the development and agricultural activities, no natural wildlife corridors are present in the study area. Furthermore, with the construction of the Suncoast Parkway, development possibilities for the privately owned agricultural lands increase. Based on the present and future development of the area and lack of existing wildlife corridors, wildlife crossings do not appear to provide any benefit and are not suitable for the species that may be affected by the proposed project.

Based on the above considerations, and with the inclusion of Eastern Indigo Snake provisions, the proposed project should have no effect on any Federally listed Threatened and Endangered species.

## **5.4 COMMITMENTS**

The following commitments are being made:

- Prior to construction, the project area will be resurveyed for gopher tortoises, FFWCC will be consulted, and the appropriate permit will be obtained.
- During construction, precautions will be implemented to protect Eastern Indigo Snakes.
- During the final design, permitting, and construction, efforts will be made to minimize the effects of the project on Sherman's fox squirrels.

## **Section 6.0**

# **REFERENCES**

---

- Conant, R. and J.T. Collins. 1991. *A Field Guide to Reptiles and Amphibians of Eastern and Central North America*. Houghton Mifflin Company, Boston, Mass. 450 pp.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services. Technical Publication FWS/OBS-79/31. 131 pp.
- Florida Department of Transportation. 1999. *Florida Land Use, Cover and Forms Classification System*. Third Edition. 91 pp.
- Humphrey, S.R. (editor). 1992. *Rare and Endangered Biota of Florida, Volume I - Mammals*. University Press of Florida, Gainesville, Florida. 392 pp.
- Kale, II, H.W. (editor). 1978. *Rare and Endangered Biota of Florida, Volume Two - Birds*. University Press of Florida, Gainesville, Florida. 121 pp.
- Layne, J.N. (editor). 1978. *Rare and Endangered Biota of Florida, Volume One - Mammals*. University Press of Florida, Gainesville, Florida. 52 pp.
- McDiarmid, R.W. (editor). 1978. *Rare and Endangered Biota of Florida, Volume Three - Amphibians and Reptiles*. University Press of Florida, Gainesville, Florida. 74 pp.
- Moler, P.E. (editor). 1992. *Rare and Endangered Biota of Florida, Volume III - Amphibians and Reptiles*. University Press of Florida, Gainesville, Florida. 291 pp.
- Pasco County Metropolitan Planning Organizations (MPOs) 2020 Long Range Transportation Plan*; Hernando County.
- Pasco County Metropolitan Planning Organizations (MPOs) 2020 Long Range Transportation Plan*; Pasco County.
- Peterson, R.T. and V.M. Peterson. 1980. *A Field Guide to the Birds of Eastern and Central North America*. Houghton Mifflin Company, Boston, Mass. 384 pp.
- Ward, D.B. (editor). 1978. *Rare and Endangered Biota of Florida, Volume Five - Plants*. University Press of Florida, Gainesville, Florida. 175 pp.
- Wunderlin, R.P. 1998. *Guide to the Vascular Plants of Florida*. University Press of Florida, Gainesville, Florida. 806 pp.

***APPENDIX A***  
***VEGETATIVE COMMUNITY***  
***AND HABITAT MAPS***

---

## FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (1999)

### 100 URBAN AND BUILT-UP

- 111 Fixed Single Family Units [Low Density (Less than two dwelling units per acre)]
- 121 Fixed Single Family Units [Medium Density (Two-five dwelling units per acre)]
- 132 Mobil Home Units (Six or more dwelling units per acre)
- 133 Multiple Dwelling Units, Low Rise (Two stories or less)
- 141 Retail Sales and Services
- 150 Industrial
- 172 Religious
- 174 Medical and Health Care
- 177 Other Institutional
- 182 Golf Courses
- 191 Undeveloped Land within Urban Areas

### 200 AGRICULTURE

- 211 Improved Pastures
- 221 Citrus Groves

### 400 URBAN FORESTS

- 411 Pine Flatwoods
- 412 Longleaf Pine – Xeric Oak
- 414 Pine – Mesic Oak
- 421 Xeric Oak
- 427 Live Oak
- 441 Coniferous Plantations

### 500 WATER

- 522 Lakes, larger than 100 acres (40 hectares) but less than 500 acres (202 hectares)
- 523 Lakes, larger than 10 acres (4 hectares) but less than 100 acres (40 hectares)
- 524 Lakes, less than 10 acres (4 hectares) which are dominant features
- 534 Reservoirs, less than 10 acres (4 hectares) which are dominant features

### 600 WETLANDS

- 610 Wetland Hardwood Forests
- 641 Freshwater Marshes

### 800 TRANSPORTATION, COMMUNICATION AND UTILITIES

- 812 Railroads
- 814 Roads and Highways
- 819 Transportation Facilities Under Construction
- 821 Transmission Towers

