ADMINISTRATIVE ACTION
TYPE 2 CATEGORICAL EXCLUSION

Florida Department of Transportation

SR 994/SW 200 ST/QUAIL ROOST DR FR W OF SW 137 AVE TO E OF SW 127 AVE

District: FDOT District 6

County: Miami-Dade County

ETDM Number: 14429

Financial Management Number: 445804-1-22-01

Federal-Aid Project Number: N/A

Project Manager: Raul Quintela

The Environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding (MOU) dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

This action has been determined to be a Categorical Exclusion, which meets the definition contained in 40 CFR 1508.4, and based on past experience with similar actions and supported by this analysis, does not involve significant environmental impacts.

Signature below constitutes Location and Design Concept Acceptance:

Director Office of Environmental Management
Florida Department of Transportation

For additional information, contact:

Florida Department of Transportation

This document was prepared in accordance with the FDOT PD&E Manual.

This project has been developed without regard to race, color or national origin, age, sex, religion, disability or family status (Title VI of the Civil Rights Act of 1964, as amended).

On 07/20/2020 the State of Florida determined that this project is consistent with the Florida Coastal Zone Management Program.

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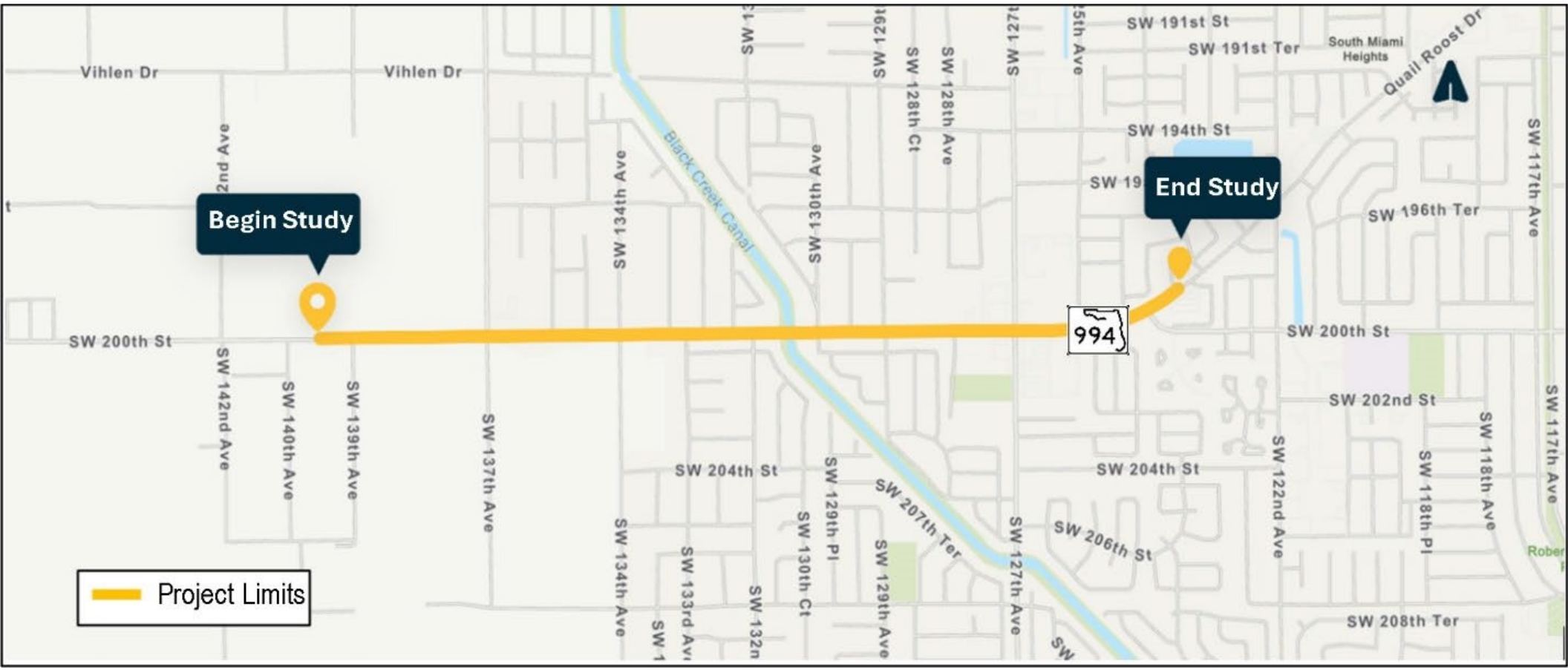


Figure 1- Project Location Map

1. Project Information

1.1 Project Description

A Project Development and Environment (PD&E) Study is being conducted to evaluate the potential impacts of widening State Road (SR) 994/SW 200th Street/Quail Roost Drive from west of SW 137th Avenue to east of SW 127th Avenue from two lanes to four lanes. The project is located in southwest Miami-Dade County at SR 994/SW 200th Street/Quail Roost Drive, from west of SW 137th Avenue to east of SW 127th Avenue. The project corridor is approximately 1.67 miles in length. Within the project limits, the roadway is locally known as Quail Roost Drive. Build Alternative 2 was chosen as the Preferred Alternative.

In addition to the potential widening, the proposed roadway improvements includes drainage, operational enhancements at the existing intersections, removal and replacement of the bridge structure (#870633) over Black Creek Canal (C-1W), access management measures, and stormwater management facilities as well as new/enhanced pedestrian and bicycle infrastructure, including paved shoulders/designated bicycle lanes, sidewalks, and/or a shared-use path connection to the existing Black Creek Trail. Improvements at four intersections/cross streets are also proposed as part of this project:

- Quail Roost Drive and SW 137th Avenue
- Quail Roost Drive and SW 134th Avenue
- Quail Roost Drive and SW 132nd Avenue
- Quail Roost Driveand SW 127th Avenue

The project is located in southwest unincorporated Miami-Dade County and part of the project occurs within the Miami Urbanized Area (as defined by the Miami-Dade County 2015 Urban Development Boundary). The project corridor primarily serves existing residential land uses and provides local east-west access and connectivity. Outside of the project limits, Quail Roost Drive connects directly to two Strategic Intermodal System (SIS) Highway Corridors at SR 997/Krome Avenue (west of study limits) and SR 821/HEFT (east of study limits).

Within the project limits, Quail Roost Drive is classified as a rural major collector to the west of SW 137th Avenue and an urban minor arterial to the east of SW 137th Avenue. The corridor primarily has a C3R Suburban Residential Context Classification and a posted speed of 40 miles per hour, which will be maintained. Four major intersections are located along the project corridor, including two signalized intersections (SW 137th Avenue and SW 127th Avenue) and two unsignalized intersections (SW 134th Avenue and SW 132nd Avenue). Eight other minor (unsignalized) intersections are located within the study corridor. For the Preferred Alternative, eight personal property relocations are proposed and a total of 62 parcels are to be acquired.

Currently, Quail Roost Drive is a two-lane roadway (one lane in each direction) from west of 137th Avenue to west of 127th Avenue. From west of SW 127th Avenue to SR 821/HEFT, Quail Roost Drive is a four-lane roadway. The existing Quail Roost Drive typical section consists of two undivided 11.5-foot travel lanes with unpaved shoulders and open drainage. Curb and gutter exist at the SW 134th Avenue intersection and east of SW 127th Avenue within the study limits. Sidewalks, varying in width, are noncontinuous and generally located at residential subdivisions along the study corridor. There are no existing designated bicycle lanes on Quail Roost Drive within the study limits. There is one bridge within the study limits that spans over the Black Creek Canal (C-1W). There is a pedestrian crossing just east of the bridge for access to the Black Creek Trail, which intersects Quail Roost Drive.

1.2 Purpose and Need

The purpose of this project is to address traffic operations and capacity constraints on Quail Roost Drive from west of SW 137th Avenue to east of SW 127th Avenue in unincorporated Miami-Dade County to accommodate future travel demand projected as a result of population and employment growth along the corridor. Other goals of the project are to improve safety conditions along the corridor, including emergency evacuation and response times, and enhance mobility options and multimodal access.

Capacity/Transportation Demand

This project is anticipated to improve traffic operations along Quail Roost Drive by increasing the capacity to meet projected travel demand as a result of Miami-Dade County population and employment growth. Miami-Dade County is the most populous county in Florida with over 2.6 million residents in 2022. By 2045, the county's population is expected to grow by over 33% to over 3.5 million residents. Employment growth in the county is expected to increase from 960,000 workers in 2021 to more than 1.8 million workers by 2045.

Between SW 137th Avenue and SW 127th Avenue, the corridor has experienced a 7% increase in Annual Average Daily Traffic (AADT) from 2015 to 2019 with traffic volumes growing from 17,900 to 19,200 vehicles per day. Traffic is anticipated to continue to increase due to population growth and residential development in the area.

A traffic Level of Service (LOS) analysis was conducted for Year 2021 and Future Year 2045. The analysis determined that some intersections along the corridor and several intersecting roads that are operating at acceptable LOS D or better in Year 2021, are expected to operate at LOS F during the AM and PM Peak periods in 2045, if no improvements are implemented.

Safety

A crash analysis was conducted from west of SW 137th Avenue to east of SW 127th Avenue. The crash data for the five-year period January 2014 to December 2018 was downloaded from the FDOT's Crash Analysis Reporting System (CARS) and summarized for the project segment. A total of 390 crashes were documented for the five-year period (average of 78 crashes per year) within the project limits. The leading types of crashes along the corridor were rear-end (with 187 crashes), angle (with 77 crashes), and sideswipe (with 43 crashes). Based on crash severity, 65% (254 crashes) were property-damage-only crashes, 35% (135 crashes) were injury crashes, and <1% (1 crash) was a fatal crash. Based on FDOT's 2014-2018 High Crash Lists, the following locations were considered high-crash spots/segments:

Spots
- Quail Roost Drive at SW 137th Avenue
- Quail Roost Drive at SW 134th Avenue
- Quail Roost Drive at SW 132nd Avenue

Segment
- Quail Roost Drive from SW 137th Avenue to west of SW 127th Avenue

According to the safety review, congestion/lack of capacity and lack of left-turn lanes serve as the probable causes of the safety issues within the corridor. Providing additional multimodal capacity and improving intersections along the corridor are anticipated to result in reduced crashes and safety benefits. Improved traffic operations due to increased capacity are also anticipated to decrease emergency response times for emergency response vehicles.

Quail Roost Drive connects directly to two Strategic Intermodal System (SIS) Highway Corridors at SR 997/Krome Avenue (west of the project limits) and SR 821/HEFT (east of the project limits). According to the Florida Division of Emergency Management, both SR 997/Krome Avenue and SR 821/HEFT are designated emergency evacuation routes. SR 997/Krome Avenue additionally provides regional connectivity to US 1, which is a major evacuation route for the Florida Keys. The project is anticipated to enhance emergency evacuation capabilities by improving the capacity of the roadway and, thereby, increasing the number of residents that can be evacuated safely during an emergency event and enhancing access from the residential areas along the corridor to designated emergency evacuation routes.

Modal Interrelationships

There are no existing designated bicycle lanes within the project limits. Sidewalks are noncontinuous and generally located at residential subdivisions along the project corridor. The Black Creek Trail intersects the project corridor just east of the Black Creek Canal (C-1W). The trail is a 17-mile-long greenway corridor that connects the Everglades Levee (L-31N Canal) with Black Point Park and Marina in Homestead. There is a pedestrian crossing equipped with Rectangular Rapid Flashing Beacons (RRFBs) and pavement markings to facilitate pedestrian/bicycle crossing and alert drivers of the pedestrian traffic, just east of the bridge for access to the Black Creek Trail. Based on the 2020 United States Census Data, approximately 2% of the housing units within the project study area (below 3.3% average for Miami-Dade County) are transit-dependent (no vehicle available); in addition, approximately 96 housing units identified within the 2021 census tracts located within the project study area use public transportation for work. This noted transit-dependent population has a higher propensity to walk, bike, or take transit to access essential services. The project is anticipated to improve multi-modal connectivity and mobility options for the transit-dependent population and the overall residential population within the project area by providing continuous bicycle and pedestrian facilities along the entire corridor and improving access to the Black Creek Trail.

Evacuation Routes and Emergency Services

Quail Roost Drive connects directly to two SIS Highway Corridors at SR 997/Krome Avenue (west of the project limits) and SR 821/HEFT (east of the project limits). According to the Florida Division of Emergency Management, both SR 997/Krome Avenue and SR 821/HEFT are designated emergency evacuation routes. SR 997/Krome Avenue additionally provides regional connectivity to US 1, which is a major evacuation route for the Florida Keys. The project is anticipated to enhance emergency evacuation capabilities by improving the capacity of the roadway and, thereby, increasing the number of residents that can be evacuated safely during an emergency event and enhancing access from the residential areas along the corridor to designated emergency evacuation routes.

1.3 Planning Consistency

Currently Adopted LRTP-CFP	COMMENTS
Yes	

	Currently Approved	$	FY	COMMENTS
PE (Final Design)				
TIP	Y	650,000	2024	See attached TIP.
STIP	Y	650,000	2024	See attached STIP.
R/W				
TIP	N			

STIP	N			
Construction				
TIP	N			
STIP	N			

2. Environmental Analysis Summary

Issues/Resources	Significant Impacts?* Yes	No	Enhance	NoInv
3. Social and Economic				
1. Social	☐	☒	☐	☐
2. Economic	☐	☐	☒	☐
3. Land Use Changes	☐	☒	☐	☐
4. Mobility	☐	☐	☒	☐
5. Aesthetic Effects	☐	☒	☐	☐
6. Relocation Potential	☐	☒	☐	☐
7. Farmland Resources	☐	☐	☐	☒
4. Cultural Resources				
1. Section 106 of the National Historic Preservation Act	☐	☒	☐	☐
2. Section 4(f) of the USDOT Act of 1966, as amended	☐	☒	☐	☐
3. Section 6(f) of the Land and Water Conservation Fund	☐	☐	☐	☒
4. Recreational Areas and Protected Lands	☐	☐	☐	☒
5. Natural Resources				
1. Protected Species and Habitat	☐	☒	☐	☐
2. Wetlands and Other Surface Waters	☐	☒	☐	☐
3. Essential Fish Habitat (EFH)	☐	☐	☐	☒
4. Floodplains	☐	☒	☐	☐
5. Sole Source Aquifer	☐	☒	☐	☐
6. Water Resources	☐	☒	☐	☐
7. Aquatic Preserves	☐	☐	☐	☒
8. Outstanding Florida Waters	☐	☐	☐	☒
9. Wild and Scenic Rivers	☐	☐	☐	☒
10. Coastal Barrier Resources	☐	☐	☐	☒
6. Physical Resources				
1. Highway Traffic Noise	☐	☒	☐	☐
2. Air Quality	☐	☒	☐	☐
3. Contamination	☐	☒	☐	☐
4. Utilities and Railroads	☐	☐	☐	☐
5. Construction	☐	☒	☐	☐

USCG Permit

☒ A USCG Permit IS NOT required.

☐ A USCG Permit IS required.

*** Impact Determination:** Yes = Significant; No = No Significant Impact; Enhance = Enhancement; NoInv = Issue absent, no involvement. Basis of decision is documented in the following sections.

3. Social and Economic

The project will not have significant social and economic impacts. Below is a summary of the evaluation performed.

3.1 Social

The preferred alternative is not anticipated to adversely directly or indirectly affect land use, social, economic, aesthetics, community cohesion, community features, or demographics. Environmental justice issues are not anticipated as a result of the preferred alternative. A total of six potential personal properties, which include movable items not affixed to real estate, are anticipated. These relocations will be conducted in accordance with FDOT's Conceptual Stage Relocation Plan (CSRP). Approximately 62 ROW acquisitions are anticipated. No controversy on the project has been noted. A Sociocultural Effects (SCE) report was prepared and is in the project file.

Demographics

The SCE study area intersects 27 census blocks. A census block is the smallest geographic unit for which the Census Bureau tabulates data and is typically bound by streets and other features. Census data (2020) collected at the block level provides relevant information about the communities most likely affected by the project. The census blocks selected for evaluation are located directly adjacent to the study area to ensure the census data is representative of the study area.

Demographic data describes the community's population, including population size, age composition, ethnicity, household information, education, economic information, and geographic distribution. This data can assist planners in designing public outreach and educational materials to reflect the ethnicity, age, education, and economic backgrounds of the community's residents. 'Minority' is defined as Black or African American, Hispanic, Asian American, American Indian/Alaskan Native, and Native Hawaiian or Pacific Islander. According to the data, Black or African American, Other, and Hispanic/Latino origin are the majority for both Miami-Dade County and South Miami Heights and far exceed over 50% of the total populations. As previously stated, the project corridor includes 27 census blocks. Census data shows all 27 blocks with greater than 50% minority populations. According to the Environmental Protection Agency (EPA)'s Environmental Justice (EJ) Tool (2023), most of the populations adjacent to the project corridor are in the 50-60 percentile for low-income populations and a small portion of the easternmost area of the project is in the 80-90 percentile for low-income populations.

