Florida Natural Areas Inventory (FNAI), staff at the Wekiva River Basin State Parks, as well as the U.S. Fish and Wildlife Service (USFWS) and the Florida Fish and Wildlife Conservation Commission (FWC) on-line database. Information pertaining to protected species occurrence was reviewed. The FNAI, with funds from the FDEP, maintains a database of information on federal and state listed plant and animal species and their habitats.

Field activities consisted of vehicular and pedestrian surveys within and adjacent to the project study area conducted by study team biologists in:

- 2007 January
- 2006 March, May, and August
- 2005 March, April, May, and June
- 2004 April and May
- 2002 January, February, April, and June

Field observations and signs of wildlife were noted, such as tracks, burrows, dens, scat, nests, and calls. The wildlife observed during the field investigations of the wetlands and natural uplands along the study corridor included the following listed and non-listed species: Florida black bear, deer, feral pig, armadillo, eastern cottontail, raccoon, gray squirrel, Sherman's fox squirrel, bald eagle, burrowing owl, sandhill crane, little blue heron, great blue heron, great egret, red-shouldered hawk, wild turkey, Florida scrub jay, blue jay, white ibis, American crow, northern mockingbird, cardinal, turkey vulture, kingfisher, osprey, red-winged blackbird, catbird, green anole, brown anole, six-lined racerunner, black racer, rough green snake, coral snake, and alligator.

Other protected species have the potential to also occur within the study corridor, based on historical records, presence of suitable habitat, and known ranges. A project area-specific list of threatened and endangered wildlife and plant species identified as potentially present within the study corridor is provided in the updated final *Endangered Species Biological Assessment*. The results presented are a compilation of the literature review and of the field investigations. The approximate locations of the listed species occurrences within and near the project study area are presented in **Exhibit 4-18**. The bear roadkill data, obtained from FWC, are for the years 1980 to 2005.

Jurisdiction over listed species is shared among several federal and state agencies. Most federal listed wildlife species are protected under the auspices of the USFWS. The FWC maintains jurisdiction over most state-listed fish and wildlife species. Florida plants that are classified as threatened, endangered, or commercially exploited are listed by the Florida Department of Agricultural and Consumer Services (FDACS). The following information documents the potential impacts to identified threatened, endangered or species of special concern associated with the Proposed Build Alternative based on the information documented in the updated final *Endangered Species Biological Assessment*.

It should be noted that the conceptual design of the Proposed Build Alternative for Wekiva Parkway in Lake County East includes two long bridges between Seminole State Forest and Rock Springs Run State Reserve, and a longer, higher bridge over the Wekiva



Exhibit 4-18 Locations of Listed Wildlife and Plant Species Observed and /or Documented in the Project Study Area

River, to enhance wildlife habitat connectivity and greatly reduce the number of vehiclewildlife conflicts. Species-specific surveys will be conducted during the final design and permitting phase of the project, and permits will be obtained from the appropriate agencies should impacts to federally and/or state listed species be unavoidable.

#### 4.3.13.1 Federal Listed Species

Results of observations or occurrence records of federally listed endangered (E) or threatened (T) species within the project area are briefly reviewed below. This has been coordinated with the USFWS staff. Two project site visits have been conducted with USFWS staff. Based on the findings of database searches, field surveys, and regulatory agency coordination, the following project effects have been determined for the Proposed Build Alternative.

No direct adverse impacts to individuals or to regional populations of federally listed species or their habitat are anticipated as a result of the proposed roadway improvements.

- This project will not adversely affect the Florida Manatee (E), the Bald Eagle (T), the Crested Caracara (T), Osprey (not listed, but protected by Federal Migratory Bird Treaty Act), the Red-cockaded Woodpecker (E), or the Snail Kite (E).
- The project may affect, but is not likely to adversely affect, the Florida Scrub Jay (T), the Wood Stork (E), the Burrowing Owl (not listed, but protected by Federal Migratory Bird Treaty Act), the American Alligator (T), the Eastern Indigo Snake (T), or the Sand Skink (T).

On November 19, 2007, FDOT requested a USFWS letter of concurrence on the potential effects of the proposed project on federally listed species. In response, the USFWS provided a letter of concurrence dated January 15, 2008. Copies of the FDOT and USFWS letters are included in **Appendix F**. After review of information on the new Service Road concept in east Lake County, the USFWS indicated on May 10, 2010 that the revision was not a substantial modification with new effects, and reinitiation of consultation is not necessary. A copy of that communication is provided in **Appendix F**.