***APPENDIX B***  
***AGENCY CORRESPONDENCE***

---



# Florida Fish and Wildlife Conservation Commission

100-003876-xx  
FFWCC Laboratory

James L. "Jamie" Adams, Jr. Bushnell	Barbara C. Barsh Jacksonville	Patrick E. Geraghty Ft. Myers	Quinton L. Hedgepeth, DDS Miami	H.A. "Herky" Huffman Deltona
Thomas B. Kibler Lakeland	David K. Meehan St. Petersburg	Julie K. Morris Sarasota	Tony Moss Miami	Edwin P. Roberts, DC Pensacola

ALLAN L. EGBERT, Ph.D., Executive Director  
VICTOR J. HELLER, Assistant Executive Director

Wildlife Research Laboratory  
4005 South Main Street  
Gainesville, FL 32601-9099

(352) 955-2230, SC 625-2230  
Fax: (352) 376-5359

December 8, 1999

Mr. Dean C. Helton  
URS Greiner Woodward Clyde  
7650 West Courtney Campbell Causeway  
Tampa, FL 33607-1462

**Re: State Project 2572981  
Federal - Aide Program No. 7822 001 S  
County Road No. 578**

Dear Mr. Helton:

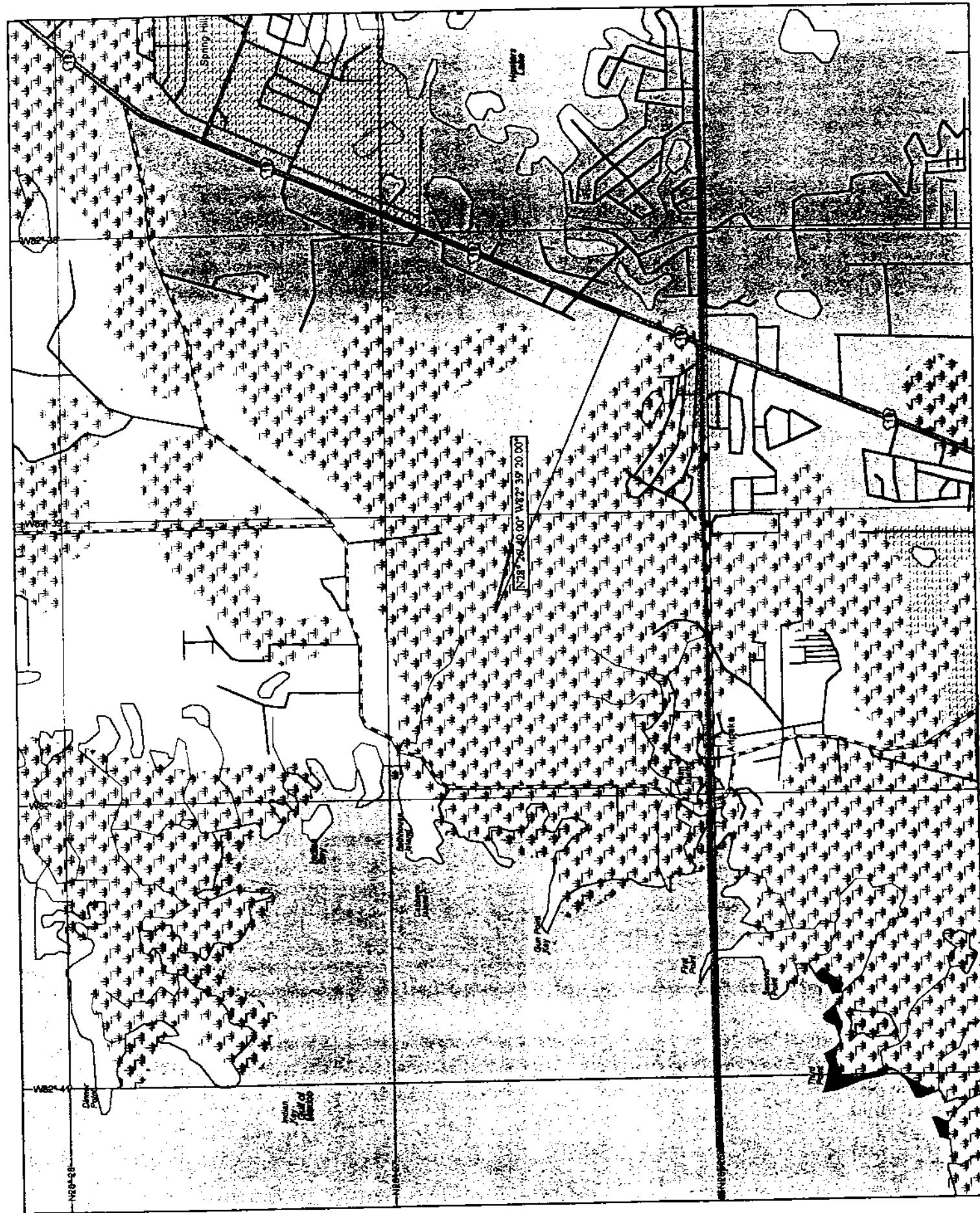
This is in reference to your request for bald eagle nest location information. There is one active nest within one mile of your project site. It is Nest Number HN 14 at latitude / longitude coordinates of  $28^{\circ} 26.40' / 82^{\circ} 39.20'$ . It has been active since 1997. I have enclosed a map detailing the location of the nest in relation to your project site.