As previously stated and identified in the information above, minorities make up the majority of the population in the study area. No minority or low-income populations have been identified that would be adversely impacted by the proposed project, as determined above. Therefore, in accordance with the provisions of Executive Order (EO) 12898 and Federal Highway Administration (FHWA) Order 6640.23a, no further Environmental Justice analysis is required.

Community Cohesion

Additional physical barriers to pedestrian or vehicle movements between communities are not proposed. The existing bridge over the Black Creek Canal will be replaced, however the connection to east and west communities will remain during and post-project. No additional roadways are proposed as part of the Preferred Alternative. The addition of sidewalks and sidewalk level Seperated Bicycle Lanes (SBLs) on both sides of the road will improve community cohesion by improving pedestrian and bicycle mobility and providing additional access to neighboring communities and community features.

Safety/ Emergency Response
The Preferred Alternative will improve emergency evacuation capabilities by enhancing connectivity and accessibility to major arterials designated on the state evacuation route. Quail Roost Drive serves as part of the emergency evacuation route network designated by the Florida Division of Emergency Management and by Miami-Dade County.

Quality of Life
Quality of life within the project area is expected to improve due to the addition of SBLs, which are anticipated to add to the connectivity of the adjacent neighborhoods.

Special Community Designations
The Miami-Dade Urban Development Boundary (UDB) extends from the south along SW 134th Avenue then transitions along Quail Roost Drive and then north along SW 137th Avenue. The UDB is a legal divide on Miami-Dade's land-planning maps that governs how much construction can occur on a piece of land. Approximately 2,000 feet of the project is located within the UDB. Additionally, other special community features include Black Creek Trail, which crosses the center of the project corridor and is approximately 8.7 miles long. The Trail will be impacted by the project and as a result, will be reconstructed as an underpass crossing. In addition, during construction the trail will be temporarily closed at Quail Roost Drive.

3.2 Economic

Based on information included in the following subsections describing economic effects, economics are anticipated to be improved throughout the project corridor due to enhanced mobility and access to businesses.

Business and Employment
Within the census blocks, the SCE study area currently supports 90,466 jobs in Miami Dade County (US Census Bureau (2020)). The Professional, Scientific and Technical Services, Retail Trade, Health Care, and Social Assistance supports the greatest share of the job market.

Traffic-based businesses such as retail trade are expected to be positively affected by the changes in traffic volumes resulting from the project. Additionally, no existing businesses will be bypassed, and current access will be unaffected by the Preferred Alternative. No disproportionate impacts to businesses within low-income and high elderly populations will occur as a result of any of the Build Alternatives. No industry sectors are anticipated to be affected by potential relocations.

A Project Traffic Analysis Report (PTAR) and CSRP are in the project file.

Tax Base
The Preferred Alternative requires 62 parcel acquisitions. Some tax revenue will be lost from the affected parcels. While the County will see an initial loss in value, local businesses and neighborhoods will experience improved access and mobility. This could offset some of the negative effects with properties near the facility and within the study area experiencing an increase in value over time.

Traffic Patterns

Under the No-Build scenario, the future LOS is expected to deteriorate from LOS C to LOS F in the eastbound direction and from LOS C to LOS D in the westbound direction. Traffic conditions are expected to improve along the study corridor with the Preferred Alternative. All industry sectors within the study area will benefit from improved traffic operations. Traffic-based businesses such as retail trade are not expected to be negatively affected by the changes in traffic volumes resulting from the project.

Business Access

Access to businesses will be maintained with the Preferred Alternative. Access to some businesses will be modified but no closures are proposed by the project. Temporary impacts may occur during construction; however, no existing businesses will be bypassed as a result of the proposed improvements.

Special Needs Patrons

Special Transportation Service (STS) is available in the study area. STS is a shared-ride public transportation service of Miami-Dade County that complies with the complementary paratransit service provisions of the ADA of 1990. The project will not impact this service.

3.3 Land Use Changes

Existing and Future Land Use

Existing land use within, and adjacent to, the project corridor was mapped using Miami-Dade County's existing land use map. The primary land uses adjacent to the project corridor are comprised of developed properties, such as commercial, residential, institutional facilities, and agricultural including nurseries and croplands (see **Figure 2**- Land Use Map). Future land use for the project area, according to Miami-Dade County, continues to be mostly residential with agriculture and a minor addition of commercial use. Current agricultural land in the west (not within the UDB) is proposed to become residential. The future land use is similar to the existing land use. While the project may result in the redevelopment of parcels, this redevelopment would occur over previously developed land. Therefore, based on the above, adverse effects (direct/indirect) to land use are not anticipated as a result of this project.

Plan Consistency

Local planning documents include local comprehensive plans to establish local government priorities. This project is listed in the State Transportation Improvement Program (STIP) and the Miami-Dade County Fiscal Year (FY) 2023-2027 Transportation Improvement Program (TIP).

Growth Trends and Issues

The project is located in the South region of the transportation planning areas, which expects the highest population increase of 46.5% and therefore, will result in higher travel demand. This project will add additional capacity to provide accommodation for the expected population increase.

Focal Points

Calvary Pentecoastal, Alianza Apostolica, and Peace United Methodist Church are anticipated to have minor ROW takes on the edges of the properties. No other community features/focal points are anticipated to have impacts.

3.4 Mobility

Mobility Choices and Connectivity

The project will improve mobility, travel speeds, and travel time for this facility as well as on the cross streets. No disruption in pedestrian traffic or travel between communities is anticipated. Currently, discontinuous sidewalks are along either side of the corridor, and no bike lanes are present. SBLs are proposed on both sides of the corridor, which will improve mobility for both pedestrians and bicyclists.

Accessibility

Implementation of this project will not affect access to places of worship or schools along the project corridor. Temporary closures to Black Creek Trail will occur due to bridge construction. Short-term impacts caused by construction activities, such as traffic congestion/delays, noise from construction equipment, and dust from roadway construction may occur but will end once construction is complete. Construction impacts will be minimized by adherence to applicable state regulations and to applicable FDOT Standard Specifications for Road and Bridge Construction.

Traffic Circulation

A traffic report has been developed and is in the project file. The project is expected to reduce total arterial delay during both the AM and PM peak hours in future years and the overall intersections operation during the AM and PM peak hours is improved to LOS D in 2045 (from LOS F). Projected LOS is anticipated to operate better than the No Build Alternative.

Public Parking

No public parking is expected to be impacted or modified.

3.5 Aesthetic Effects

No additional roadways or bridges are proposed, therefore, aesthetic/visual impacts to all neighborhoods are not anticipated. Existing landscaping will be impacted along the project corridor. The FDOT will coordinate with Miami-Dade County on replacement landscaping during the project's design phase. Therefore, aesthetic impacts, post-construction, are not anticipated.

Noise and Vibration

As there are existing privacy walls, the addition of noise walls is anticipated to have a minor impact to the existing viewshed. Two areas were recommended to have noise walls at 12 feet and 14 feet in height, which would replace an existing 6-foot-tall privacy wall and existing 7-foot-tall privacy hedges. These walls are proposed at the neighborhood located on the north side of Quail Roost Drive between 137th Avenue and 134th Avenue. A Noise Study Report (NSR) was completed and is in the project file.

Viewshed

Quail Roost Drive is an at-grade, existing facility which will be widened to four lanes, including the bridge crossing at Black Creek Canal. There will be no elevated lanes added to the corridor.

Compatibility

As previously mentioned, the project is compatible with the current land use and the County's proposed land use CDMP. The project is also compatible with the community's aesthetic values related to noise, vibration, and physical appearance.

3.6 Relocation Potential

Sixty-two parcels are proposed to be impacted by the Preferred Alternative, which includes three commercial parcels, five agricultural parcels, and 54 residential parcels. Eight personal properties are proposed for relocation. These relocations will be conducted in accordance with the FDOT's CSRP. There are no residential or public facilities proposed for relocation. Details on the ROW acquisition are attached.

In order to minimize the unavoidable effects of Right of Way acquisition and displacement of people, a Right of Way and Relocation Assistance Program will be carried out in accordance with Florida Statute 421.55, Relocation of displaced persons, and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646 as amended by Public Law 100-17).

3.7 Farmland Resources

This project is not subject to the provisions of the Farmland Protection Policy Act of 1981 because the project will have Federal permitting and will be lead by a Federal agency.

4. Cultural Resources

The project will not have significant impacts to cultural resources. Below is a summary of the evaluation performed.

4.1 Section 106 of the National Historic Preservation Act

The proposed project will result in unavoidable adverse effects to the resource(s) listed below, which are eligible for listing in the National Register of Historic Places (NRHP). FDOT and the State Historic Preservation Officer (SHPO) has executed a Memorandum of Agreement (MOA), which outlined conditions to minimize and mitigate the adverse effects resulting from the project. Consequently, FDOT commits to the stipulations provided below as outlined in the MOA.

A Cultural Resource Assessment Survey (CRAS) was conducted within the Area of Potential Effect (APE) to locate and evaluate the presence of resources listed in or considered eligible for listing in the National Register of Historic Places (National Register) according to the criteria outlined in 36 CFR Section 60.4. The historic resources survey identified 14 historic buildings within the APE. The unevaluated but Miami-Dade County-designated Talbott Estate (8DA2789), the previously unrecorded but Miami-Dade County-designated MacDonnell Residence (8DA20712), and the building at 20000 SW 137th Avenue (8DA20713) were each determined to be National Register-eligible. The remaining 11 identified buildings (8DA20714-8DA20724) consist mainly of Masonry Vernacular homes of a common type and style found in South Florida, and therefore, were determined to be National Register-ineligible. The buildings in four of the parcels were not visible from the public right-of-way. Each of these parcels were surrounded by fences or hedges, which significantly obscured the vision of the resources within the parcel. For this reason, Florida Master Site File (FMSF) forms could not be completed for the resources within the following parcels within the historic resources APE: 13950 SW 200th Street (c. 1952), 20200 SW 134th Avenue (c. 1947), 20240 SW 127th Avenue (c.1952), and 12555 SW 200th Street (c. 1971). Additionally, FDOT Bridge No. 870633 (built 1962) is exempt from consideration under Section 106 based on the 2012 Program Comment issued by the Advisory Council on Historic Preservation (ACHP), Streamlining Section 106 Review for Actions Affecting Post-1945 Concrete and Steel Bridges (ACHP 2012). The State Historic Preservation Office (SHPO) concurred with these findings on January 30th, 2023, and the letter is attached.

The archaeological survey and desktop analysis identified no archaeological sites and no locally designated archaeological sites or zones within the archaeological APE or within one mile of the project limits. Six shovel tests excavated during field survey revealed the presence of fill throughout each test and yielded no archaeological material. Subsurface testing was limited due to lack of access to private property, the presence of underground utilities and drainage systems, and the presence of pavement and other hardscape. Based on the results of the background research and field survey, the archaeological APE is considered to have low potential to contain intact archaeological sites.

A Section 106 Determination of Effects Case Study Report was conducted in June 2023. The report presented the evaluation of the potential effects that the proposed project activities may have on the three NRHP-eligible resources. The Criteria of Adverse Effect, as defined in 36 CFR Part 800.5, were applied to the significant historic resources to determine project effects on each of the eligible historic properties. The Preferred Alternative will have an adverse effect on the Talbott Estate (8DA2789), the MacDonnell Residence (8DA20712), and 20000 SW 137th Avenue (8DA20713). This alternative will require property acquisition from each of the parcels, and the widened facility will encroach onto the historic properties, affecting the historic buildings, their historic walls, and overall setting and other aspects of their historic integrity. In addition to direct impacts, as the ROW and improvements encroach onto the historic parcels, there may be visual effects, increases in noise and vibration, as well as changes to access. SHPO concurred with these findings on July

28th, 2023, and the letter is attached.

During the course of the project, several coordination meetings and public meetings have occurred regarding the Section 106 process. On August 23, 2022, FDOT, the FDOT Office of Environmental Management (OEM), and the consultant project team attended a meeting coordinating Section 106 Affected Parties Consultation. Section 106 consultation also took place during two affected parties consultation meetings, on October 12, 2022 and May 15, 2023. The meetings were held with the SHPO, FDOT, Miami-Dade County, potentially affected property owners, and the consultant project team. These meetings focused on the Section 106 process, proposed alternatives, the historic resources, and next steps under the Section 106 process.

The CRAS and Case Study documents are in the project file. The MOA will be finalized following the Public Hearing.

4.2 Section 4(f) of the USDOT Act of 1966, as amended

The following evaluation was conducted pursuant to Section 4(f) of the U.S. Department of Transportation Act of 1966, as amended, and 23 CFR Part 774.

Historic

As discussed above, a CRAS was completed in support of the PD&E study. The CRAS resulted in the identification of three National Register-eligible resources: The Talbott Estate (8DA2789); the MacDonell Residence (8DA20712); and the building at 20000 SW 137th Avenue (8DA20713). The SHPO concurred with the CRAS in a letter dated January 30, 2023. FDOT's findings on adverse effects on historic properties received concurrence from SHPO.

The Preferred Alternative was found to cause the least overall harm to Section 4(f) resources, but still have an adverse effect to the National Register-Eligible properties. Based on the assessment, there appears to be no prudent and feasible alternative that avoids the use of a Section 4(f) resource while meeting the Purpose and Need of the project. ROW acquisition is proposed along the property edges of all three resources due to roadway widening.

Minimization efforts were made to reduce acquisition, however, since avoidance of adverse effects to historic properties is not possible, FDOT has consulted with the SHPO, locally affected and interested parties, and the public to develop mitigation measures that resolve the adverse effect. Coordination with these parties will continue throughout the development of the project. An Individual Section 4(f) Evaluation was conducted as part of the PD&E study. However, a *Final Individual Section 4(f) Evaluation* document containing detailed analysis accompanies this Type 2 CE and is being submitted for concurrent FDOT OEM approval.

Through extensive coordination and consultation, mitigation measures were developed through a series of Affected Parties Consultation meetings. Measures to mitigate the adverse effects on the three National Register-eligible historic properties were then memorialized within a Draft MOA to be signed by FDOT District 6, FDOT OEM, and SHPO. The measures included within the MOA will also be identified as commitments in the Environmental Document and FDOT will ensure they are completed before construction. These measures include the following:

- Historic American Buildings Survey (HABS) documentation for the Talbott Estate (8DA2789), MacDonell Residence (8DA20712), and the building at 20000 SW 137th Avenue (8DA20713).

- Development and funding of one State Historic Marker.
- Preparation of a historic context addressing the use of oolitic limestone as a character- defining historic building material in Miami-Dade County in the early years of South Florida development.

To address the overall Section 106 and 4(f) processes and potential adverse effects to the significant properties, Affected Parties Consultation meetings were held on the following dates:

- October 12, 2022
- May 15, 2023
- September 11, 2023
- September 12, 2023

Documentation of the four Affected Parties Consultation meetings are located in the project file.

Recreational

Black Creek Trail- Segment of Route 7

The Black Creek Trail Segment of Route 7 is a publicly owned park crossing the the project corridor, along the east side of the South Florida Water Management District (SFWMD) Black Creek Canal (C-1W). The trail qualifies for an exception to the requirement for Section 4(f) in compliance with 23 CFR 774.13(f)(3). Exceptions identified by FHWA include, but are not limited to, "Trails, paths, bikeways, and sidewalks that occupy a transportation facility right-of- way without limitation to any specific location within that right-of-way, so long as the continuity of the trail, path, bikeway, or sidewalk is maintained." The proposed improvements are enhancements, such as widening the trail, to the existing condition of the trail and continuity of the trail is maintained. Temporary closure will be required for the improvements, however, the trail will be accessible to be used in the other portions to the north and south of this segment.

As the Official with Jurisdiction (OWJ), Miami-Dade County Parks, Recreation, and Open Spaces (MDPROS) Department issued a Statement of Significance for the Black Creek Trail-Segment of Route 7 in a letter dated June 3, 2022.

4.3 Section 6(f) of the Land and Water Conservation Fund Act of 1965

There are no properties in the project area that are protected pursuant to Section 6(f) of the Land and Water Conservation Fund of 1965.

4.4 Recreational Areas and Protected Lands

There are no other protected public lands in the project area.

5. Natural Resources

The project will not have significant impacts to natural resources. Below is a summary of the evaluation performed:

5.1 Protected Species and Habitat

The following evaluation was conducted pursuant to Section 7 of the Endangered Species Act of 1973 as amended as well as other applicable federal and state laws protecting wildlife and habitat.

The Preferred Alternative was evaluated for potential occurrences of federally listed and state-listed animal and plant species in accordance with Section 7 of the Endangered Species Act (ESA) of 1973, as amended; the Fish and Wildlife Conservation Act; the Migratory Bird Treaty Act (MBTA); Protected Species and Habitat and Essential Fish Habitat chapters of the FDOT PD&E Manual; the Florida Endangered and Threatened Species Act, Section 379.2291, Florida Statutes (FS); and Chapters 5B-40 and 68A-27 of the Florida Administrative Code (FAC).

For additional information on the following, please refer to the Natural Resources Evaluation (NRE) report completed for this project, which is located in the project file.

