

5. Project Effects on Protected Species and Minimizing Measures

This *Endangered Species Biological Assessment* (ESBA) is focused on the federal and state listed species that were reported to occur, were directly observed, or have specific habitat requirements that are found within the study area. A brief discussion of the potential effects of the project on these listed species is provided in this section. Coordination with USFWS, FWC, National Marine Fisheries Service (NMFS), and FDEP park staff on all listed species in the project area will continue throughout the PD&E study, design, permitting and construction stages of the project.

5.1 Direct Effects

This project would be on a new alignment in many portions of the study area; consequently, it has the potential to have a direct impact on certain individual animals or on their breeding habitat. Direct impacts will be minimized to the greatest extent possible during detailed design, permitting, and construction phases of the project. Given the results of this PD&E study and of survey work performed previously by many other scientists, the listed species that may be directly impacted by construction of the roadway or ponds include those directly observed, or that have a high potential to occur, along the Preferred Alternative alignment.

5.1.1 Federal Listed Species Potentially Affected

Federal listed species that may be directly impacted by roadway or pond construction include indigo snake, sand skink and scrub jay. These species can be found in the same habitat, which is dry, sandy scrub. The field assessments were used to evaluate the potential impacts to scrub jays and how best to avoid impacts. Several alternative alignments and potential pond locations were evaluated to intentionally avoid scrub. The Preferred Alternative was shifted to the east to avoid the scrub area where the scrub jays and jay nest were found. The other 2 species (indigo snake and sand skink), if present, would likely occur in the area as the scrub jay. In addition, a large part of the lesser quality scrub (dense sand pine/oak of the former Silvestri parcel) was acquired as an opportunity purchase for conservation before the Preferred Alternative was selected. Excluding the Preferred Alternative right-of-way, the remaining area may be considered for mitigation of project-related environmental/habitat impacts or designated as conservation land if an appropriate local or state agency commits to management of it. Management activities, such as mechanical thinning of the canopy and controlled burns, would be needed to improve this habitat if it were to support jays. Small culverts may serve as effective

- Wekiva River Mitigation Bank property (1,553 acres) – conservation easement on private property formerly known as New Garden Coal
- Pine Plantation property (385 acres, to date) – Will serve as a buffer to protect surface and ground water resources within the Wekiva Study Area, including recharge within the Wekiva River springshed, and will protect it from future development.
- Former Silvestri parcel - approximately 171 acres potentially for additional minimization through habitat management, such as mechanical thinning of the canopy and controlled burns of the dense sand pine/oak.
- Standard protection measures for the eastern indigo snake will be implemented during construction.
- Relocation permit will be obtained for gopher tortoise burrows that may be affected during construction of the Preferred Alternative.
 - Gopher tortoise will be relocated to the conservation portion of the Neighborhood Lakes property, which will contribute to the FWC’s goal of increasing protected tortoise habitat. Also, the carrying capacity of this parcel may be improved when properly managed by FDEP (e.g., no cattle grazing).
- New surveys will be conducted in the area during final design and permitting to avoid potential future impacts to listed species that may have moved into the area.
- During detailed design, innovative approaches to stormwater treatment pond designs could potentially enhance wood stork foraging in the area.
- During detailed design, innovative approaches to floodplain compensation could eliminate the need for constructed ponds in uplands that are adjacent to wetlands, thus conserving existing upland habitat. Uplands adjacent to wetlands are extremely important for supporting the complete life cycle requirements of many species.
- Coordination with USFWS, FWC, DOACS/Division of Forestry (Seminole State Forest), and FDEP park staff on listed species occurrence and habitat (such as red-cockaded woodpecker, scrub jays) was conducted and should continue throughout the study, design and permitting stages of the project.

5.6 Agency Concurrence on Project Effects

5.6.1 USFWS

Initial coordination with the USFWS was completed, and after review of the Final Draft ESBA and other coordination including field visits, the USFWS provided a letter of concurrence dated January 15, 2008 (see **Appendix C**). The USFWS

5.4 Interdependent and Interrelated Actions

USFWS defines “interdependent and interrelated actions” as separate actions that would have no purpose if it were not for the specific project, such as to support the project (USFWS 2004). For example, in the case of a new residential development an access road and power line may be needed. For the Wekiva Parkway study area, outside the project right of way there are no associated interdependent and interrelated actions, except for the positive actions of acquiring large parcels of land for conservation.