This information represents only the general locations of bald eagle nests and nesting territories for which you have requested information. There may be additional nests in this area of which we are unaware. Such nests would be afforded the same protection. This information was obtained during routine aerial surveys, in most cases; consequently, the location information is only accurate to within  $\pm 0.10$  mile. The specific site of the nest must be determined from the ground, if a more precise location is required. Information provided by FFWCC does not confer access to the site, and active nests should not be approached during the nesting season (October 1 - May 15). Permission to trespass on private property should be obtained from the land owner.

If I can be of further assistance, please feel free to contact me at the above address and/or phone number. Thank you for your inquiry.

Sincerely,

Julia B. Dodge  
Enclosure (1)  
cc: Tom Logan, FFWCC  
ESC 6-1



**URS Greiner Woodward Clyde**

## **RECORD OF TELEPHONE CONVERSATION**

**DATE:** October 14, 1999

**RECORDED BY:** Dean C. Helton

**PARTICIPANTS:** Don Robinson Pasco County Government, Biological Tech.

**SUBJECT:** Threatened and Endangered Species Occurrence within the Area of County Line Road From US 19 to US 41

---

I notified Mr. Robinson of the current FDOT plan to study the widening of County Line Road and to develop a bypass around Masaryktown from Anerson Snow Road to Ayers Road.

Mr. Robinson stated the following Threatened and Endangered Species are known to occur or may occur within the limits of the project study area.

**Gopher tortoises** known to occur throughout the project area.

Species which may occur in association with the Gopher tortoise.

**Indigo Snake**

**Gopher Frog**

**Florida mouse**

**Fl. Pine Snake** known to occur south of County Line Road and west of Shady Hills Road.

**Short Tailed Snake**

**Burrowing owls** Have been reported to occur north of Shady Hills Rd. and Mariner, south of the traffic light to Waterfall, and approximately ½ mile from the Road ( by the put put course. Mr. Robinson said they move around quite a bit in that area and are often unable to be located. He also stated the area had been burned recently which might draw the owls into the area. Owls May be located in pasture areas near Masaryktown.

**Scrub Jay** Reported to occur near US 19 north of County Line Rd. to area near the car wash.

**Fl. Sand Hill Crane** Known to occur in the area north of County Line Rd. at Hunters Lake.

**SE Kestrel** may be in area along power lines.

**Fl. Black Bear** known to be in the Aripeka area west of US 19 at County Line Rd. May be in the area of US 41 and County Line Rd.

***APPENDIX C***  
***EASTERN INDIGO SNAKE***  
***CONSTRUCTION PRECAUTIONS***

---

### **Eastern Indigo Snake (*Drymarchon corais couperi*) Provisions**

The Eastern indigo snake frequents diverse habitats such as pine flatwoods, scrubby flatwoods, sand pine and xeric sandhill communities, orange groves, pasture land, and various types of wetlands; with a higher population concentration in sandhill/pineland regions in north and central Florida.

Given its extensive movements, the male Eastern indigo snake has a large home range encompassing as much as 553.0 acres (224 hectares) in the winter and 390.0 acres (158 hectares) in the summer months (Moler 1986).

In xeric habitats, this species is highly dependent on the activities of the gopher tortoise (*Gopherus polyphemus*). The Eastern indigo snake is highly susceptible to desiccation (Bogert and Cowles 1947). The gopher tortoise burrow provides a humid refuge during dry conditions and warmth during the winter months.

#### **Special Provisions:**

To minimize impacts to individual Eastern indigo snakes encountered during construction, a special provision will be included in the construction contract to advise the contractor of the potential presence of this species and its' protected status:

- \* If an Eastern indigo snake is sighted during construction, the contractor will be required to cease all operation(s) which may cause harm to the snake,
- \* If the snake does not move away from the construction area, the contractor will contact a state or federal biologist to capture and relocate the snake to suitable habitat, either adjacent to the project corridor or off site to an acceptable donor site,
- \* If an Eastern indigo snake is killed or found dead within the construction area, the snake should be frozen and the Jacksonville U.S. Fish and Wildlife Service Field Office (904) 232-2580 via the FDOT Project Development & Environment Department will be notified immediately at(813) 975-6457,
- \* In addition, educational signs with pictures shall be posted throughout the project prior to initiation of construction.

#### **Literature Cited**

Bogert, C. M. and R. B. Cowles, 1947. Moisture Loss in Relation to Habitat Selection in Some Florida Reptiles. American Museum Novitates 1358; 21-55.

Moler, P. E., 1986. Home Range and Seasonal Activity of the Eastern Indigo Snake, *Drymarchon corais couperi*, in North Florida. Final Performance Report, Study E-1-06, III-A-5 to FGFWFC, 17 pp..



---

***County Line Road (C.R. 578)  
Project Development and Environment Study***