Species Occurrence and Effect Determinations

Habitat field reviews (performed on November 17, 2021, March 2, 2022, December 30, 2022, and March 28, 2023) were conducted to identify protected species and suitable habitat that might occur within the project study area.

A total of seven federally listed animal species, six state listed animal species, seven federally listed plant species, and one state listed plant species were identified as potentially occurring within the project study area (see **Table 1**). Additionally, while not state or federally listed under the ESA, the bald eagle (*Haliaeetus leucocephalus*), the Florida black bear (*Ursus americanus floridanus*) and the Osprey (*Pandion haliaetus*) were included in the protected species analysis due to the regulatory protections associated with these species. Though not listed under the ESA, the Tricolored bat (*Perimyotis subflavus*) (proposed endangered) and the Monarch butterfly (*Danaus plexippus*) (candidate species) are currently proposed for ESA listing and included in this evaluation.

A determination of May Affect, Not Likely to Adversely Affect (MANLAA) was concluded for the West Indian manatee, due to in-water work, and eastern indigo snake, due to minor impacts to habitat, using USFWS Determination Keys (see attached). Per the Keys, no additional Consultation with U.S. Fish and Wildlife Service (USFWS) is required. The 2024 Standard Protection Measures for the Eastern Indigo Snake will be adhered to during construction. A determination of No Effect was concluded for all other species due to lack of suitable habitat present, lack of evidence of species presence, and/or no impacts to species or their habitat. For the Florida bonneted bat (FBB), an additional survey will be conducted by the FDOT prior to construction. If any signs of the FBB are observed, the FDOT is committed to reinitiating consultation with the USFWS to determine the appropriate course of action. **Table 1** and **Table 2** provides a summary of the federally listed and state-listed animal and plant species with potential to occur within the limits of the Preferred Alternative, along with their corresponding effect determinations. None of the species discussed in the tables were observed during field reviews.

Table 1 - Federally & State Listed Species

Protected Species		JurisdictionalAgency		Potential of Occurrence	Effect Determination
Common Name	**Scientific Name**			**USFWS/ NMFS**	**FWC/ FDACS**
MAMMALS					
Florida bonneted bat	*Eumops floridanus*	E	E	Low	*No Effect*
West Indian manatee	*Trichechus manatus latirostris*	T	T	Low	*May Affect, Not Likely to Adversely Affect*
Tricolored bat***	*Perimyotis subflavus*	C	NL	Low	*Proposed Endangered*
Florida black bear**	*Ursus americanus floridanus*	NL	68A-4.009 FAC	Low	*N/A*
REPTILES					
American crocodile	*Crocodylus acutus*	T	T	Low	*No Effect*
Eastern indigo snake	*Drymarchon couperi*	T	T	Low	*May Affect, Not Likely to Adversely Affect*
Florida pine snake	*Pituophis melanoleucus mugitus*	NL	T	Low	*No effect anticipated*
Gopher tortoise	*Gopherus polyphemus*	NL	T	Low	*No effect anticipated*
BIRDS					
Bald eagle*	*Haliateetus leucocephalus*	BGEPA/ MBTA	68A-16.002 FAC	Low	*N/A*
Osprey*	*Pandion haliaetus*	MBTA	NA	Low	*N/A*
Wood stork	*Mycteria americana*	T	T	Low	*No Effect*
Little blue heron	*Egretta caerulea*	NL	T	Low	*No effect anticipated*
Reddish egret	*Egretta rufescens*	NL	T	Low	*No effect anticipated*
Tricolored Heron	*Egretta tricolor*	NL	T	Low	*No effect anticipated*
Florida burrowing owl	*Athene cunicularia floridana*	NL	T	Low	*No effect anticipated*
INSECTS					
Bartram's Hairstreak Butterfly	*Strymon acis bartrami*	E	E	Moderate	*No Effect*
Monarch Butterfly	*Danaus plexippus*	C	NL	Moderate	*Candidate Species*

Definitions:
E = Endangered, **T** = Threatened, , **C**= Candidate Species, **NL**= Not Listed
Low = Minimal suitable habitat present and no documented occurrences within or near the project study area. **Moderate** = Potentially suitable habitat present and/or documented occurrences near the project study area. **High** = Suitable habitat present and documented occurrences within the project study area.
***** *Removed from Florida's Endangered and Threatened Species List in 2008 but is still protected under the Bald and Golden Eagle Protection Act (BGEPA), Migratory Bird Treaty Act (MBTA), and Florida Administrative Code (FAC).*
*** Removed from Florida's Endangered and Threatened Species List in 2012, but is still protected under the Florida Black Bear Conservation FAC.*
**** USFWS has proposed to list the tricolored bat as an endangered species under the ESA.*

Table 2 - Federally Listed Plant Species

Federally Listed Plant Species		**Listing Status**	**Effect Determination**
Common Name			**Scientific Name**
Blodgett's Silverbush	*Argythamnia blodgettii*	Threatened	***No Effect***
Florida Brickell-bush	*Brickellia mosieri*	Endangered	***No Effect***
Florida Prairie-clover	*Dalea carthagenensis floridana*	Endangered	***No Effect***
Garber's Spurge	*Chamaesyce garberi*	Endangered	***No Effect***
Sand Flax	*Linum arenicola*	Endangered	***No Effect***
Small's Milkpea	*Galactia smallii*	Endangered	***No Effect***
Tiny Polygala	*Polygala smallii*	Endangered	***No Effect***

Since there is very limited habitat for these plant species and the area within the project study area is regularly mowed and maintained, it is unlikely that occurrences of these federally protected plant species will be observed within the project study area. Therefore, the project is expected to have No Effect on the federally protected plant species.

Quail Roost Drive and the surrounding project study area has been significantly altered by development. During field reviews, the state designated as endangered species, Florida royal palm (*Roystonea regia*) were observed throughout the corridor as part of the planted landscaping. Some individual palms may be impacted and/or possibly relocated due to their current location. At the time of this NRE, the exact palms that may be impacted are unknown. Due to the Florida royal palm being a state listed endangered species, coordination with Florida Department of Agriculture and Consumer Services (FDACS) will be required.

These palms are known to provide roost habitats for the FBB, therefore prior to commencing construction activities, any royal palm to be removed or relocated will be surveyed for signs of FBB. If any signs of the FBB are observed, the FDOT is committed to reinitiating consultation with the USFWS to determine the appropriate course of action. An effect determination of Potential for Adverse Effecton the royal palm is anticipated as a result of this project.

A discussion of potential impacts to each of the species listed in the above tables is included in the NRE. The discussion includes characterizations of each species and potential impacts resulting from each of the preferred alternative. Conservation and/or minimization of impacts measures are also included in the discussion of the NRE. The resulting effect determinations of these discussions for each of these species is included in the tables above.

Critical Habitats

Critical Habitat is a specific, federally designated, geographic area that is essential for the conservation of a threatened or endangered species that may require special management and protection. Critical Habitat may include an area that is not currently occupied by the species, but that will be needed for its recovery. Based on the review of USFWS and National Marine Fisheries Service (NMFS) Geographic Information Systems (GIS) data and literature, there are no designated critical habitats documented within the project study area. Therefore, no adverse impacts to federally designated critical habitats are expected to occur as a result of the proposed project.

5.2 Wetlands and Other Surface Waters

The following evaluation was conducted pursuant to Presidential Executive Order 11990 of 1977 as amended, Protection of Wetlands and the USDOT Order 5660.1A, Preservation of the Nation's Wetlands.

On November 17, 2021, and March 2, 2022, field reviews were conducted for the project study area to verify preliminary wetland, surface water community, stormwater retention/conveyance feature boundaries, and land use classifications. During field investigations, each wetland/surface water habitat within the project study area was visually inspected, assessed, and photographed. Attention was given to identifying plant species composition for each community type. Wildlife observations and signs of wildlife usage within each surface water habitat within the project study area were also documented. Mapped habitat boundaries and field observations were compared with the State of Florida Wetlands Delineation Manual (Chapter 62340, FAC) and the guidelines found within the Regional Supplement to the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual: Atlantic and Gulf Coastal Region. It was determined there are no jurisdictional wetlands located within the project study area.

One Other Surface Water (OSW) is present. The Black Creek Canal (C-1W) primarily functions as a stormwater conveyance canal. The overall wildlife habitat quality of this canal is low due to lack of vegetation and proximity to major roadways. Wildlife species observed during the field review included the green iguana (*Iguana iguana*) and one large sized goldfish (*Carassius auratus*).

The Preferred Alternative will result in impacts to the existing canal due to the proposed bridge replacement. All parts of the existing bridge will be removed in its entirety, including the existing end bents, intermediate piers, existing fender system, and bascule piers. Piles will be removed 2' below the mudline.

The drainage approach will include maintaining existing corridor drainage flow patterns which does not include existing outfall connections to the Black Creek Canal (C-1W). The proposed system does not include any new outfall connections. Approximately 0.6 acres of impacts to OSW are anticipated. Mitigation is not required for OSWs.

Avoidance and Minimization

All necessary measures will be taken to avoid and/or minimize impacts to the surface water feature during project design. While mitigation is not required, best management practices (BMPs) will be utilized during construction. In addition, all applicable permits will be obtained or modified in accordance with federal, state, and local laws and regulations. Further, the proposed stormwater management system does not include discharges into the canal and the design will make every effort to maximize the treatment of stormwater runoff from the proposed project. Due to the impacts to OSWs being minor and BMPs in place during construction, no secondary or cumulative impacts are anticipated.

The proposed Preferred Alternative was evaluated for impacts to wetlands and surface waters in accordance with EO 11990. No impacts to vegetated wetland resources will occur as a result of the proposed Preferred Alternative. However, based on the location of the existing roadway network and the need for the proposed bridge replacement, the FDOT has determined that there is no practicable alternative to completely avoid impacts to the surface water feature identified. The proposed project will have no significant short-term or long-term adverse impacts to wetlands or surface waters. In accordance with EO 11990, the FDOT has undertaken all actions to avoid and minimize the destruction, loss or degradation of wetlands and surface waters, and to preserve and enhance the natural and beneficial values of wetlands/surface waters in carrying out the agency's responsibilities

Agency Coordination

An interagency meeting with the SFWMD ROW department was conducted on June 16, 2022, to discuss the proposed improvements within the ROW of the Black Creek Canal (C-1W). A summary of the topics discussed is included in Appendix I of the NRE.

5.3 Essential Fish Habitat (EFH)

There is no Essential Fish Habitat (EFH) in the project area.

5.4 Floodplains

Floodplain impacts resulting from the project were evaluated pursuant to Executive Order 11988 of 1977, Floodplain Management.

Quail Roost Drive presents favorable field conditions for drainage. The corridor is located within high terrain, with a relatively low groundwater table and excellent limestone percolation. Given these conditions, a self-contained French drain system is found to be typically the most effective and economic stormwater management system for the project. The approach will include maintaining existing corridor drainage flow patterns which does not include existing outfall connections to the Black Creek Canal (C-1W). The proposed system will not be provided with outfall connections.

The project includes a bridge crossing over the Black Creek Canal (C-1W) approximately at the mid-section of the project. The Black Creek Canal (C-1W) is a primary canal owned, operated, and maintained by the SFWMD. However, the project does not have any existing outfall connections into this canal. The project's existing drainage infrastructure is self-contained and consists mainly of roadside swales with inlets connected to isolated short segments for French drains providing runoff disposal. The project's proposed stormwater management systems will be also designed as self-contained French drain systems.

Based on the conceptual drainage design evaluation for the proposed improvements, the stormwater management facilities will meet FDOT drainage criteria as well as SFWMD permit criteria. The improvements will have no negative drainage impacts to the surrounding areas and the proposed stormwater management facilities will have the capacity to adequately treat and attenuate roadway runoff within the project limits.

The project lies within the Federal Emergency Management Agency's (FEMA) 100-year floodplain, within Zone X with base flood elevations (see **Figure 3** attached). There is no anticipated adverse floodplain impacts associated with this project. The modifications to the drainage systems due to this project are not anticipated to result in a significant change in capacity to carry floodwater, with minimal to no increase in flood heights and flood limits. Floodplain analysis is documented in Section 6.0 Design Features of the Preferred Alternative in the Preliminary Engineering Report (PER).

5.5 Sole Source Aquifer

Biscayne Aquifer

This project lies within the boundaries of the Biscayne Sole Source Aquifer. In accordance with the Sole Source Aquifer Program, authorized by Section 1424(e) of the Safe Drinking Water Act of 1974, the Environmental Protection Agency (EPA) issued concurrence on October 4, 2023, regarding no potential impacts to the Biscayne Aquifer. The EPA Concurrence letter is attached and the EPA SSA questions are in the project file.

5.6 Water Resources

The Black Creek Canal (C-1W) is a primary canal owned, operated, and maintained by the SFWMD. The Preferred Alternative will result in approximately 0.6 acres of impacts due to the proposed bridge replacement over the Black Creek Canal (C-1W). The approach for discharge/treatment will include maintaining existing corridor drainage flow patterns, which do not include existing outfall connections to the Black Creek Canal (C-1W). The project's runoff disposal, both for water quality and water quantity control, is handled by French drains. The proposed French drain system is a self-contained system (no outfalls or overflow connections into the canal). Excellent soil percolation conditions (high exfiltration) added to high topography (gravity head) allows for this type of drainage system setup. BMPs to address potential water quality and stormwater impacts during construction include inlet protection, silt fence, and floating turbidity barriers in the Black Creek Canal (C-1W).

It is anticipated that a SFWMD Environmental Resources Permit (ERP), Florida Department of Environmental Protection (FDEP) National Pollutant Discharge Elimination System (NPDES), and Stormwater Pollution Prevention Plan (SWPPP) will be required for this project.

A Water Quality Evaluation Checklist (WQIE) was completed and is in the project file.

5.7 Aquatic Preserves

There are no aquatic preserves in the project area.

5.8 Outstanding Florida Waters

There are no Outstanding Florida Waters (OFW) in the project area.

5.9 Wild and Scenic Rivers

There are no designated Wild and Scenic Rivers or other protected rivers in the project area.

5.10 Coastal Barrier Resources

There are no Coastal Barrier Resources in the project area.

6. Physical Resources

The project will not have significant impacts to physical resources. Below is a summary of the evaluation performed for these resources.

6.1 Highway Traffic Noise

The following evaluation was conducted pursuant to 23 CFR 772 Procedures for Abatement of Highway Traffic Noise and Construction Noise, and Section 335.17, F.S., State highway construction; means of noise abatement.

This project is a Type I Project. Design year (2045) traffic noise levels for the Preferred Alternative will approach, meet, or exceed the Noise Abatement Criteria (NAC) at 53 residential sites, at Charles Burr Park, and within 20 feet of the trail crossing of Black Creek Trail across Quail Roost Drive. In accordance with FHWA and FDOT policies, the feasibility and reasonableness of noise barriers were considered for these impacted noise sensitive sites. Noise barrier systems were evaluated for four Noise Sensitive Areas (NSA), and two noise barrier systems are recommended for further consideration during the project's design phase and for public input by 19 benefited residential land use sites within NSA 1 and NSA 4. The NSR is located in the project file.

Two hundred thirty-five noise sensitive land uses were identified along the project corridor that can potentially be impacted by traffic noise associated with the project. These noise sensitive land uses are comprised of 229 single family residences, three of which are of historic significance, four places of worship, a public park and a shared use trail system.

Noise barriers were considered a feasible and reasonable abatement option for Common Noise Environment (CNE) 1A. A two-part conceptual barrier system, totaling 540 feet in length and 10 feet in height, located near the project right-of-way between SW 135th Avenue and SW 134th Avenue north of Quail Roost Drive, benefits four impacted receptors at an estimated cost of $162,000, or $40,500 per benefited receptor. Noise barriers were also considered a feasible and reasonable abatement option for CNE 4A. A two-part conceptual barrier system, 1,260 feet in length and 12 feet in height, located near the project right-of-way between SW 130th Avenue and SW 128th Avenue south of Quail Roost Drive, benefits 15 impacted receptors at an estimated cost of $453,600 or $30,240 per benefited receptor. Noise barriers were considered not feasible and not reasonable for CNEs 1C, 2A, 3A, 4B, 4C, and 5A. Due to the close proximity of pools and residences adjacent to the proposed Quail Roost Drive improvements, it was determined that noise barriers within CNE 2A and 3A would require the acquisition of additional right-of-way for construction and continued maintenance, up to and including complete property acquisitions, and at locations determined to be of historic significance (R3.01, R3.05), in addition to not meeting FDOT cost criteria.

Noise barriers were considered not feasible for CNE 1C due to design limitations caused by driveway access requirements by multiple project adjacent homes. Noise barriers were considered cost-reasonable but not feasible in CNEs 1B and 3B, also due to insufficient available right-of-way for construction and maintenance. Comparatively, residences in CNE 4A sit farther back from the existing facilities than CNE 3B, and additional area exists between the existing facilities and residential property lines in CNE 4A which facilitates the feasibility of noise barriers along CNE 4A. Noise barriers were considered not feasible and not reasonable for CNE 4B and CNE 4C as they do not meet the noise reduction design goal or cost criteria determined by FDOT's special land use methodology. Noise barriers were considered not feasible for CNE 5A due to intersection sight line requirements. The cost per benefited receptor of each noise barrier design is within FDOT's noise barrier cost criteria of equal to or less than $42,000 per benefited receptor site

and they will meet FDOT's noise reduction reasonableness criteria of 7 dB(A) at one or more impacted sites.