## 4.3.13.2 State Listed Species

Potential impacts to State-only listed species, including species of special concern (SSC), and their habitat have been coordinated with the FWC staff. This project will not adversely affect the Least Tern (T), Peregrine Falcon (E), Southeastern American Kestrel (T), Little Blue Heron (SSC), Tricolored Heron (SSC), Snowy Egret (SSC), White Ibis (SSC), or the Limpkin (SSC).

The project may affect, but is not likely to adversely affect, the Florida Black Bear (T), Sherman's Fox Squirrel (SSC), Florida Mouse (SSC), Burrowing Owl (SSC), Florida Sandhill Crane (T), Gopher Tortoise (T), Gopher Frog (SSC), Florida Pine Snake (SSC), or the Shorttailed Snake (T). In fact, the previously mentioned long bridges in the conservation areas should substantially reduce wildlife-vehicle conflicts, particularly for the Black Bear.

On March 4, 2008, FDOT requested a FWC letter of agreement on the potential effects of the proposed project on state listed species. In response, the FWC provided a letter of agreement dated May 5, 2008. FWC recommended a survey be conducted in the Wekiva River for a species of special concern, the bluenose shiner, to determine if it is present. Copies of the FDOT and FWC letters are included in **Appendix F**. The same information on the new Service Road concept in Lake County East that was sent to USFWS was also provided to the FWC staff in May 2010. In a letter dated July 1, 2010, FWC stated that they

do not foresee any new impacts to fish and wildlife resources, including listed species, from the modification involving the Service Road. FWC again mentioned concern over the possible presence of the bluenose shiner and requested that sampling be conducted. A copy of that letter is provided in **Appendix F**. As stated previously under *Section 4.3.13*, species-specific surveys will be conducted during the final design and permitting phase of the project, and permits will be obtained from the appropriate agencies should impacts to federally and/or state listed species be unavoidable.

Where federally listed and state listed threatened or endangered species and species of special concern are or may be located within the project area, considerable efforts have been made to cause no adverse affect on them. The ongoing coordination activities with the USFWS and the FWC will continue into the final design phase. Where protected species are determined to be present, the timing and location of construction activities, and specific mitigation measures, will be in accordance with regulatory guidelines established with the appropriate agencies during the permitting process.

#### 4.3.13.3 Wildlife Corridors

In keeping with the recommendations of the "Guiding Principles", the Proposed Build Alternative includes approximately 7,710 feet of bridging in east Lake County from west of Old McDonald Road to east of the Wekiva River to provide enhanced wildlife habitat connectivity at two important wildlife crossing locations, as well the habitat adjacent to the river.

Currently there are two structures under SR 46 in east Lake County that serve as large animal underpasses. The first underpass structure, built in 1994, is a rectangular concrete bottomless culvert that provides a 26-foot wide opening for wildlife to pass under the roadway. It is located east of the SR 46/CR 46A intersection. The second, an AASHTO beam bridge built in 2004, is twice as wide and provides a 52-foot wide opening for wildlife. This bridge is located west of Old McDonald Road. The current roadway width, which is the distance that wildlife has to travel through the underpass, is approximately 46 feet. Chain link fence and vegetation are used to funnel wildlife to the crossings.

At least 12 species, including bears, were recorded using the 1994 culvert and at least 55 bears used it in the 2 years following installation (Roof and Wooding 1996; USDA 2005). Roof and Wooding (1996) studied bear movements near the wildlife underpass on SR 46 south of Ocala National Forest and estimated a density of 0.28 bears per square mile. A camera with motion sensor was installed in the culvert. During a 3-year period, from late 1996 to late 1999, the Florida Park Service reported over 400 wild animals, representing 5 species that crossed through the culvert (Defenders of Wildlife circa 2001). Ninety-eight percent (98%) of the wildlife species reported to use the culvert during those 3 years included deer (38%), bobcat (*Lynx rufus*) (29%), coyote (*Canis latrans*) (19%), and bear (12%).

Records of bearkills obtained from FWC, indicate that while the crossings are used, there are still incidences of bearkills along SR 46 in the vicinity of the crossings as evidenced by remarks made by investigators suggesting that the bear should have used the underpass.