5.5 Summary of Minimizing Measures of Project Effects

- The alignment and location of the Preferred Alternative and stormwater treatment ponds were shifted:
 - as far west as possible through the Neighborhood Lakes parcels, given speed and safety design requirements, to maximize contiguous lands with FDEP state park property
 - to avoid the only scrub area, west of Plymouth Sorrento Road, where scrub jays and nest were found
 - to avoid all three minor spring runs near Boch Road, east of CR 437
 - to avoid direct impact to burrowing owl nests on the Neighborhood Lakes parcels purchased for conservation; burrowing owls are expected to continue to nest in the area
 - as far west as possible through the Neighborhood Lakes parcels to minimize impact on gopher tortoise habitat
 - to minimize wetland impacts by crossing the narrowest portion of the marsh used by white ibis on the Neighborhood Lakes property
 - for 800-foot bridge over the wetlands on the Neighborhood Lakes property.
- Long bridges will open up the wildlife corridor between the Rock Springs Run State Reserve and the Seminole State Forest; will increase habitat connectivity and improve effectiveness of the wildlife underpass.
- Longer, higher bridging over the Wekiva River will increase habitat connectivity.
- Acquired property (several thousand acres) for conservation as habitat mitigation:
 - Neighborhood Lakes property (1,619 acres of which 1,440 will be in conservation) - with burrowing owls, gopher tortoise, wading bird foraging, and sand hill crane foraging

to be within the right-of-way and the foraging pools within the park boundary; where FDEP staff could assess the pond's effectiveness and utilization by wood storks and other wading birds.

5.3 Cumulative Effects

USFWS defines "cumulative effect" in this situation as "the effects of unrelated future state and/or private activities, not involving federal activities that are reasonably certain to occur within the project area" (USFWS 2004).

History has proven that these types of projects will have cumulative effects, in terms of new residential and commercial development occurring near the new roadway. Some of the changes in land use patterns, population density, or growth rate are projected to occur irrespective of this roadway project. However, the *Wekiva Parkway and Protection Act* has addressed development limitations around new interchanges. The intent of this project is to complete the Western Beltway around the greater Orlando area while providing very few new local-access interchanges so as to not encourage development of the adjacent area. With the addition of the service road within the 300-foot limited access right-of-way in Lake County East, two local access interchanges were removed, further reducing the potential for development.

A large portion of the adjacent lands in the east-central portion are in state ownership and will not be developed. The eastern portion of the project is through existing urban area, and the southern and western portions of the project will go through rural residential and agricultural uses that are being steadily developed today.

The north-south segment of the project through Orange County may spur additional development of some of the pastures/farms in the area, especially near the proposed interchange at Kelly Park Road. Other new alignment sections will be in east Lake County through the Neighborhood Lakes parcels and along the Orange-Lake County line through the scrub habitat.

Cumulative impacts on listed wildlife species or breeding habitat can be minimized, but not eliminated, when developable land is available along a new roadway. The cumulative effects of this Wekiva Parkway/SR 46 Realignment project will be greatly minimized by removing the option of future development from parcels along the roadway, as is the case with the Neighborhood Lakes parcels. This land was planned to be developed as a residential community, and with a parkway interchange at the north end of the parcel, it surely would have been developed. Now it will be conservation land directly contiguous to the state reserve land. Similarly, the Preferred Alternative connecting to SR 46 and US 441 will be partially a new roadway alignment through undeveloped land along the county line. The purchase of the former Silvestri sand pine parcels will help to conserve land and limit growth in that area.

Wildlife that use the lands surrounding the project area are expected to attempt to cross the roadway and some attempted crossings will not be successful, for example the Florida black bear. Numerous records of local road kill and nuisance bears have been provided by FWC. The central portion of the project corridor crosses the southern edge of the Ocala primary and secondary population range for the Florida black bear. Unsuccessful attempt to cross might interrupt regional breeding activity, breeding success, interfere with foraging activity, or might result in death of an individual animal. However the long bridges and fencing that will be constructed in the east central portion of the project will greatly improve the wildlife habitat connectivity and the effectiveness of the wildlife movement corridor between the state-owned lands that are north and south of the existing SR 46.

As documented by Roof and Wooding's study (1996) of the existing SR 46 wildlife crossing, bears used the underpasses when the openings are in forested areas with trails and paths that converge at the opening. This works well to guide the bears to the crossing while providing cover and possible foraging. Another tool that could be considered during detailed design is the installation of one-way gates in the fencing. This would enhance the underpass effectiveness by preventing animals from being trapped behind the fence, should they get onto the roadway.