The recommended noise barriers along Quail Roost Drive are expected to reduce traffic noise by an average of 8.7 dB(A) at 22 of the 46 impacted residences along the project corridor. The estimated cost of the recommended noise barriers is $680,400. Additional noise barrier analyses will be performed during the project's design phase when more detailed project design information is available. It is during the project's design phase that final decisions regarding noise barrier length and height are made, and an engineering constructability review is conducted to confirm that the noise barrier is feasible and support for noise barriers from the benefited noise sensitive sites is determined. A summary of the NSAs cam be found in the NSR. FDOT is committed to the construction of feasible noise abatement measures (i.e., recommended noise barriers) at the noise impacted locations described upon the following conditions:

- Final recommendations on the construction of abatement measures are determined during the project's design and through the public involvement process;
- Detailed noise analyses during the final design process support the need, feasibility and reasonableness of providing abatement;
- Cost analysis indicates that the cost of the noise barrier(s) will not exceed the cost reasonable criterion;
- Community input supporting types, heights, and locations of the noise barrier(s) is provided to the District Office; and
- Safety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed and any conflicts or issues resolved.

6.2 Air Quality

This project is not expected to create adverse impacts on air quality because the project area is in attainment for all National Ambient Air Quality Standards (NAAQS) and because the project is expected to not change the Level of Service (LOS) and reduce delay and congestion on all facilities within the study area.
Construction activities may cause short-term air quality impacts in the form of dust from earthwork and unpaved roads. These impacts will be minimized by adherence to applicable state regulations and to applicable FDOT Standard Specifications for Road and Bridge Construction.

The project corridor is located in the southern portion of Miami-Dade County, which is part of Southeast Florida Region of Palm Beach, Broward, and Miami-Dade Counties. The predominant land use present is Residential followed by Agricultural, Commercial and Services, Industrial, Institutional, and Transportation.

Miami-Dade County is an area currently designated as being in attainment for particulate matter (2.5 microns in size and 10 microns in size) and carbon monoxide (CO). The project alternatives were not subjected to a CO screening model since the project is a Type 2 Categorical Exclusion (Type 2 CE), is located in an attainment area for National Ambient Air Quality Standards (NAAQS) and does not meet the following thresholds per Section 19.2.2.1, Part 2, Chapter 19 of the PD&E Manual:

1. The project is an Environmental Impact Statement (EIS) and/or;
2. The total vehicular delay time (veh-hours) at an intersection in the design year build condition is projected to increase when compared to the design year no-build condition and/or;
3. The project is expected to have community controversy regarding air quality. (Coordination with District specialists may be required to determine potential community controversy.)

In addition, since Florida is in attainment for particulate matter, no project level analysis is needed according to Part 2, Chapter 19 of the PD&E Manual. Since the Class of Action has been determined to be a Type 2 Categorical Exclusion (CE), the project has no potential meaningful Mobile Source Air Toxics (MSAT) effects and is exempt from a MSAT analysis according to Part 2, Chapter 19 of the PD&E Manual.

This project is not expected to create adverse impacts on air quality because the project area is in attainment for all NAAQS. Therefore, the Clean Air Act (CAA) conformity requirements do not apply to the project. Additionally, the project is expected to improve the LOS and reduce delay and congestion on all facilities within the study area.

Construction activities may cause short-term air quality impacts in the form of dust from earthwork and unpaved roads. These impacts will be minimized by adherence to applicable state regulations and to applicable FDOT Standard Specifications for Road and Bridge Construction.

The Air Quality Technical Memorandum is located in the project file.

6.3 Contamination

Potential contamination impacts in the area surrounding the project corridor were assessed for all viable Build Alternatives as well as the No-Build Alternative. For the viable Build Alternatives, the degree of potential contamination concerns is equivalent due to the location and distance of the potential contaminated sites with reference to the proposed project layout.

After a review of all available data, such as agency file reviews at FDEP, aerial photography, and confirmed by site reconnaissance, contamination of groundwater has been documented in the vicinity of the project corridor. A total of five sites of potential environmental concern were identified for the project corridor; of these, one site is rated as High risk, one site is rated as Medium risk, and three sites are rated as Low Risk (see **Table 3** below). The review did not identify any No Risk sites. The status of the sites will be updated accordingly at each future design phase. Remaining sites identified in the above-referenced sources are not considered to pose potential contamination concerns because of the current regulatory status of the site and/or the distance from the project corridor.

Table 3 - Potentially Contaminated Sites in the Vicinity of the Project Corridor

Site ID	Property Description	Address	Facility ID	Environmental Compliance Agency	Regulated Storage Tanks	Distance from Project	Contamination Concern / Regulatory Status	Risk Rating
H1	Coin Laundry	12390 Quail Roost Drive	ERIC_4511	FDEP	Yes	Directly adjacent	DEP Dry cleaning Solvent Program; status unknown	High
M1	Richard Lyons Nursery	20200 SW 134th Ave	ERIC_15241	FDEP	No	0.07 miles south	Heptachlor and Dieldrin (pesticides) as well as Arsenic in private well water	Medium
L1	Kendall Nursery and Landscaping IV	13650 SW 200th Street	N/A	N/A	No	Directly adjacent	Potential contamination from pesticides/etc.	Low

L2	Benmarqz Nursery and Landscaping	13400 SW 200th Street	N/A	N/A	No	Directly adjacent	Potential contamination from pesticides/etc.	Low
L3	7/11 Gas Station	12720 SW 200th Street	N/A	N/A	Yes	Directly adjacent	None	Low

The FDOT District VI Planning and Environmental Management Office will utilize the information contained in this report to determine the need for additional investigation during the design phase of the Project. A Level II Contamination Assessment investigation will be conducted on Medium and High Risk sites prior to any right-of-way acquisition and/or prior to the design phase. Based on the findings of updated future review and Level II investigation, the design engineers may be instructed to avoid the areas of concern or to include special provisions with the plans to require that the construction activities performed in the areas of concern be performed or supervised by a contamination assessment and remediation contractor specified by the FDOT.

It must be recognized that the possibility exists that some contaminated substances, petroleum products, or environmental contamination not identified during this assessment may exist on or in the immediate vicinity of the project.

If dewatering is necessary during construction, a Water Use Permit from the Department of Environmental Resources Management (DERM)/SFWMD is anticipated. The contractor will be held responsible for ensuring compliance with any necessary dewatering permit(s). The dewatering plan will need to consider the radius of influence of any dewatering activity on nearby contamination plumes to avoid potential contamination plume exacerbation. The status of the sites will be updated accordingly at each future design phase. All permits will be obtained in accordance with Federal, State, and local laws and regulations.

In addition, the contractor shall follow applicable FDOT Standard Specifications for Road and Bridge Construction for areas of unforeseen contamination. These specifications require that in the event any hazardous material or suspected contamination is encountered during construction, or any spills are caused by construction-related activities, the Contractor shall be instructed to stop work immediately and notify the FDOT Construction Project Manager.

A heavy metal survey is recommended and a survey for Asbestos Containing Material (ACM) may be required during final design on the Black Creek Canal Bridge.

The Contamination Screening Evaluation Report (CSER) is located in the project file.

6.4 Utilities and Railroads

Utility Agency Owners (UAOs) located in the vicinity of Quail Roost Drive were contacted and requested to provide information regarding their utility facilities within the project area. A list of UAOs was obtained through Sunshine 811 on December 15, 2020. Utilities include electric, water, sewer, cable, and telephone. Utility providers within the project area include:

- AT&T Distribution: overhead telephone/fiber, buried telephone, buried fiber, placed out of service facilities, pole, cabinets and handholes within the study limits.
- Comcast: Existing aerial and buried facilities were provided by Comcast within the study corridor highlighted by solid and dashed orange lines on markups. The east/west trajectory along north and south side of Quail Roost Drive as

attached to the existing FPL poles. Comcast utility information was provided via base map markups during the coordination phase

- Crown Castle: Four (4) 1.5" HDPE conduits, aerial fiber, riser pole and hand holes within the study corridor were provided by the UAO.
- DCPWT
- FPL (Distribution): The UAO provided mark ups, record drawings, as-built prints, check prints and referenced primary maps. documentation of the location of exisitng electric distribution facilities, consisting of 13kV and 120/240V overhead electric pole line along with underground buried electric street light circuit lines within the study limits
- MCI (Verizon): According to the review conducted by MCI/Verizon, the UAO does not have facilities within the proposed project limits. MCI/Verizon noted their facilities are within general area and should be contacted if project limits are extended to analyze potential impacts.
- Miami-Dade County Information (MDC) Technology Department (ITD): the UAO indicated no conflict within the PD&E study limits.
- Miami-Dade Public Works and Traffic: The location of the facilities was not provided by Miami-Dade Public Works at this phase. Potential impacts to street lighting and traffic signals (if any) are to be coordinated with Miami-Dade County Public Works and Traffic in future phases of the project.
- Miami-Dade Water and Sewer Department (MD-WASD): The UAO provided water and sewer as-builts and atlas for facilities within the project limits. Water Distribution System includes: 48" Concrete Water Main, 16" DIP Water Main, 12" DIP and 8" DIP Water Mains at intersecting streets 48" PCCP Water Main, along with tie-in to fire hydrants and residential/commercial water service lines, water valves, tapping valves. Sanitary Sewer System includes: 4" and 8" Force Main, sludge line, manholes, cleanouts, fire hydrants and water valves at the locations indicated below. MD-WASD may consider entering into a Joint Participation Agreement (JPA) for relocation work, if needed, when project reaches 60% phase development. As-Builts depict 5' Right of Way Easement at NW Corner of SW 127th Avenue and SR-994/Quail Roost Drive.

Utility coordination will continue throughout the design. There are no railroad crossings within the project study area. The Utilities Assessment Package is located in the project file.

6.5 Construction

Best Management Practices will be used during construction to avoid/minimize construction impacts such as dust or other airborne pollutants, temporary noise, and stormwater runoff from the construction area. During construction, the project will adhere to the FDEP NPDES construction permit criteria as well as the associated SWPPP. FDOT will also adhere to construction permit conditions contained within the ERP and/or Section 404 permit.

7. Engineering Analysis Support

The engineering analysis supporting this environmental document is contained within the PER.

8. Permits

The following environmental permits are anticipated for this project:

Federal Permit(s)	Status
USACE Section 10 or Section 404 Permit	To be acquired
USACE Section 408 Permit	To be acquired

State Permit(s)	Status
DEP or WMD Environmental Resource Permit (ERP)	To be acquired
DEP National Pollutant Discharge Elimination System Permit	To be acquired
WMD Right of Way Permit	To be acquired

Permits Comments

Section 408 approval is anticipated from the USACE for modifications to the Black Creek Canal (C-1W). A USACE 404 permit is required for filling in the Black Creek Canal (C-1W).

The SFWMD requires an ERP when construction of any project results in the modification or creation of a water management system or results in impacts to wetlands or waters of the state. Although ERPs exist for portions of the corridor, it is anticipated that a new Individual ERP will be required for this entire project. It is also anticipated that a ROW Occupancy Permit for work within the SFWMD's ROW of the Black Creek Canal (C-1W) will be required per coordination with the district's ROW department.

Under the FDEP's delegated authority to administer the NPDES program, construction sites that will result in greater than one acre of disturbance must file for and obtain either coverage under an appropriate generic permit or an individual permit for point source discharges of stormwater to waters of the United States. A major component of the NPDES permit is the development of a SWPPP. The SWPPP identifies potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the site and discusses good engineering practices (i.e., BMPs) that will be used to reduce the pollutants.

9. Public Involvement

The following is a summary of public involvement activities conducted for this project:

Summary of Activities Other than the Public Hearing
A public involvement program was developed and implemented for this PD&E Study. The program is documented in the Public Involvement Plan (PIP), located in the project file. The PIP is a working document that is updated and amended throughout the project development process to incorporate the latest public involvement policies and techniques as they evolve during the life of the project. The PIP outlines the public involvement approach and activities required to be undertaken with the project, including lists of the contact persons, such as citizens, private groups (residential/business), officials, agencies, stakeholders, and media, and the means used to involve them in the process.

The purpose of the PIP is to assist in providing information to and obtaining input from concerned citizens, agencies, private groups (residential/business), and governmental entities. The overall goal of the plan is to help ensure that the study reflects the values and needs of the communities it is designed to benefit.

Public information meetings began in January 2022 and have continued throughout the study process. Exhibits and project information have been provided for public review and comment at each meeting. Exhibits and project information are also available on the project website (https://www.fdotmiamidade.com/QuailRoostPDE.html). FDOT representatives were available at each meeting to discuss the project and answer questions, as well as members of the consultant team.

The following public/agency meetings have taken place to date:

Elected Official/Agency and Public Kick-Off Meetings
A hybrid kick-off meeting (virtual and in-person) for elected officials and agencies was held on Thursday, January 27, 2022. The in-person meeting was held at the South Dade Regional Library located at 10750 SW 211 Street, Cutler Bay, Florida. The purpose of this meeting was to present the study along the corridor. The meeting provided Elected Officials, agencies, and the public with an opportunity to learn about PD&E planning and development stage and purpose and need of the study. They were also able to provide comments and questions about the existing corridor conditions. See project file for details including sign-in sheets, questions received, invitation letters, advertisement, and presentation.

Comments and questions from the public at this meeting included asking for additional explanation on improvements due to proximity to their residences. Staff gave more detailed explanations on the proposed improvements. Several people stated their concern for safety when making left turns out of local neighborhoods onto Quail Roost Drive. The team explained how the project includes safety improvements to address this.

Affected Parties Consultation Meeting #1
A hybrid Affected Parties Consultation meeting was held on October 12, 2022, to discuss the Quail Roost Drive PD&E Study from West of SW 137 Avenue to East of SW 127 Avenue. The in-person meeting was held at the South Dade Regional Library located at 10750 SW 211 Street, Cutler Bay, Florida. The purpose of this workshop was to present the upcoming project. The meeting provided directly affected property owners with an overview of alternatives and opportunity to provide comments and questions about the anticipated impacts to the historic properties located at: 13390 SW 200 Street, 20000 SW 137 Avenue, and 13701 Quail Roost Drive. See the project file for details including sign-in sheets, questions received, invitation letters, and presentation.

Comments from the affected parties included a comment from the resident of the National Register-eligible property, MacDonell House. Ms. MacDonell asked how she could get support to move the historic wall to allow for safety improvements on the project. The team stated that this could be a mitigation measure and that the Department would consider this.

Alternatives Public Workshop

A hybrid Alternatives Public Workshop was held on October 18, 2022. The in-person meeting was held at the South Dade Regional Library located at 10750 SW 211 Street, Cutler Bay, Florida. Project alternatives were presented and feedback about the concepts was received. Polling questions were conducted throughout the presentation. See the project file for details including sign-in sheets, questions received, invitation letters, advertisement, and presentation.

Comments and questions from the public at this meeting included concerns for safety at the bridge underpass, mentioning alligators. The team stated that there would be a railing along the canal. One person stated that she was in favor of Alternative 1, as the other alternatives increase noise. The team stated there is not a significant difference in noise between alternatives. One person asked how long temporary traffic control would last. The team stated that as the bridge would take the longest to construct, the people living near the bridge will likely have the lonest impact. He stated in total it would last about two years. One person asked about the utility and drainage impact for Alternatives 2 and 3. The team stated impacts would be more significant for these alternatives. One person asked if the team would be mixing and matching different alternatives. The team stated this was not the intent, but it may occur due to minimization efforts. One person asked how the bridge widening would impact the adjacent properties. The team stated that there are no impacts with Alternative 1 but with 2 and 3 there are minor impacts. One person asked if there would be lighting for the bridge underpass, to which the team responded that there will be. One person described the heavy traffic around 133 and 132 Place, to which the team responded that 137th Avenue may be widened in the future.

Affected Parties Consultation Meeting #2

A hybrid Affected Parties Consultation workshop was held on May 15, 2023, to discuss the Quail Roost Drive PD&E Study from West of SW 137 Avenue to East of SW 127 Avenue. The in-person meeting was held at the South Dade Regional Library located at 10750 SW 211 Street, Cutler Bay, Florida. The purpose of this workshop was to update plans and progress on the project from the last meeting. The meeting provided directly affected property owners with an overview of alternatives and opportunity to provide comment and questions about the anticipated impacts to these historic properties located at: 13390 SW 200 Street, 20000 SW 137 Avenue, and 13701 SW 200 Street. See the project file for details including meeting notes and presentation.

Comments from the affected parties included a question from the resident of the National Register-eligible property, 20000 SW 137 Avenue. The resident asked whether the distance from her home and the street would be 8 feet as she expressed concerns that in the event of an accident, a car could crash into her home. The team confirmed that the distance would be 8 feet, but that the alternatives are still being finalized. Another property owner inquired about how the noise would impact their home.