As a part of the Proposed Build Alternative, FDOT proposes to replace the existing western 52-foot wide opening and eastern 26-foot wide opening wildlife underpasses with longer wildlife bridges of approximately 1,960 feet (western bridges) and 4,000 feet (eastern bridges). The existing 561-foot bridge over the Wekiva River will be replaced with longer, higher bridges of approximately 1,750 feet in length. These longer bridges will open up the wildlife corridor between the Rock Springs Run State Reserve and the Seminole State Forest,

and will enhance habitat connectivity. Many more species of wildlife will be able to safely move between the two public conservation areas.

If the Wekiva Parkway were to be constructed at-grade through the Neighborhood Lakes property, it would be a substantial hazard/barrier to bears and other wildlife that attempt to move west from Rock Springs Run State Reserve. However, as a part of the Proposed Build Alternative, a bridge of approximately 800 feet in length will be constructed over the marsh habitat in the center of the Neighborhood Lakes property. This will serve as a large and small animal underpass, as well as provide access for state park management staff.

Barriers or fencing to direct wildlife to these safe crossing points will be addressed during the final design phase of the project. The locations and approximate lengths of the proposed wildlife structures are illustrated in **Exhibit 4-19**.

## 4.3.14 Farmlands

Through coordination with the Natural Resources Conservation Service, it has been determined that no prime or unique farmlands, as defined by 7 CFR 658, are located in the project vicinity.

## 4.3.15 Construction

Construction activities will produce temporary air, noise, water quality, traffic flow, and visual impacts on the residences, businesses, and motorists within the immediate vicinity of the project. All construction impacts will be minimized or controlled by adherence to measures set forth in the FDOT's *Standard Specification for Road and Bridge Construction*.

The air quality impact will be temporary and will primarily be in the form of emissions from diesel-powered construction equipment and dust from embankment and haul road areas. Air pollution associated with the creation of airborne particles will be effectively controlled through the use of watering or the application of other controlled materials in accordance with FDOT's *Standard Specifications for Road and Bridge Construction* as directed by the FDOT and Expressway Authority Project Engineers.

Noise and vibrations impacts will be from the heavy equipment movement and construction activities such as pile driving and vibratory compaction of embankments. Noise control measures will include those contained in FDOT's *Standard Specifications for Road and Bridge Construction*. Adherence to local construction noise and/or construction vibration ordinances by the contractor will also be required where applicable.

Water quality impacts resulting from erosion and sedimentation will be controlled in accordance with FDOT's *Standard Specifications for Road and Bridge Construction* and through the use of Best Management Practices. Construction activities within the Wekiva River Hydrologic Basin must also meet the standards for erosion and sediment control and water quality pursuant to Chapter 40C-41, F.A.C. A Water Quality Protection Zone extends one half mile from the Wekiva River and tributaries, and within one quarter mile from any wetland abutting an Outstanding Florida Water.

Maintenance of traffic and sequence of construction will be planned and scheduled so as to minimize traffic delays throughout the project. Signs will be used as appropriate to provide notice of road closures and other pertinent information to the traveling public. The local news media will be notified in advance of road closings and other construction-related



activities which could excessively inconvenience the community so that motorists, residents, and business persons can plan travel routes in advance. A sign providing the name, address, and telephone number of the appropriate FDOT or Expressway Authority contact person will be displayed on-site to assist the public in obtaining immediate answers to questions and logging complaints about project activity.

Access to all business and residences will be maintained to the extent practical through the controlled construction scheduling. Along the existing SR 46 corridor, the present traffic congestion may become worse during stages of construction where narrow lanes may be necessary. Traffic delays will be controlled to the extent possible where many construction operations are in progress at the same time. The contractor will be required to maintain the existing number of lanes at all times and to comply with the Best Management Practices of FDOT and the Expressway Authority. Also, present interchange movements will be maintained through the use of detour ramps. No other locations will require temporary roads or bridges.

For the residents living along SR 46 or any roadway that will be bridged or have an interchange with the proposed project, some of the materials stored for the project may be displeasing visually; however, this is a temporary condition and should pose no substantial problem in the short term.