Movement of wildlife between the expansive public conservation lands will be significantly enhanced over the conditions that exist today by the construction of these long bridges. Therefore, the indirect effects of this project are positive to the over wildlife habitat and to individual animals.

Indirect affects to wood storks will be eliminated by having no net loss of wetland habitat that may serve as foraging area for the stork. During detailed design, innovative approaches to stormwater treatment pond designs could potentially enhance wood stork foraging in the area. Continued discussions with USFWS, and coordination with the SJRWMD and FDEP, is recommended to investigate further the concept of combining treatment ponds with wood stork feeding areas (USFWS 2007b personal communication). The concept is to create a pre-treatment area in the right-of-way to meet rule criteria for stormwater runoff, and then direct the water to a series of staged pools farther from the road. These pools would dry in succession as the natural dry season progressed, thus concentrating fish in the last pool away from the roadside treatment area. Native trees could be planted to improve the attractiveness (to wood storks) of the foraging area, reducing the hazard of vehicular collision. It is common to see wood storks feeding in roadside ditches where first-flush pollutants accumulate. This alternative approach would provide treated water in more natural-looking ponds farther away from the roadside ditches.

Management of the ponds must be considered as well. The location of the Wekiva Parkway presents a unique opportunity to implement this alternative approach to stormwater treatment and wildlife habitat enhancement. With expansive conservation lands adjacent to the parkway, it is feasible for the pre-treatment area

Large areas of public conservation land will continue to exist in the project corridor. Four long bridges will serve as wildlife underpasses in the central portion of the project. This will enhance habitat connectivity of the wildlife corridor between public lands for large and small animal species.

A variety of potential foraging habitat for the Florida sandhill crane exists in the project area, and much of that is in conservation lands or in newly acquired conservation land. With avoidance of the known nesting marshes and other large marshes with potential as nesting locations, adverse impacts to the Florida sandhill crane can be minimized. Further minimization may be possible during detailed design and permitting through innovative design of stormwater ponds that incorporate islands.

Additionally, as a mitigating measure to potential impacts to these state listed species and habitat, the Neighborhood Lakes parcels previously discussed will be conserved. With avoidance to the extent possible and with adequate mitigation for unavoidable impacts, the project may affect, but is not expected to adversely affect, the continued existence of the gopher tortoise, Florida mouse, short-tailed snake, Florida pine snake, burrowing owl, and sandhill crane.

5.1.3 Important Habitats Potentially Affected

Ambient water quality in adjacent wetlands and surface waters will be maintained, or improved, by the stormwater treatment systems proposed. Therefore, the project is not expected to have any negative direct or indirect impacts to EFH, Special Waters, or Important Manatee Areas downstream of the project limits.

Direct effects to public conservation lands (state park and state forest) will occur due to right-of-way taking. The acreage of this taking has been minimized as much as possible. This is being off-set by acquiring large, contiguous tracks of land that will expand the state park boundary by more acreage than was taken. Additionally, constructing the long bridges between the state park and state forest will result in less fragmentation of contiguous habitat and open up the wildlife movement corridor between the state conservation lands. The net effect is a positive one.

5.2 Indirect Effects

Indirect effects are defined as effects that are caused by the proposed action and are later in time or farther removed in distance from the action, but still are reasonably certain to occur. Indirect effects to individuals or habitat that would occur later in time include those that would affect a species food supply (USFWS 2004).

This project is expected to have some indirect impact on federal and state listed wildlife species because these species have been documented to use the surrounding area. Shifting the Preferred Alternative to the edge of habitats has reduced the fragmentation effect on wildlife habitat.

underpasses for the indigo and sand skink. This project may affect, but is not expected to adversely affect, any regional populations of the Florida scrub jay or sand skink.

Because the eastern indigo snake is known to occur in a variety of dry, mesic, or wet habitats, open or forested, it can occur in many places along the project corridor. Its continued existence in the area is assured through large contiguous tracts of natural habitat. Large areas of public conservation land will continue to exist in the central portion of the project corridor. Wildlife underpasses (long bridges) will be constructed as a part of this Wekiva Parkway project to serve a variety of large and small wildlife species, and will be located to maximize effectiveness as a natural connection between the conservation lands. Additionally, as a mitigating measure to potential impacts to the eastern indigo snake and its habitat, the entire 1,619-acre Neighborhood Lakes property was acquired by the State and the Expressway Authority and, except for approximately 166 acres needed for Wekiva Parkway right-of-way, will be designated as conservation land. To minimize potential impacts to the eastern indigo snake or its habitat during construction of the roadway, standard protection measures for the eastern indigo snake (refer to **Appendix D**) will be implemented; thereby, this project may affect, but is not expected to adversely affect, any regional populations of the eastern indigo snake.