Affected Parties Consultation Meeting #3

An Affected Parties Consultation meeting was held on September 11, 2023, to discuss the Quail Roost Drive PD&E Study from West of SW 137 Avenue to East of SW 127 Avenue. The purpose of this meeting was to follow-up with the property owner located at 20000 SW 137 Avenue after the Affected Parties Consultation workshop which took place on May 15, 2023. The meeting took place at the property site and it allowed for the project team to exemplify the proposed ROW acquisition on the property and to consult with the owner regarding potential impacts to their historic property, as well as to

receive input from the property owner regarding potential mitigation strategies. See the project file for meeting notes.

Comments from the affected parties included a comment from a property owner stating that they wished their property did not have to be impacted, however, they understand that safety improvements are necessary for the well-being of the community, and therefore, they are in support of the project.

Affected Parties Consultation Meeting #4
An Affected Parties Consultation meeting was held on September 12, 2023, to discuss the Quail Roost Drive PD&E Study from West of SW 137 Avenue to East of SW 127 Avenue. The purpose of this meeting was to follow-up with the property owner located at 13390 SW 200 Street (Talbot Estate) after the Affected Parties Consultation workshop which took place on May 15, 2023. The meeting took place at the property site and it allowed for the project team to exemplify the proposed ROW acquisition on the property and to consult with the owner regarding potential impacts to their historic property, as well as to receive input from the property owner regarding potential mitigation strategies. See the project file for meeting notes.

Comments from the affected parties included comments from the resident of the National Register-eligible property, Talbott Estate. He expressed concern that the proposed ROW line will touch their house. The team explained that it will not impact the structure. The property owner described future plans for the property which included construction of several villas. He stated that he will take the ROW acquisition into consideration when considering the villas. He also expressed interest in moving the historic wall to avoid impacts from the project and requested a tree survey take place to take inventory of the trees to be impacted. The team stated that a tree survey would likely take place at a later date.

10. Commitments Summary

1. FDOT will prepare a historic context addressing the use of oolitic limestone as a character- defining historic building material in Miami-Dade County in the early years of South Florida development.
2. FDOT will prepare HABS documentation for the Talbott Estate (8DA2789), MacDonell Residence (8DA20712), and the building at 20000 SW 137th Avenue (8DA20713).
3. FDOT will develop and fund one State Historic Marker.
4. Prior to commencing construction activities, the FDOT is committed to re-surveying the project study area for features that could serve as potential roosting habitat and signs of the Florida bonneted bat. If any signs of the Florida bonneted bat are observed, the FDOT is committed to initiating consultation with the USFWS to determine the appropriate course of action.
5. During the construction phase of this project, the FDOT will adhere to the most recent version of the USFWS' *Standard Manatee Conditions for In-Water Work* to minimize the potential for adverse effects.
6. During the construction phase of this project, the FDOT will adhere to the most recent version of the USFWS' *Standard Protection Measures for the Eastern Indigo Snake* to minimize the potential for adverse effects.
7. If the listing status of the tricolored bat is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area during the design and permitting phase of the proposed project, FDOT commits to re-initiating consultation with the USFWS to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the tricolored bat.
8. If the listing status of the monarch butterfly is elevated by USFWS to Threatened or Endangered and the Preferred Alternative is located within the consultation area, during the design and permitting phase of the proposed project, FDOT commits to re-initiating consultation with the USFWS to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the monarch butterfly.
9. FDOT is committed to the construction of feasible noise abatement measures (i.e., recommended noise barriers) at the noise impacted locations described upon the following conditions:

   Final recommendations on the construction of abatement measures are determined during the project's design and through the public involvement process;Detailed noise analyses during the final design process support the need, feasibility and reasonableness of providing abatement;Cost analysis indicates that the cost of the noise barrier(s) will not exceed the cost reasonable criterion;Community input supporting types, heights, and locations of the noise barrier(s) is provided to the District Office; andSafety and engineering aspects as related to the roadway user and the adjacent property owner have been reviewed and any conflicts or issues resolved.

11. Technical Materials

The following technical materials have been prepared to support this Environmental Document and are included in the Project File.

SCE
CSRP
Individual Section 4(f) Report
CRAS
Section 106 Case Study Report
NRE
WQIE Checklist
SSA EPA Coordination Questions
AQTM
Utility Assessment Package
CSER
NSR
Typical Section Package
Bridge Analysis Report
Design Variation Memorandum
PTAR
PER
PER-Appendices
Conceptual Drainage Report
Value Engineering Report
PIP

Attachments

Planning Consistency

Project Plan Consistency Documentation-LRTP
Project Plan Consistency Documentation-TIP
Project Plan Consistency Documentation-STIP

Social and Economic

ROW Table
Figure 2- Land Use Map

Cultural Resources

Black Creek Trail Statement of Significance Letter
Section 106 SHPO Concurrence
SHPO Concurrence

Natural Resources

Figure 3- Floodplains Map
EPA Concurrence
USFWS Eastern Indigo Snake Determination Key
USFWS Manatee Determination Key
USFWS Wood Stork Determination Key

Planning Consistency Appendix

Contents:

Project Plan Consistency Documentation-LRTP
Project Plan Consistency Documentation-TIP
Project Plan Consistency Documentation-STIP

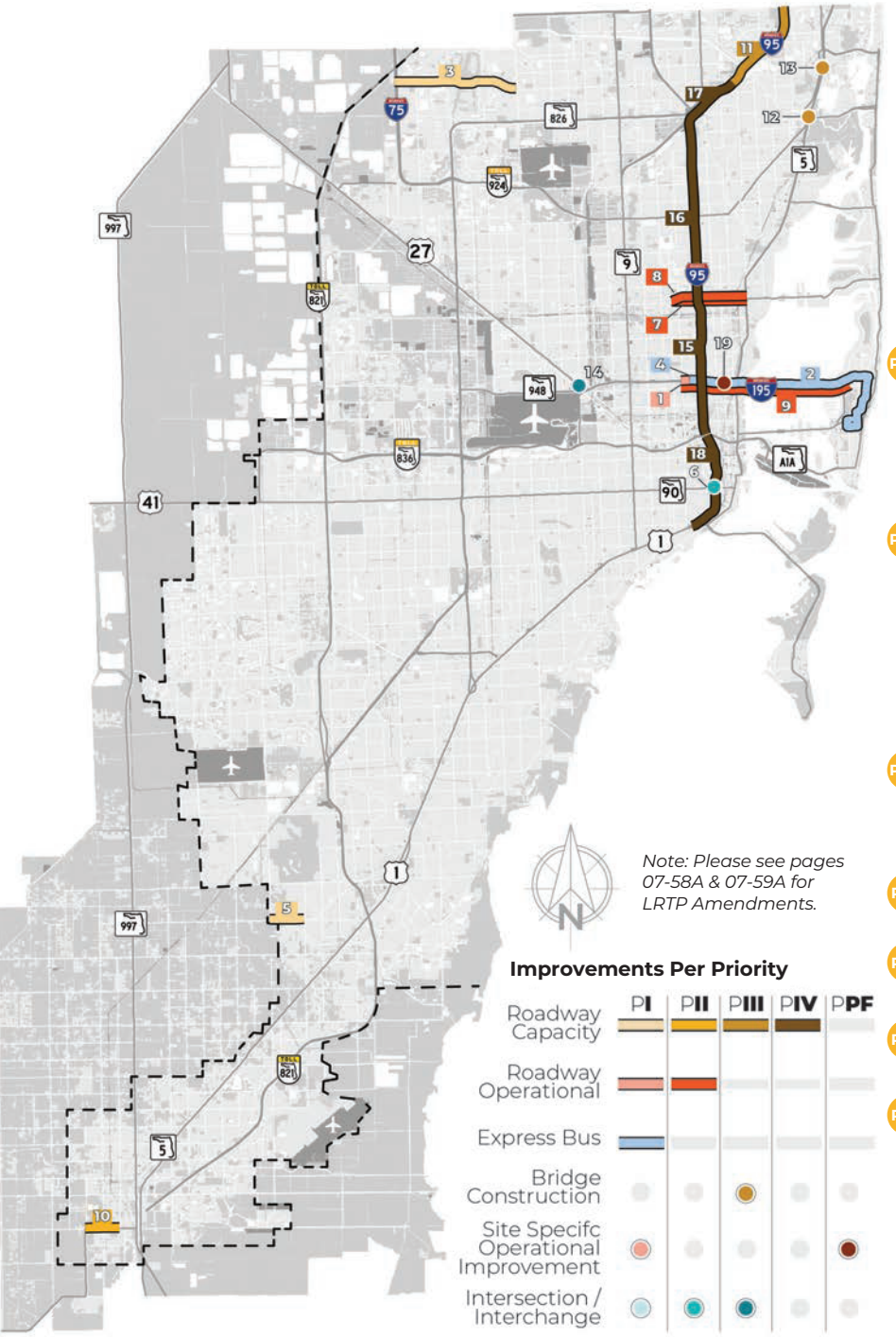


TABLE 7-3: FDOT OTHER ROADS PROJECTS

	MAP ID	FACILITY	LIMITS FROM	LIMITS TO	DESCRIPTION	TOTAL PROJECT COSTS (2018 $)
PRIORITY I						
PM3	1	I-195 (SR 112) Texas U-Turn	NW 12 Ave (SR 933)	NW 10 Ave	Express Lanes Access for Miami Beach	
	2	I-195 (SR 112) Bus On Shoulders (Roadway Improvements)	I-95 (SR 9)	SR 907 (Alton Rd)	New Express Bus Service	$7.810
PM3	3	Miami Gardens Dr (SR 860/ NW 186 St)	I-75 (SR 93)	NW 57 Ave	Widen 4 to 6 lanes	
	4	I-195 (SR 112) Frontage Rd & Ramp Realignment (Miami Design District)			New Road	
PM3	5	SR 994 (Quail Roost Dr)	SW 137 Ave	SW 127 Ave	Widen 2 To 4 lanes	
PRIORITY II						
PM1	6	I-95 (SR 9) Interchange	at SW 7 St and 8 St (Tamiami Trail/ SR 90/US 41)		Modify Interchange	
PM1	7	SR 934 (NE/ NW 79 St)	West of I-95 (13 Ct)	Biscayne Bay (Oneway Pair)	Traffic Flow Change and Complete Streets	
PM1	8	SR 934 (NE/ NW 81/82 St)	West of I-95 (13 Ct)	Biscayne Bay (Oneway Pair)	Traffic Flow Change and Complete Streets	
PM1	9	I-195 (SR 112) Corridor Improvements	NW 12 Ave (SR 933)	SR 907 (Alton Rd)	Operational and Capacity (PD&E & Design)	
	10	SR 9336 (SW 344 St/Palm Dr)	SW 182 Ave	SW 192 Ave	Widen 2 to 4 lanes	

Values in Millions YOE $
YOE: Year of Expenditure

			PRIORITY I: 2020-2025				PRIORITY II: 2026-2030				PRIORITY III: 2031-2035				PRIORITY IV: 2036-2045			
	2020-2024 TIP FUNDING	PROJECT COST FUNDED IN 2045 LRTP (YOE $)	PRE-ENG	ROW	CON/DB	O&M*	PRE-ENG	ROW	CON/DB	O&M*	PE/PDE	ROW	CST	O&M*	PE/PDE	ROW	CST	O&M*
		$21.420	$4.712		$21.420													
	$4.718		**$0.957**		**$4.350**													
	$1.650	$70.210	$6.040	$22.610	$47.600													
	$5.770		$1.269		**$5.770**													
		$15.770	$1.140		$15.770													
		$131.430		$5.220			$11.616	$73.410	$52.800									
		$67.226					$12.184	$11.843	$55.383									
		$54.910					$11.729	$1.597	$53.313									
	$19.000	$343.200	**$19.000**					$79.200	$264.000									
		$10.428					$2.294		$10.428									

* O&M costs for SHS are accounted for in the SHS Existing Facilities Estimates. (See page 06-09.)

BOLD PHASE FUNDS ARE INCLUDED IN THE 2019/2020 TIP

Italics denotes portions of phase values included in both the TIP and 2045 Plan

HIGHWAYS

TPO Project No:	DT4457661
LRTP Ref:	07-68
County:	MIAMI-DADE
Roadway ID:	
Lanes Exist:	
Lanes Improved:	
Lanes Added:	
Project Length:	
District:	6

Project Description: **SAFE RTS. TO SCHOOL MIAMI NORTHWESTERN SENIOR HIGH SCHOOL**

Type of Work: **PEDESTRIAN SAFETY IMPROVEMENT** SIS or Non-SIS: **No**

Extra Description:

PHASE :	Funding Source	Proposed Funding (in $000s) <2024	2023 - 2024	2024 - 2025	2025 - 2026	2026 - 2027	2027 - 2028	>2028	All Years
	SR2T	0	150	0	0	0	0	0	150
PRELIMINARY ENGINEERING	**Total**	**0**	**150**	**0**	**0**	**0**	**0**	**0**	**150**
	SR2T	0	0	0	664	0	0	0	664
CONSTRUCTION	**Total**	**0**	**0**	**0**	**664**	**0**	**0**	**0**	**664**

RESPONSIBLE AGENCY: **MIAMI-DADE COUNTY FLORIDA**

Item Segment TOTAL ALL Years ALL Phases: $814

Item Number: 445766 **Item TOTAL ALL Years ALL Phases ALL Segments: $814**

TPO Project No:	DT4458041
LRTP Ref:	06-09
County:	MIAMI-DADE
Roadway ID:	87091000
Lanes Exist:	2
Lanes Improved:	2
Lanes Added:	
Project Length:	1.162
District:	6

Project Description: **SR 994 / SW 200 ST / QUAIL ROOST DR FR W OF SW 137 AVE TO E OF SW 127 AVE**

Type of Work: **PD&E/EMO STUDY** SIS or Non-SIS: **No**

Extra Description:

PHASE :	Funding Source	Proposed Funding (in $000s) <2024	2023 - 2024	2024 - 2025	2025 - 2026	2026 - 2027	2027 - 2028	>2028	All Years
	DDR	0	600	0	0	0	0	0	600
	DIH	0	50	0	0	0	0	0	50
PRELIMINARY ENGINEERING	**Total**	**0**	**650**	**0**	**0**	**0**	**0**	**0**	**650**
	DDR	2,472	0	0	0	0	0	0	2,472
	DIH	48	0	0	0	0	0	0	48
PROJECT DEVELOPMENT AND ENVIRONMENTAL	**Total**	**2,520**	**0**	**0**	**0**	**0**	**0**	**0**	**2,520**

RESPONSIBLE AGENCY: **FDOT**

Item Segment TOTAL ALL Years ALL Phases: $3,170

Item Number: 445804 **Item TOTAL ALL Years ALL Phases ALL Segments: $3,170**

PAGE 280 FLORIDA DEPARTMENT OF TRANSPORTATION DATE RUN: 07/05/2023
AS-OF DATE: 07/01/2023 OFFICE OF WORK PROGRAM TIME RUN: 10.36.25
STIP REPORT MBRSTIP-1
==========
HIGHWAYS
==========

ITEM NUMBER:445804 1 PROJECT DESCRIPTION:SR 994/SW 200 ST/QUAIL ROOST DR FR W OF SW 137 AVE TO E OF SW 127 AVE *NON-SIS*
DISTRICT:06 COUNTY:MIAMI-DADE PROJECT LENGTH: 1.162MI TYPE OF WORK:PD&E/EMO STUDY

FUND CODE	LESS THAN 2024	2024	2025	2026	2027	GREATER THAN 2027	ALL YEARS
FEDERAL PROJECT NUMBER: <N/A>							
PHASE: P D & E / RESPONSIBLE AGENCY: MANAGED BY FDOT							
DDR	2,472,332	0	0	0	0	0	2,472,332
DIH	56,407	0	0	0	0	0	56,407
DS	348	0	0	0	0	0	348
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT							
DDR	0	600,000	0	0	0	0	600,000
DIH	0	50,000	0	0	0	0	50,000
TOTAL <N/A>	2,529,087	650,000	0	0	0	0	3,179,087
TOTAL 445804 1	2,529,087	650,000	0	0	0	0	3,179,087
TOTAL Project:	2,529,087	650,000	0	0	0	0	3,179,087

ITEM NUMBER:445963 2 PROJECT DESCRIPTION:MIAMI-DADE COUNTY DRAINAGE PUSHBUTTON *NON-SIS*
DISTRICT:06 COUNTY:MIAMI-DADE PROJECT LENGTH: .000 TYPE OF WORK:DRAINAGE IMPROVEMENTS

FUND CODE	LESS THAN 2024	2024	2025	2026	2027	GREATER THAN 2027	ALL YEARS
FEDERAL PROJECT NUMBER: <N/A>							
PHASE: PRELIMINARY ENGINEERING / RESPONSIBLE AGENCY: MANAGED BY FDOT							
DIH	27,405	0	0	0	0	0	27,405
PHASE: CONSTRUCTION / RESPONSIBLE AGENCY: MANAGED BY FDOT							
DDR	1,061,693	0	0	0	0	0	1,061,693
DIH	313	19,999	0	0	0	0	20,312
DS	139	0	0	0	0	0	139
TOTAL <N/A>	1,089,550	19,999	0	0	0	0	1,109,549
TOTAL 445963 2	1,089,550	19,999	0	0	0	0	1,109,549