Construction of the roadway and bridges requires excavation of unsuitable material (muck), placement of embankments, and use of materials, such as limerock, asphaltic concrete, and Portland cement concrete. Demucking is anticipated at most of the wetland sites and will be controlled by Section 120 of the FDOT Standard Specifications. Disposal will be on-site in detention areas or off-site. The removal of structures and debris will be in accordance with local and State regulation agencies permitting this operation. The contractor is responsible for his/her methods of controlling pollution on haul roads, in borrow pits, other materials pits, and areas used for disposal of waste materials from the project. Temporary erosion control features as specified in the FDOT's Standard Specifications, Section 104, will consist of temporary grassing, sodding, mulching, sandbagging, slope drains, sediment basins, sediment checks, artificial coverings, and berms.

# 4.4 Secondary and Cumulative Effects

The potential effects or impacts of a proposed action can be direct, indirect (secondary) and cumulative. According to 40 CFR 1508.7 and 1508.08:

- direct effects are caused by the action and occur at the same time and place;
- secondary effects are caused by the action and are later in time or farther removed in distance, but are reasonably foreseeable;
- cumulative effects result from the incremental consequences of the action when added to other past and reasonably foreseeable future actions regardless of who undertakes such other actions.

The potential direct effects of the proposed Wekiva Parkway project have been evaluated in the preceding portions of *Section 4* in this document. With regard to secondary and cumulative effects, the proposed project is one component of a comprehensive plan developed through Executive Orders, subsequent task force and committee findings of diverse stakeholders, and the resultant *Wekiva Parkway and Protection Act* legislation as discussed in *Sections 1* and 2. The strategic priorities address growth management and a

sustainable environment, including master stormwater management, water supply protection, land use strategies, and land acquisition for conservation. The potential for negative secondary and cumulative effects of the Wekiva Parkway project was realized early in the process, analyzed and addressed in those comprehensive actions. The Wekiva Parkway (SR 429)/SR 46 Realignment PD&E Study has followed that guidance in planning to protect the rural character of the study area and the unique resources of the Wekiva River Basin. The following is a brief assessment of the potential secondary and cumulative effects of the proposed project.

# 4.4.1 Secondary Effects

Generally, secondary or indirect impacts are induced by the initial action. They may be comprised of a variety of effects such as changes in land use, development patterns, water quality, wildlife habitat, and other natural systems. Transportation projects may influence development in localized areas and have environmental impacts resulting from land use changes. However, those types of potential consequences were analyzed and addressed in the comprehensive stakeholder findings and the resultant legislation completed prior to the start of the PD&E Study. Many secondary effects of the proposed project are anticipated to be positive, as discussed below.

## 4.4.1.1 Land Use and Development

The *Wekiva Parkway and Protection Act* specifically recommended limiting the number and location of local access interchanges in order to control induced growth and unforeseen changes in land use. Over the 20.94 mile length of the proposed Wekiva Parkway, there are only three local access interchanges in the Proposed Build Alternative -- one in Orange County at Kelly Park Road, one in Lake County East in the Neighborhood Lakes area, and one in Seminole County at International Parkway near I-4. The *Act* requires local governments to develop specific land use plans for those interchange areas to address appropriate uses and compatible development. Also, the acquisition of conservation lands in Lake County East and Orange County was undertaken, in part, to preserve those lands along the proposed roadway alignment for conservation and preclude future development.

In the more developed portions of the study area, there may be some "out migration" from owner-occupied existing residential units located directly adjacent to the proposed right-of-way limits due to associated noise and/or visual effects of the project. However, these types of land use impacts are anticipated to be fairly isolated.

## 4.4.1.2 Natural Environment

A major focus of the Executive Orders, stakeholder task force and committee findings, and the *Act* was to protect and enhance the unique natural resources of the Wekiva River Basin area. This includes master stormwater management, water supply protection, wildlife habitat protection and connectivity, and other ecosystem protections. The recognition of the importance of the Wekiva River Basin, its habitat, wildlife, conservation and recreation values, the associated spring systems, and the connection to the Ocala National Forest elevated the protection of this resource to a primary component of the purpose and need for the Wekiva Parkway. The following address the potential for secondary effects:

• Secondary impacts to water quality are not expected with this project because the treatment system for stormwater will be designed to satisfy current management criteria, including special basin criteria. Rather, water quality treatment will be improved over the existing conditions along portions of the project in Lake and

Seminole Counties which follow the existing SR 46 alignment and were constructed primarily before drainage criteria were developed. This will also benefit the Wekiva River through control of untreated runoff.