5.1.2 State Listed Species Potentially Affected

State listed species that may be directly impacted by roadway or pond construction include gopher tortoise, Florida mouse, short-tailed snake, Florida pine snake, burrowing owl, and Florida sandhill crane.

The gopher tortoise, Florida mouse, and burrowing owl require fire-maintained habitats where grasses and short herbaceous plants are allowed to grow (FNAI 2001). Open sandy patches are essential to the gopher tortoise, short-tailed snake, and Florida pine snake. The mouse is often a co-inhabitant of the tortoise burrow. Similarly, the snakes or owl at times may rely on old burrows of the gopher tortoise for shelter. Because the short-tailed snake and Florida pine snake spend much of the time below ground, their presence is difficult to detect. Protecting gopher tortoise burrows and suitable habitat is good protection for the short-tailed snake, Florida pine snake, Florida mouse, and burrowing owl as well as the federal listed species (indigo snake and sand skink) previously discussed.

In preparation of the permit application, field surveys would be needed to confirm the presence of gopher tortoise and its burrow inhabitants in appropriate uplands that may be displaced by the roadway. Preliminary investigation results indicate that some gopher tortoise burrows will be impacted for the Preferred Alignment through the Neighborhood Lakes parcels. On-site relocation is feasible, and may be recommended by FWC during detailed design and permitting.

concluded, based on the proposed project description and commitments outlined in the Final ESBA, May 2008, that the proposed action would have no effect on the West Indian Florida Manatee, Audubon's Crested Caracara, Red-cockaded Woodpecker, and Everglade Snail Kite, and that the project may affect, but is not likely to adversely affect, the Florida Scrub Jay, Wood Stork, Eastern Indigo Snake, and Sand Skink.

When the Preferred Alternative was modified to include the non-tolled service road in Lake County East, additional coordination with USFWS was conducted. Since the service road will be constructed within the previously identified 300-foot limited-access right-of-way and will eliminate the need for two full local access interchanges in Lake County East, the revised Preferred Alternative has a smaller footprint than the April 2007 Preferred Alternative. In addition, the service road will also include approximately 6,000 feet of bridging through the wildlife corridors and a 1,750-foot bridge over the Wekiva River, adjacent to the expressway. Since the addition of the service road did not incur additional adverse effects on protected species, USFWS indicated in a May 10, 2010 email that reinitiation of consultation will not be required (see **Appendix C**).

5.6.2 FWC

Initial coordination with the FWC was completed, and after review of the Final Draft ESBA and other coordination, the FWC staff provided a comment letter dated May 5, 2008 (see **Appendix C**). The FWC indicated concurrence with the USFWS assessment of no project effects on the West Indian Florida Manatee, Audubon's Crested Caracara, Red-cockaded Woodpecker, and Everglade Snail Kite, and that the project may affect, but is not likely to adversely affect, the Florida Scrub Jay, Eastern Indigo Snake, and Sand Skink. The FWC also indicated concurrence with the information in the ESBA that the project will have no effect on the Bald Eagle, Least Tern, Limpkin, Peregrine Falcon, Southeastern American Kestrel, Little Blue Heron, Snowy Egret, Tricolored Heron, and White Ibis, and that the project may affect, but not adversely affect, Florida Black Bear, Sherman's Fox Squirrel, Florida Mouse, Burrowing Owl, Florida Sandhill Crane, American Alligator, Florida Pine Snake, Gopher Frog, Gopher Tortoise, and Short-tailed Snake. The FWC indicated information on potential effects to the Bluenose Shiner would be needed in future coordination in order to determine whether the project will have adverse effects on the fish.

When the Preferred Alternative was modified to include the non-tolled service road in Lake County East, additional coordination with FWC was conducted. At their request, FWC was provided with the USFWS statement that reinitiation of consultation will not be required. However, due to the oil spill in the Gulf of Mexico, the FWC staff has not been able to respond to the request for their opinion (see **Appendix C**).