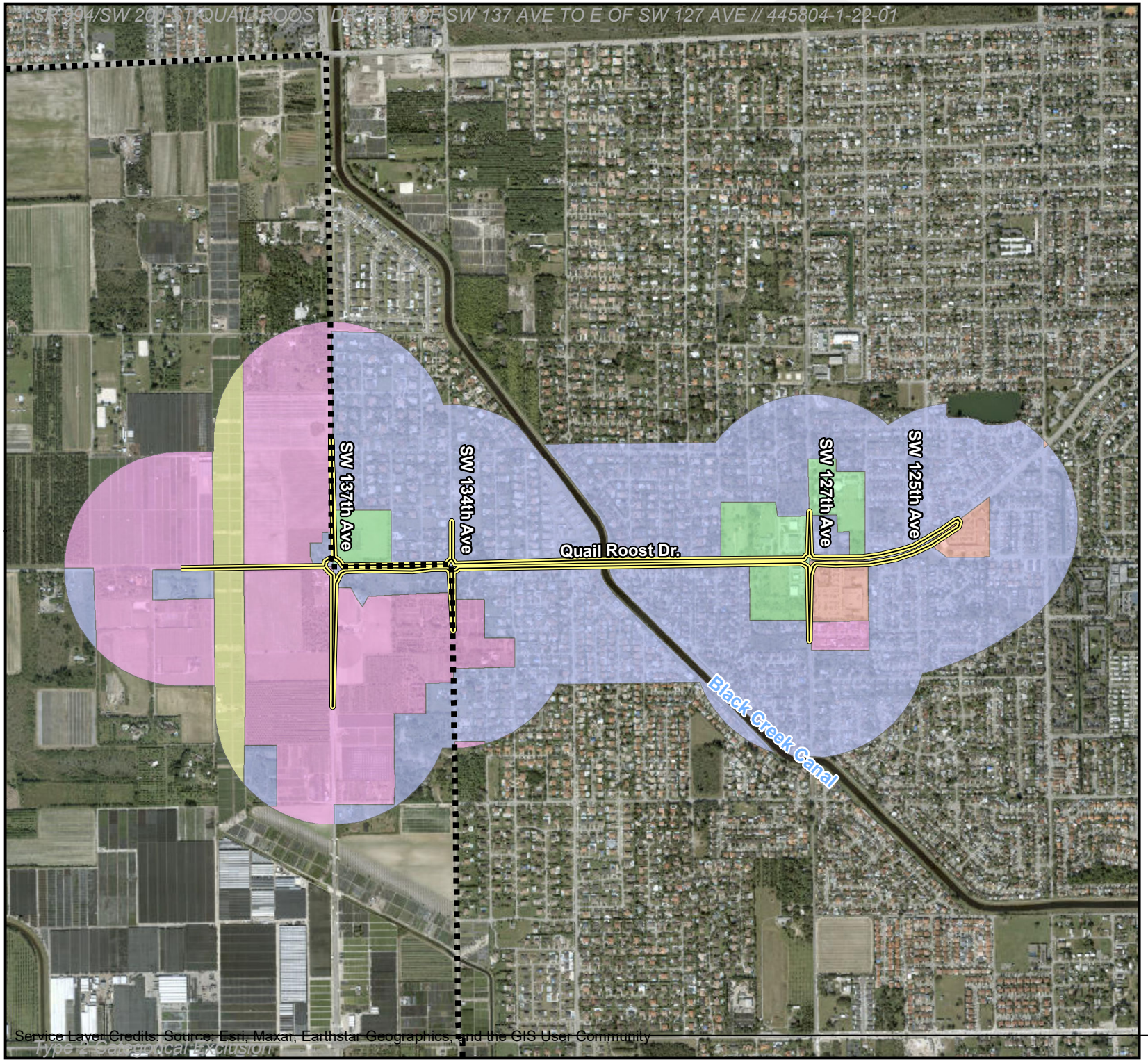
Social and Economic Appendix

Contents:

ROW Table

Figure 2- Land Use Map

Right of Way Impacts				
Owner	**Parcel No.**	**FOLIO**	**Address**	**Approximate R/W Impact Area (SF)**
Calvary Pentecostal Church of Kendall Inc	1	3069020010410	19901 SW 137 AVE	24,648.37
Larry James Carter	2	3069020160350.00	19995 SW 135 AVE	1,648.44
Lilia D Joslyn	3	3069020160360	19990 SW 134 CT	1,027.43
Yako Heredia	4	3069020160300	19995 SW 134 CT	191.92
Manuel Cagigas	5	3069020160010	19980 SW 134 AVE	127.60
BVK LLC	6	3069020010424	13395 SW 200 ST	672.18
Enrique A Lopez	7	3069020010420	13355 SW 200 ST	843.08
SWAY 2014 1 Borrower LLC	8	3069020220010	19954 SW 133 CT	1,215.56
Daylenis Barbara I Palacios	9	3069020220110	19953 SW 133 CT	1,819.66
Miguel A Carmona & W Ena Alvarez	10	3069020010440	13295 SW 200 ST	5,240.39
Nestor J Melian	11	3069020220300	19991 SW 132 PL	1,947.35
Oiremis A Argote	12	3069020290010	19990 SW 132 CT	1,774.10
Rafael Santana Valles	13	3069020290190	19995 SW 132 CT	1,747.98
Ismael Diaz Rodriguez	14	3069020290180	19970 SW 131 CT	1,991.95
A&A Business Connexion Corp	15	3069020290170	19975 SW 131 CT	2,254.09
SRP SUB LLC	16	3069020250680	19996 SW 130 AVE	430.11
Apostalic Alliance Church of the Lord Jesus Christ	22	3069020010601	12825 QUAIL ROOST DR	311.86
Peace United Methodist Church	23	3069020010610	12755 QUAIL ROOST DR	1,689.12
Jarem Investments LLC	24	3069020270010	12711 QUAIL ROOST DR	2,173.95
JOLO INC	25	3069110000140	13600 SW 200 ST	27595.09
Francisco Febles	26	3069110000141	13650 QUAIL ROOST DR	2986.06
Luis E Herrera	27	3069110000030	13400 SW 200 ST	17471.07
David Joel Lewis TRS	28	3069110000050	13390 SW 200 ST	23310.07
Marjorie Leon	29	3069110090010	20000 SW 133 AVE	359.62
Jorge L Campos & W Erika Montanez	30	3069110090080	13281 SW 200 TER	390.30
Antar Alberto Torres TRS	31	3069110090090	13265 SW 200 TER	444.53
Carlos V Da Gama	32	3069110090100	13249 SW 200 TER	453.07
Rosa Enriqueta Verdejo TRS	33	3069110090110	13233 SW 200 TER	461.82
Rosa Chavez	34	3069110090120	13217 SW 200 TER	470.58
Jorge Sosa	35	3069110090130	13201 SW 200 TER	469.48
2018 2 IH BORROWER L P	36	3069110040710	13191 SW 200 TER	503.62
Arairis P Figueredo	37	3069110040700.00	13181 SW 200 TER	605.02
Miguel A Valle	38	3069110040690	13171 SW 200 TER	745.50
Global Capital Investments US INC	39	3069110040030	20000 SW 130 AVE	1,754.08
Pointe Quail Investments LLC	56	3069110010011	12740 SW 200 ST	129.52
South West 200 LLC	57	3022040090160	2463 NE 183 ST	285.34
Miami Dade County Parks	58	3069110130970	VACANT LAND - GOVERNMENTAL	5,705.64
Miami Dade County Parks	59	3069110130980	VACANT LAND - GOVERNMENTAL	5,270.99
Robert C Madonell JR	60	3069030000250	13701 QUAIL ROOST DR	17221.25
Craig Koning & Yvenia Berrios	61	3069100000020	20000 SW 137 AVE	3688.39
NELLY CATHERINE FLORES & ALLISON YAMILET FLORE	62	3069020180010	19751 SW 137 AVE	63.37
AUTOZONE STORES INC	63	3069010040220	12695 SW 200 ST	2,591.15
RICADRI GROUP LLC	64	3069010040230	12685 SW 200 ST	3,050.38
12555 LLC	65	3069010040131	12555 QUAIL ROOST DR	2,425.23
QUAIL ROOST SCHOOL DEVELOPMENT LLC	66	3069010040130	VACANT RESIDENTIAL : VACANT LAND	2,104.48
CARLOS R FERREIRA & ILDA FERREIRA	67	3069010410460	12498 SW 199 TER	312.18
JOSE R MEDINA	68	3069010410470	12488 SW 199 TER	313.19
ALFREDO E ARRUFAT & ALEDYDIS A VALDIVIA	69	3069010410480	12478 SW 199 TER	570.75
12448 MOREIRA LLC	70	3069010410490	12448 SW 199 TER	111.56
BANK OF AMERICA NA NC1-001-03-81	78	3069120480010	20099 SW 127 AVE	900.02
GRI EQY(QUAIL ROOST) LLC	79	3069120480020	20201 SW 127 AVE	2,440.75
CHARLES TURNER & VIVIAN TURNER	80	3069120340350	12437 SW 200 TER	285.24
ANTONIO RUGAMA	81	3069120340340	12433 SW 200 TER	671.11
109 OAK PARK ESTATES DADE LLC	83	3069120370040	COMMERCIAL : VACANT LAND	1,482.27
LYNWOOD LLC	85	3069030000255	NURSERY ABOVE-GR : VACANT LAND	31,820.35
FLORIDA POWER & LIGHT CO ATTN PROPERTY TAX DE	86	3069030000220	N/A AGRICULTURE	6,887.88
I V TRUST & INVESTMENT LLC	87	3069030000260	N/A AGRICULTURE	5,529.79
FLORIDA POWER & LIGHT CO ATTN PROPERTY TAX DE	88	3069100000011	N/A AGRICULTURE	3,992.79
JC REAL ESTATE HOLDINGS LTD JULIO A VIYELLA	89	3069100000010	N/A AGRICULTURE	11,393.51
LYONS LLC	90	3069110000070	20200 SW 134 AVE	294.58
ENRIQUE SOUTO & BEHICEN PASCUAL	82 A	3069120370010	12425 SW 200 TER	347.27
EMMA HALIM	82 B	3069120370020	12429 SW 200 TER	317.93
TOTAL PARCEL IMPACTS =62				**239,981.96**



Quail Roost Dr. PD&E

West of SW 137 Avenue to East of SW 127 Avenue

Miami-Dade County

Existing Land Use Map

Legend

- Urban Development Boundary
- Project Limits

Land Use

- Agriculture and Nursery
- Commercial
- Utilities
- Residential
- Institutional

N

0 0.075 0.15 0.3 Miles

Scale 1:18,000

Land Use Source: South Florida Water Management District (2020)

Date Updated: 03/21/2023

Figure 6-3

Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Cultural Resources Appendix

Contents:

MIAMI-DADE COUNTY
miamidade.gov

Parks, Recreation and Open Spaces
275 NW 2nd Street
Miami, Florida 33128
T 305-755-7800

Every Great Community has a Great Park System.

June 3, 2022

Steven Craig James, R.L.A.
District Environmental Manager
Florida Department of Transportation, District Six
1000 NW 111th Avenue, Room 6109
Miami, FL 33172

Subject: Black Creek Trail- Segment of Route 7
Statement of Significance
FDOT Financial Project ID: 445804-1-22-01
FDOT Project Description: SR 994/SW 200th Street/Quail Roost Drive Project Development and Environment (PD&E) Study from SW 137th Avenue to SW 127th Avenue in Miami-Dade County, FL

Dear Mr. James,

As the Official with Jurisdiction, please accept this letter as a formal Statement of Significance for Black Creek Trail- Segment of Route 7. For purposes of Section 4(f) (49 U.S.C. § 303), significance means that in comparing the availability and function of the recreation area, park, or wildlife and waterfowl refuge area with the recreational, park, and refuge objectives of the community, the land in question plays an important role in meeting those objectives. Black Creek Trail- Segment of Route 7 is considered a significant recreational resource within the meaning of Section 4(f) of the U.S. Department of Transportation Act Regulations.

Black Creek Trail- Segment of Route 7 is owned by the Miami-Dade County, Parks, Recreation and Open Spaces (MDPROS) and is located along the Black Creek Canal (C-1W). Black Creek Trail- Segment of Route 7 is an 8.7-mile-long greenway corridor that begins at Black Point Park and Marina and ends near Larry and Penny Thompson Park.

Black Creek Trail- Segment of Route 7 serves the South Miami-Dade community, is part of the County's greenway network, and provides connectivity to County and National Parks. The Black Creek Trail is a moderately trafficked point-to-point trail that features a canal and is good for all skill levels. The trail is primarily used for walking, running, bird watching, and road biking and is accessible year-round.

The trail is ADA accessible with 5 designated accessible spaces in the paved parking lot off SW 87th Avenue at the southeast end of the trail, near Black Point Park and Marina. There are

benches and picnic tables along the route for resting. There are wheelchair-accessible bathrooms at the southeast end of the trail near Black Point Park and Marina.

Should you have any questions or require additional information regarding the Park, please contact Alejandro Zizold, Chief of Planning and Research at (305) 755-7831 or by email at Alejandro.Zizold@miamidade.gov.

Sincerely,

Maria I. Nardi
Director
Miami-Dade County Parks, Recreation, and Open Spaces Department

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022, and executed by the Federal Highway Administration and FDOT.

Florida Department of Transportation

RON DESANTIS
GOVERNOR

1000 N.W. 111 Avenue
Miami, Florida 33172

JARED W. PERDUE, P.E.
SECRETARY

July 6, 2023

Alissa S. Lotane
Director, Division of Historical Resources, and
State Historic Preservation Officer
R.A. Gray Building
500 S. Bronough Street
Tallahassee FL 32399-0250

Attn: Marcy Welch, Transportation Compliance Review Program

Re: Section 106 Determination of Effects Case Study Report for State Road 994/SW 200th St/Quail Roost Dr. from SW 137th Ave to SW 127th Ave PD&E Study (Financial Project ID [FPID] No. 445804-1-22-01)

Dear Ms. Lotane,

In 2022, the Florida Department of Transportation (FDOT), District 6 engaged Janus Research, in coordination with Gannett Fleming, Inc., to conduct a Section 106 Determination of Effects Case Study Report for the State Road (SR) 994/SW 200th Street/Quail Roost Road from SW 137th Avenue to SW 127th Avenue Project Development and Environment (PD&E) Study, in Miami-Dade County, Florida (Financial Management [FM] No. 445804-1-22-01). In accordance with the provisions of Section 106 of the *National Historic Preservation Act (NHPA) of 1966* (Public Law 89-665, as amended), as implemented by 36 CFR 800 -- *Protection of Historic Properties* (incorporating amendments effective August 5, 2004), this case study report documents potential effects of the proposed alternatives to the *National Register of Historic Places* (National Register)–eligible resources identified during the *Cultural Resources Assessment Survey (CRAS) for the SR 994/SW 200th Street/Quail Roost Drive PD&E Study from SW 137th Avenue to SW 127th Avenue* (Janus Research 2022).

The 2022 CRAS resulted in the identification of three National Register-eligible resources: the Talbott Estate (8DA2789), the MacDonnell Residence (8DA20712), and the building at 20000 SW 137th Avenue (8DA20713). The State Historic Preservation Officer (SHPO) concurred with the 2022 CRAS in a letter dated January 30, 2023. This

case study report was prepared as a part of a project studying alternatives with potential widening, which are based on design criteria, safety and operational needs, and the minimization of environmental effects and Right-of-Way (ROW) needs.

The Section 106 process thus far has identified historic properties within the project APE, and this report presents the evaluation of the potential effects that the proposed project activities may have on the three NRHP-eligible resources. The Criteria of Adverse Effect, as defined in 36 CFR Part 800.5, were applied to the significant historic resources to determine project effects on each of the eligible historic properties. The No-Build Alternative will have no effect on the significant historic resources. The Transportation System Management & Operations (TSM&O) Alternative and Build Alternatives 1, 2, and 3 will have an adverse effect on the Talbott Estate (8DA2789), the MacDonnell Residence (8DA20712), and 20000 SW 137th Avenue (8DA20713). This adverse effect finding is primarily due to the roadway widening which will require the acquisition of property from each historic property, will require the removal or relocation of contributing elements of the properties, will bring the ROW and improvements closer to each historic building, and will notably compromise the setting of each historic resource.

Build Alternative 2 is the recommended alternative, and this alternative will have an adverse effect on the Talbott Estate (8DA2789), the MacDonnell Residence (8DA20712), and 20000 SW 137th Avenue (8DA20713). This alternative will require property acquisition from each of the parcels, and the widened facility will encroach onto the historic properties, affecting the historic buildings, their historic walls, and overall setting and other aspects of their historic integrity. In addition to direct impacts, as the ROW and improvements encroach onto the historic parcels, there may be visual effects, increases in noise and vibration, as well as changes to access.