- The estimated total direct wetlands impact of 97.56 acres will be mitigated with wetland creation through an expected combination of the Central Florida Beltway Mitigation Trust Fund, Florida Senate Bill 1986, and the Multi-Party Agreement with the Wekiva River Mitigation Bank.
- There have historically been many conflicts between vehicles and wildlife on SR 46 in the Lake County East portion of the study area; habitat connectivity between state park/conservation lands will be enhanced by the project implementing several long wildlife bridges totaling approximately 7,710 feet in length.
- In developing the alignment of the Proposed Build Alternative, special considerations were given to the high recharge areas primarily in northwest Orange County recognizing the recharge areas are an integral component of the area springshed and the ultimate continued function of the spring systems.
- With regard to air quality, the comparative 1-hour and 8-hour carbon monoxide concentrations are lower for the Proposed Build Alternative than for the No Build Alternative, with no projected exceedance of National Ambient Air Quality Standards.
- Extensive analysis and evaluation is being undertaken to avoid or minimize impacts to the Outstandingly Remarkable Values of the Wekiva Wild & Scenic River.

#### 4.4.1.3 Conservation Lands

Although there will be some unavoidable impacts to Section 4(f) public lands, State parks and conservation lands in Lake County East and Orange County have been enhanced by the proposed project because of the following acquisitions which meet the goals of the Wekiva-Ocala Greenway *Florida Forever* project:

- Wekiva River Mitigation Bank (1,553 acres) the perpetual conservation easement and transfer of development rights assure that the land will be preserved in its natural state augmented by created wetlands;
- Neighborhood Lakes (1,584 acres) the property is immediately adjacent to the Rock Springs Run State Reserve; the acquisition included transfer of development rights so the land will be preserved for public conservation purposes and may become a part of the Reserve;
- Pine Plantation (385 acres) the land acquired is not needed for right-of-way for the Wekiva Parkway, but will serve as a buffer to protect surface water and groundwater resources, including recharge within the Wekiva River spring-shed; the acquisition included transfer of development rights so the property will be conservation land protected from future development.

#### 4.4.1.4 Economic Vitality

The economic vitality of the study area and the region will be enhanced by completion of the Western Beltway around metropolitan Orlando. The Wekiva Parkway is a planned addition to Florida's Strategic Intermodal System (SIS), an integrated transportation network consisting of statewide and regionally significant transportation facilities, services, modes of transportation and linkages. The SIS was established to focus limited state resources on transportation facilities that are critical to Florida's economy and quality of life. It is not expected that the displacement/relocation of the nine small businesses (some are backyard greenhouses) that are estimated to be impacted by the proposed project over the three county area will have a substantial effect on the economic vitality of the study area or the region.

# 4.4.2 Cumulative Effects

Cumulative impacts can result from individually minor, but collectively significant, actions which take place over a period of time. Such effects include the total of all impacts to a particular resource that have occurred, are occurring, and will likely occur as a result of any action or influence, including the direct and reasonably foreseeable indirect impacts of the proposed action.

Cumulative impacts within the Wekiva River Basin portion of the study area, beyond past actions and with the expected direct and secondary effects of the proposed project, may be positive or benign. The environmental protections and enhancements recommended or provided by the previously referenced stakeholder findings, requirements of the *Wekiva Parkway and Protection Act*, conservation land acquisitions, components of the proposed project, and other state/local government actions pursuant to the *Act* should ensure no future habitat loss, ecosystem degradation, or development pressure.

There are no other major roadways planned within the study area, and the proposed Wekiva Parkway project is meant to replace an existing roadway (SR 46) through the most environmentally sensitive area. Those actions that can be most reasonably foreseen are the projects included in the TIP and LRTP as documented in *Section 2.5.2*. There is very limited data available to allow for quantification of the potential effects associated with those planned and programmed projects. Consideration of the planned and programmed projects was included in the deliberations which resulted in the *Wekiva Parkway and Protection Act*. Through those discussions it was noted that the cumulative effects of those actions, along with the proposed Wekiva Parkway project, would not result in significant impacts. In fact, the actions pursuant to the *Wekiva Parkway and Protection Act* are widely viewed as providing positive benefits that outweigh the potential effects of all planned and programmed actions in the study area.