During the course of this project, several coordination meetings and public meetings have occurred regarding the Section 106 process. On August 23, 2022, FDOT, the FDOT Office of Environmental Management (OEM), and the consultant project team attended a meeting coordinating Section 106 Affected Parties Consultation. Section 106 consultation also took place during two affected parties consultation meetings, on October 12, 2022 and May 15, 2023. The meetings were held with the SHPO, FDOT, Miami-Dade County, potentially affected property owners, and the consultant project team. These meetings focused on the Section 106 process, proposed alternatives, the historic resources, and next steps under the Section 106 process. Affected parties consultation will continue as part of the resolution of adverse effects step of the Section 106 Process, and all mitigation measures will be documented in the Memorandum of Agreement (MOA)

We kindly request that this cover letter is reviewed, and concurrence is provided by your office. This information is provided in accordance with the provisions contained in 36 CFR, Part 800, as well as the provisions contained in the revised F.S. Chapter 267. If you have any questions regarding the subject project, please contact me at Victoria.Vogt@dot.state.fl.us or (305) 470-5420.

Sincerely,

DocuSigned by:
Victoria Vogt
D3427C9EEE844D5...

Victoria Vogt, M.S.
District Cultural Resources Coordinator

The Florida State Historic Preservation Officer finds the attached Cultural Resource Assessment Survey Report complete and sufficient and ☑ concurs / ☐ does not concur with the recommendations and findings provided in this cover letter for SHPO/FDHR

Project File Number 2023-0009B. Or, the SHPO finds the attached document contains _____ insufficient information.

In accordance with the Programmatic Agreement among the FHWA, ACHP, FDHR, SHPO, and FDOT Regarding Implementation of the Federal-Aid Highway Program in Florida, if providing concurrence with a finding of No Historic Properties Affected for a project as a whole, or to No Adverse Effect on a specific historic property, SHPO shall presume that FHWA will proceed with a *de minimis* Section 4(f) finding at its discretion for the use of land from the historic property.

SHPO Comments:

Kelly S Chase

7.28.2023

Alissa S. Lotane, Director, and [DATE]
State Historic Preservation Officer
Florida Division of Historical Resources

Florida Department of Transportation

RON DESANTIS
GOVERNOR

1000 NW 111 Avenue
Miami, FL 33172

JARED W. PERDUE, P.E.
SECRETARY

December 20, 2022

Alissa S. Lotane
Director, Division of Historical Resources, and
State Historic Preservation Officer
R.A. Gray Building
500 S. Bronough Street
Tallahassee FL 32399-0250

Attn: Marcy Welch, Transportation Compliance Review Program

Re: Cultural Resource Assessment Survey Report for the SR 994/SW 200th Street/Quail Roost Drive PD&E Study from SW 137th Avenue to SW 127th Avenue, Miami-Dade County, (FPID No. 445804-1-22-01)

Dear Ms. Lotane,

In 2022, the Florida Department of Transportation (FDOT), District 6 engaged Janus Research, in coordination with Gannett Fleming, Inc., to conduct a Cultural Resource Assessment Survey (CRAS) for the State Road (SR) 994/SW 200th Street/Quail Roost Road from SW 137th Avenue to SW 127th Avenue Project Development and Environment (PD&E) Study, in Miami-Dade County, Florida (Financial Management [FM] No. 445804-1-22-01). The project is in Sections 1-3 and 10-12 of Township 56 South, Range 39 East on the Goulds (1988) United States Geological Survey (USGS) quadrangle map. The purpose of this CRAS was to locate and evaluate archaeological and historic resources within the Area of Potential Effect (APE) and to assess their eligibility for inclusion in the *National Register of Historic Places* (National Register) according to the criteria set forth in 36 CFR Section 60.4.

This assessment complies with Section 106 of the *National Historic Preservation Act (NHPA) of 1966* (Public Law 89-665, as amended), as implemented by 36 CFR 800 -- *Protection of Historic Properties* (incorporating amendments effective August 5, 2004); Stipulation VII of the *Programmatic Agreement among the Federal Highway Administration (FHWA), the Advisory Council on Historic Preservation (ACHP), the Florida Division of Historical Resources (FDHR), the State Historic Preservation Officer (SHPO), and the FDOT Regarding Implementation of the Federal-Aid Highway Program in Florida* (Section 106 Programmatic Agreement, effective March 2016, amended June 7, 2017); Section 102 of the *National Environmental Policy Act (NEPA) of 1969*, as amended (42 USC 4321 et seq.), as implemented by the regulations of the Council on

Environmental Quality (CEQ) (40 CFR Parts 1500–1508); Section 4(f) of the *Department of Transportation Act of 1966*, as amended (49 USC 303 and 23 USC 138); the revised Chapters 267 and 373, *Florida Statutes (F.S.)*; and the standards embodied in the FDHR's *Cultural Resource Management Standards and Operational Manual* (February 2003), and Chapter 1A-46 (*Archaeological and Historical Report Standards and Guidelines*), *Florida Administrative Code*. In addition, this report was prepared in conformity with standards set forth in Part 2, Chapter 8 (*Archaeological and Historical Resources*) of the FDOT *PD&E Manual* (effective July 1, 2020). All work also conforms to professional guidelines set forth in the *Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716, as amended and annotated). Principal Investigators meet the *Secretary of the Interior's Professional Qualification Standards* (48 FR 44716) for archaeology, history, architecture, architectural history, or historic architecture.

The purpose of this project is to address traffic operations and capacity constraints on SR 994 from west of SW 137th Avenue to east of SW 127th Avenue in unincorporated Miami-Dade County in order to accommodate future travel demand projected as a result of population and employment growth along the corridor. Other goals of the project are to 1) improve safety conditions along the corridor, including emergency evacuation and response times, and 2) enhance mobility options and multimodal access. A range of alternatives were considered for the study corridor including the No-Build option, Transportation System Management & Operations (TSM&O) improvements and three Build scenarios. All alternatives were evaluated in terms of engineering, environmental, and socioeconomic aspects.

The archaeological survey and desktop analysis identified no archaeological sites and no locally designated archaeological sites or zones within the archaeological APE or within one mile of the project limits. Six shovel tests excavated during field survey revealed the presence of fill throughout each test and yielded no archaeological material. Subsurface testing was limited due to lack of access to private property, the presence of underground utilities and drainage systems, and the presence of pavement and other hardscape. Based on the results of the background research and field survey, the archaeological APE is considered to have low potential to contain intact archaeological sites.

The historic resources survey and background research resulted in the identification and evaluation of 14 historic buildings within the historic resources APE. The unevaluated but Miami-Dade County–designated Talbott Estate (8DA2789), the previously unrecorded but Miami-Dade County–designated MacDonnell Residence (8DA20712), and the building at 20000 SW 137th Avenue (8DA20713) are each considered National Register–eligible. The remaining 11 identified buildings (8DA20714-8DA20724) consist mainly of Masonry Vernacular homes of a common type and style found in South Florida. For these buildings, historic research did not identify any significant historical associations, and they are considered National Register–ineligible. Four parcels with historic Actual Year Built (AYRB) dates based on the Miami-Dade County property appraiser's data were within the historic resources APE, but the

buildings on these parcels were not visible from the public right-of-way (ROW). Each of these parcels were surrounded by fences or hedges which significantly obscured the view of the resources within the parcel. Therefore, FMSF forms could not be completed for the resources within the historic resources APE at the following addresses: 13950 SW 200th Street (c. 1952), 20200 SW 134th Avenue (c. 1947), 20240 SW 127th Avenue (c.1952), and 12555 SW 200th Street (c. 1971). The National Register eligibility of these resources could not be evaluated due to insufficient information regarding the architectural significance or integrity of these buildings. Should the project have direct impacts on the structures at these locations, follow up recordation will be needed to complete an evaluation.

We kindly request that this cover letter and the enclosed document are reviewed, and concurrence is provided by your office. This information is provided in accordance with the provisions contained in 36 CFR, Part 800, as well as the provisions contained in the revised F.S. Chapter 267. If you have any questions regarding the subject project, please contact Steven Craig James, District Environmental Manager at Steven.James@dot.state.fl.us or (305) 470-5221.

Sincerely,

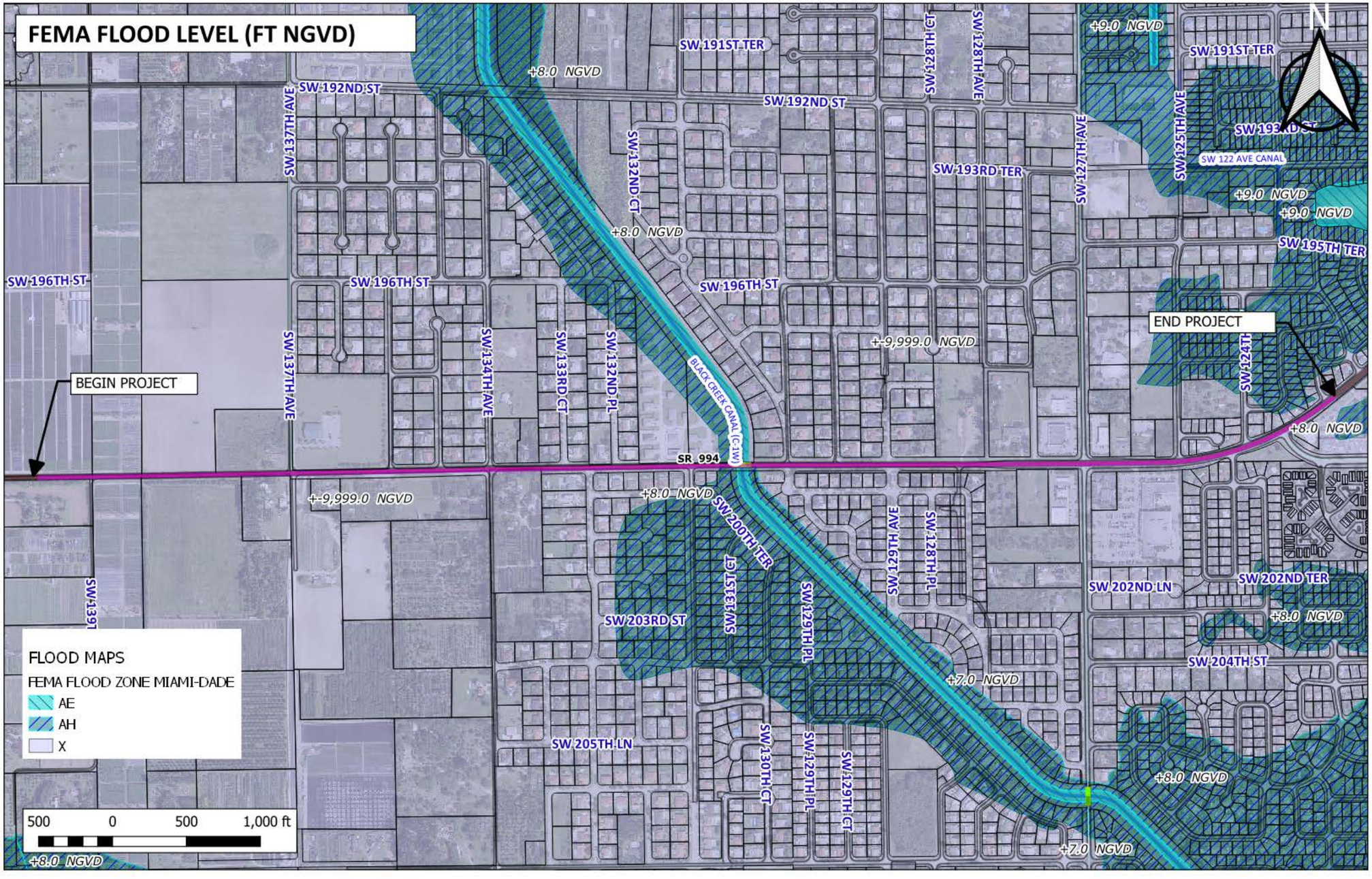
DocuSigned by:
Victoria Vogt
D3427C9EEE844D5...

Victoria Vogt, M.S.
Environmental Specialist III

The Florida State Historic Preservation Officer finds the attached Cultural Resource Assessment Survey Report complete and sufficient and ☐ concurs / ☐ does not concur with the recommendations and findings provided in this cover letter for SHPO/FDHR Project File Number _____. Or, the SHPO finds the attached document contains _____ insufficient information. In accordance with the Programmatic Agreement among the FHWA, ACHP, FDHR, SHPO, and FDOT Regarding Implementation of the Federal-Aid Highway Program in Florida, if providing concurrence with a finding of No Historic Properties Affected for a project as a whole, or to No Adverse Effect on a specific historic property, SHPO shall presume that FHWA will proceed with a *de minimis* Section 4(f) finding at its discretion for the use of land from the historic property.
SHPO Comments:
Alissa S. Lotane, Director, and [DATE] State Historic Preservation Officer Florida Division of Historical Resources

Natural Resources Appendix

Contents:


FEMA FLOOD LEVEL (FT NGVD)
BEGIN PROJECT
END PROJECT
SR 994
SW 192ND ST
SW 191ST TER
SW 196TH ST
SW 193RD TER
SW 195TH TER
SW 203RD ST
SW 205TH LN
SW 202ND LN
SW 202ND TER
SW 204TH ST
SW 137TH AVE
SW 134TH AVE
SW 133RD CT
SW 132ND PL
SW 132ND CT
SW 128TH CT
SW 128TH AVE
SW 127TH AVE
SW 125TH AVE
SW 124TH
SW 200TH TER
SW 131ST CT
SW 129TH PL
SW 129TH AVE
SW 128TH PL
SW 130TH CT
SW 129TH CT
SW 139T
SW 122 AVE CANAL
BLACK CREEK CANAL (C-1W)
+8.0 NGVD
+9.0 NGVD
+7.0 NGVD
+-9,999.0 NGVD
FLOOD MAPS
FEMA FLOOD ZONE MIAMI-DADE
AE
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X
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REGION 4
ATLANTA, GA 30303

October 4, 2023

Ms. Elsa N. Riverol
Project Manager
Florida Department of Transportation
1000 NW 111th Avenue
Miami, Florida 33172-5800

Subject: Sole Source Aquifer Review/Concurrence of the SR 994/SW 200th Street/Quail Roost Drive Project Development & Environment (PD&E) Study in Miami-Dade County, Florida, Financial Project ID: 445804-1-22-01.

Dear Ms. Riverol:

The U.S. Environmental Protection Agency, Region 4 received the Florida Department of Transportation's (FDOT) request on August 11, 2023, to review the above referenced project pursuant to Section 1424(e) of the Safe Drinking Water Act (SDWA), 42 U.S.C. § 300h-3. The objective of the EPA's review is to determine if the project lies within the boundaries, including recharge and streamflow source zones, of an EPA designated Sole Source Aquifer (SSA), and to determine if the project poses potential adverse health or environmental impacts. A SSA is the sole or principal water source for a designated area.

The SR 994/SW 200th Street/Quail Roost Drive PD&E Study (Project) has been determined to lie inside the designated boundaries of the Biscayne Sole Source Aquifer and based on the information provided, may cause a significant impact to the aquifer system when the Project's foundations are installed and/or construction dewatering is undertaken. However, with proper implementation of best management practices (BMPs), these potential impacts can be adequately reduced or properly mitigated. To that effect, when installing bridge foundations, the FDOT must adhere to the list of BMPs provided as items 1 and 2 below. The dewatering operation BMPs are listed in item 3 below:

1. FDOT Design Manual Chapter 320 Stormwater Pollution Prevention Plan (SWPPP)
2. FDOT Standard Specification for Road and Bridge Construction,
a. Section 6 – Control of Materials
b. Section 104 – Prevention, Control, And Abatement of Erosion and Water Pollution
c. Section 455 – Structures Foundations
3. U.S. Bureau of Reclamation Engineering Geology Field Manual – Chapter 20 Water Control. https://www.usbr.gov/tsc/techreferences/mands/geologyfieldmanual-vol2/Chapter20.pdf

Furthermore, all debris from any demolition of the existing structures must be properly contained and removed from the site prior to construction of the new structure. If applicable, all county flood plain management plans and public notification processes must be followed. During construction, it is the EPA's understanding and expectation that those responsible for the project will strictly adhere to all Federal, State, and local government permits, ordinances, planning designs, construction codes, operation, maintenance, and engineering requirements, and any contaminant mitigation recommendations outlined by federal and state agency reviews. All best management practices for erosion and sedimentation control must also be followed and State and local environmental offices must be contacted to address proper drainage and storm water designs. Additionally, the project manager should contact State and local environmental officials to obtain a copy of any local Wellhead Protection Plans. The following website provides information regarding the Florida Department of Environmental Protection's Source Water Assessment and Protection Program. http://www.dep.state.fl.us/swapp/Default.html.

The EPA finds that, if the conditions outlined above are adhered to, this Project should have no significant impact to the aquifer system. Please note that this "no significant impact" finding has been determined based on compliance with the requirements outlined above and, on the information provided. Further, this finding only relates to Section 1424(e) of the SDWA, 42 U.S.C. § 300h-3. If there are any significant changes to the project, the EPA Region 4 office should be notified for further review. Other regulatory groups within the EPA responsible for administering other programs may, at their own discretion and under separate cover, provide additional comments.

Thank you for your concern with the environmental impacts of this project. If you have any questions, please contact Mr. Manuel López Sánchez at 404-562-8259 or LopezSanchez.Manuel@epa.gov or Mr. Larry Cole at 404-562-9474 or Cole.Larry@epa.gov.

Sincerely,

Khurram Rafi, Manager
Groundwater and GIS Section
Safe Drinking Water Branch
Water Division
U.S. EPA, Region 4

United States Department of the Interior

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

August 1, 2017

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

Subject: Consultation Key for the Eastern Indigo Snake – Revised

Dear Mr. Kinard:

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

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

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

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

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

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

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

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

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

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

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

Scope of the Key

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

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

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

Habitat

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

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

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

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

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

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

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

Minimization Measures

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

Determinations

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

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

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

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

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

A. Project is not located in open water or salt marsh.....go to B

Project is located solely in open water or salt marsh.....**no effect**

B. Permit will be conditioned for use of the Service's most current guidance for Standard Protection Measures For The Eastern Indigo Snake (currently 2013) during site preparation and project construction.....go to C

Permit will not be conditioned as above for the eastern indigo snake, or it is not known whether an applicant intends to use these measures and consultation with the Service is requested.....**may affect**

C. The project will impact less than 25 acres of eastern indigo snake habitat (*e.g.*, sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandoned citrus groves], and coastal dunes).....go to D

The project will impact 25 acres or more of eastern indigo snake habitat (*e.g.*, sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive, or abandoned citrus groves], and coastal dunes).....**may affect**

D. The project has no known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and/or injured during project activities.....**NLAA**

The project has known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and /or injured.....go to E

E. Any permit will be conditioned such that all gopher tortoise burrows, active or inactive, will be excavated prior to site manipulation in the vicinity of the burrow[1]. If an eastern indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Any permit will also be conditioned such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an eastern indigo snake, no work will commence until the snake has vacated the vicinity of proposed work.....**NLAA**[2]

Permit will not be conditioned as outlined above.....**may affect**

End Key

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

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

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

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

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

Sincerely,

Roxanna Hinzman
Field Supervisor
South Florida Ecological Services

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

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United States Department of the Interior

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

April 25, 2013

Donald W. Kinard
Chief, Regulatory Division
U.S. Army Corps of Engineers
701 San Marco Boulevard, Room 372
Jacksonville, Florida 32207-8175

Dear Mr. Kinard:

This letter acknowledges the U.S. Fish and Wildlife Service's (Service) receipt of your April 12, 2013, letter requesting concurrence on the U.S. Army Corps of Engineers' (Corps) implementation of the revised Manatee Key and its enclosures dated April 2013. This letter represents the Service's views on the potential effects of the proposed action in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*) and the Marine Mammal Protection Act of 1972, as amended (MMPA) (16 U.S.C. 1361 *et seq.*). For future reference, we have assigned this concurrence letter to Service Consultation Code 2013-I-0151.

The Manatee Key is a tool that has been used by the Corps' Regulatory Division since 1992 to assist in making its effect determinations, as required under 50 CFR 402.14(a), on permit applications for in-water activities such as, but not limited to, maintenance dredging, the placement of fill material for shoreline stabilization, the construction or placement of other in-water structures, as well as the construction of docks, marinas, boat ramps, boat slips, dry storage or any other watercraft access structures or facilities. Your agency has determined utilization of the 2013 Manatee Key, and its enclosures, to review projects in waters accessible to the endangered West Indian manatee (*Trichechus manatus*) may affect, but is not likely to adversely affect the manatee or its designated critical habitat.

Since July 2011, the Service has worked closely with the Corps and the Florida Fish and Wildlife Conservation Commission (FWC) on revising the March 2011 version of the Manatee Key and its associated maps. Minor changes to the March 2011 Manatee Key were made to ensure consistency with the manatee programmatic consultation co-developed by the Corps and the Service in cooperation with the FWC.

For all new or expanding multi-slip facilities located in a county with a State-approved MPP in place that reach a "may affect, not likely to adversely affect" determination using the 2013 Manatee Key, the Service concurs with these determinations and no further consultation with the Service is necessary.

For all applications to construct residential dock facilities that reach a "may affect, not likely to adversely affect" determination using the 2013 Manatee Key, the Service concurs with these determinations and no further consultation with the Service is necessary. As such, the Service will not receive permit applications from the Corps for these types of facilities.

For those counties with a watercraft-related mortality rate that averages less than one dead manatee a year, we conclude take is not reasonably certain to occur as a result of new or expanding watercraft access facilities in these counties. Therefore, for multi-slip facilities proposed to be built or expanded in those counties that reach a "may affect, not likely to adversely affect" determination using the 2013 Manatee Key, the Service concurs with these effect determinations and no further consultation with the Service is necessary.

For all applications to repair or replace existing multi-slip facilities that do not provide new watercraft access and reach a "may affect, not likely to adversely affect" determination using the 2013 Manatee Key, the Service concurs with these determinations. As such, the Service will not receive permit applications from the Corps for these types of existing facilities since they were covered by the Service's March 17, 2011, consultation on the 2011 Manatee Key.

All other future applications for multi-slip facilities reaching a "may affect, not likely to adversely affect" determination using the 2013 Manatee Key will be forwarded to the Service for concurrence. The Corps agreed to forward to the Service those applications that are consistent with the Manatee Key.

All culverts 8 inches to 8 feet in diameter must be grated to prevent manatee entrapment. To effectively prevent manatee access, grates must be permanently fixed, spaced a maximum of 8 inches apart (may be less for culverts smaller than 16 inches in diameter) and may be installed diagonally, horizontally, or vertically. Culverts less than 8 inches or greater than 8 feet in diameter are exempt from this requirement. If new culverts and/or the maintenance or modification of existing culverts are grated as described above, the determination of "may affect, not likely to adversely affect" is appropriate and no further consultation with the Service is necessary.

We have examined the April 2013 version of the Manatee Key and its enclosures and agree with its structure and content. Currently, the FWC does not require implementation of the signage component of the standard construction conditions for in-water work for the State's review of the permit application. However, the Corps and the Service will require applicants to implement the signage component of the standard construction conditions for any in-water work authorized by a Department of the Army permit. Therefore, except as noted above, for all future applications reviewed with the April 2013 version of the Manatee Key in which the Corps reaches a "may affect, not likely to adversely affect" determination with respect to the manatee and/or its designated critical habitat, the Service hereby concurs with those determinations in accordance with 50 CFR 402.14(b)1. As such, the March 2011 version of the Manatee Key and its associated maps, as well as other earlier versions of the Manatee Key, are no longer applicable.

The Service does not anticipate the proposed action will result in the incidental take of manatees. Furthermore, the Service is not including an incidental take authorization for marine mammals at this time because the incidental take of marine mammals is not expected to occur and has not been authorized under section 101(a)(5) of the MMPA and/or its 1994 Amendments. Following issuance of such regulations or authorizations, the Service may reinitiate consultation to include an incidental take statement for marine mammals, if deemed appropriate.

This concurrence letter fulfills the requirements of section 7 of the Act and no further action is required. If modifications are made to the Manatee Key, if additional information involving potential effects to listed species becomes available, or if a new species is listed or new critical habitat is designated that may be affected by the project, then reinitiation of consultation may be necessary.

This concurrence letter represents the collective assessment of the April 2013 version of the Manatee Key and its enclosures from the Service's three field offices in Florida: Panama City, North Florida, and South Florida. If you have any questions or concerns about this consultation, please feel free to contact Kalani Cairns at 772-469-4240.

Sincerely yours,

Larry Williams
State Supervisor

cc: electronic copy only
Corps, Jacksonville, Florida (Stuart Santos)
Service, Atlanta, Georgia (Jack Arnold)
Service, Jacksonville, Florida (Dawn Jennings)
Service, Panama City, Florida (Don Imm)

THE CORPS OF ENGINEERS, JACKSONVILLE DISTRICT, AND THE STATE OF FLORIDA EFFECT DETERMINATION KEY FOR THE MANATEE IN FLORIDA
April 2013

Purpose and background of the key

The purpose of this document is to provide guidance to improve the review of permit applications by U.S. Army Corps of Engineers' (Corps) Project Managers in the Regulatory Division regarding the potential effects of proposed projects on the endangered West Indian manatee (*Trichechus manatus*) in Florida, and by the Florida Department of Environmental Protection or its authorized designee or Water Management District, for evaluating projects under the State Programmatic General Permit (SPGP) or any other Programmatic General Permits that the Corps may issue for administration by the above agencies. Such guidance is contained in the following dichotomous key. The key applies to permit applications for in-water activities such as, but not limited to: (1) dredging [new or maintenance dredging of not more than 50,000 cubic yards], placement of fill material for shoreline stabilization, and construction/placement of other in-water structures as well as (2) construction of docks, marinas, boat ramps and associated trailer parking spaces, boat slips, dry storage or any other watercraft access structures or facilities.

At a certain step in the key, the user is referred to graphics depicting important manatee areas or areas with inadequate protection. The maps can be downloaded from the Corps' web page at http://www.saj.usace.army.mil/Missions/Regulatory/SourceBook.aspx. We intend to utilize the most recent depiction of these areas, so should these areas be modified by statute, rule, ordinance and/or other legal mandate or authorization, we will modify the graphical depictions accordingly. These areas may be shaded or otherwise differentiated for identification on the maps.

Explanatory footnotes are provided in the key and must be closely followed whenever encountered.

Scope of the key

This key should only be used in the review of permit applications for effect determinations on manatees and should not be used for other listed species or for other aquatic resources such as Essential Fish Habitat (EFH). Corps Project Managers should ensure that consideration of the project's effects on any other listed species and/or on EFH is performed independently. This key may be used to evaluate applications for all types of State of Florida (State Programmatic General Permits, noticed general permits, standard general permits, submerged lands leases, conceptual and individual permits) and Department of the Army (standard permits, letters of permission, nationwide permits, and regional general permits) permits and authorizations. The final effect determination will be based on the project location and description; the potential effects to manatees, manatee habitat, and/or manatee critical habitat; and any measures (such as project components, standard construction precautions, or special conditions included in the authorization) to avoid or minimize effects to manatees or manatee critical habitat. Projects that key to a "may affect" determination equate to "likely to adversely affect" situations, and those projects should not be processed under the SPGP or any other programmatic general permit. For

all "may affect" determinations, Corps Project Managers shall refer to the Manatee Programmatic Biological Opinion, dated March 21, 2011, for guidance on eliminating or minimizing potential adverse effects resulting from the proposed project. If unable to resolve the adverse effects, the Corps may refer the applicant to the U.S. Fish and Wildlife Service (Service) for further assistance in attempting to revise the proposed project to a "may affect, not likely to adversely affect" level. The Service will coordinate with the Florida Fish and Wildlife Conservation Commission (FWC) and the counties, as appropriate. Projects that provide new access for watercraft and key to "may affect, not likely to adversely affect" may or may not need to be reviewed individually by the Service.

MANATEE KEY
Florida[1]
April 2013

The key is not designed to be used by the Corps' Regulatory Division for making their effect determinations for dredging projects greater than 50,000 cubic yards, the Corps' Planning Division in making their effect determinations for civil works projects or by the Corps' Regulatory Division for making their effect determinations for projects of the same relative scope as civil works projects. These types of activities must be evaluated by the Corps independently of the key.

A. Project is not located in waters accessible to manatees and does not directly or indirectly affect manatees (see Glossary).....*No effect*

Project is located in waters accessible to manatees **or** directly or indirectly affects manatees ..... B

B. Project consists of one or more of the following activities, all of which are *May affect*:

1. blasting or other detonation activity for channel deepening and/or widening, geotechnical surveys or exploration, bridge removal, movies, military shows, special events, etc.;

2. installation of structures which could restrict or act as a barrier to manatees;

3. new or changes to existing warm or fresh water discharges from industrial sites, power plants, or natural springs or artesian wells (but only if the new or proposed change in discharge requires a Corps permit to accomplish the work);

4. installation of new culverts and/or maintenance or modification of existing culverts (where the culverts are 8 inches to 8 feet in diameter, ungrated and in waters accessible, or potentially accessible, to manatees)[2];

5. mechanical dredging from a floating platform, barge or structure[3] that restricts manatee access to less than half the width of the waterway;

6. creation of new slips or change in use of existing slips, even those located in a county with a State-approved Manatee Protection Plan (MPP) in place and the number of slips is less than the MPP threshold, to accommodate docking for repeat use vessels, (*e.g.*, water taxis, tour boats, gambling boats, etc; or slips or structures that are not civil works projects, but are frequently used to moor large vessels (>100') for shipping and/or freight purposes; does not include slips used for docking at boat sales or repair facilities or loading/unloading at dry stack storage facilities and boat ramps); [Note: For projects within Bay, Dixie, Escambia, Franklin, Gilchrist, Gulf, Hernando, Jefferson, Lafayette, Monroe (south of Craig Key), Nassau, Okaloosa, Okeechobee, Santa Rosa, Suwannee, Taylor, Wakulla or Walton County, the reviewer should proceed to Couplet C.]

7. any type of in-water activity in a Warm Water Aggregation Area (WWAA) or No Entry Area (see Glossary and accompanying Maps[4]); [Note: For residential docking facilities in a Warm Water Aggregation Area that is not a Federal manatee sanctuary or No Entry Area, the reviewer should proceed to couplet C.]

8. creation or expansion of canals, basins or other artificial shoreline and/or the connection of such features to navigable waters of the U.S.; [Note: For projects proposing a single residential dock, the reviewer should proceed to couplet C; otherwise, project is a *May Affect*.]

9. installation of temporary structures (docks, buoys, etc.) utilized for special events such as boat races, boat shows, military shows, etc., but only when consultation with the U.S. Coast Guard and FWS has not occurred; [Note: See programmatic consultation with the U.S. Coast Guard on manatees dated May 10, 2010.].

Project is other than the activities listed above C

C. Project is located in an Important Manatee Area (IMA) (see Glossary and accompanying Maps[4]) ..... D

Project is not located in an Important Manatee Area (IMA) (see Glossary and accompanying Maps[4]) ..... G

D. Project includes dredging of less than 50,000 cubic yards ..... E

Project does not include dredging ..... G

E. Project is for dredging a residential dock facility or is a land-based dredging operation ..... N

Project not as above ..... F

F. Project proponent **does not elect** to follow all dredging protocols described on the maps for the respective IMA in which the project is proposed ..... *May affect*

Project proponent **elects** to follow all dredging protocols described on the maps for the respective IMA in which the project is proposed ..... G

G. Project provides new[5] access for watercraft, *e.g.*, docks or piers, marinas, boat ramps and associated trailer parking spaces, new dredging, boat lifts, pilings, floats, floating docks, floating vessel platforms, boat slips, dry storage, mooring buoys, or other watercraft access (residential boat lifts, pilings, floating docks, and floating vessel platforms installed in existing slips are not considered new access) or improvements allowing increased watercraft usage ..... H

Project does not provide new[5] access for watercraft, *e.g.*, bulkheads, seawalls, riprap, maintenance dredging, boardwalks and/or the maintenance (repair or rehabilitation) of currently serviceable watercraft access structures provided all of the following are met: (1) the number of slips is not increased; (2) the number of existing slips is not in question; and (3) the improvements do not allow increased watercraft usage ..... N

H. Project is located in the Braden River Area of Inadequate Protection (Manatee County) (see Glossary and accompanying AIP Map[4])
..... *May affect*

Project is not located in the Braden River Area of Inadequate Protection (Manatee County) (see Glossary and accompanying AIP Map[4]) I

I. Project is for a multi-slip facility (see Glossary) ..... J

Project is for a residential dock facility or is for dredging (see Glossary) ..... N

J. Project is located in a county that currently has a State-approved MPP in place (BREVARD, BROWARD, CITRUS, CLAY, COLLIER, DUVAL, INDIAN RIVER, LEE, MARTIN, MIAMI-DADE, PALM BEACH, ST. LUCIE, SARASOTA, VOLUSIA) or shares contiguous waters with a county having a State-approved MPP in place (LAKE, MARION, SEMINOLE)[6] ..... K

Project is located in a county not required to have a State-approved MPP L

K. Project has been developed or modified to be consistent with the county's State-approved MPP **and** has been verified by a FWC review (or FWS review if project is exempt from State permitting) **or** the number of slips is below the MPP threshold ..... N

Project has not been reviewed by the FWC or FWS **or** has been reviewed by the FWC or FWS **and** determined that the project is not consistent with the county's State-approved MPP ..... *May affect*

L. Project is located in one of the following counties: CHARLOTTE, DESOTO[7], FLAGLER, GLADES, HENDRY, HILLSBOROUGH, LEVY, MANATEE, MONROE[7], PASCO[7], PINELLAS ..... M

Project is located in one of the following counties: BAY, DIXIE, ESCAMBIA, FRANKLIN, GILCHRIST, GULF, HERNANDO, JEFFERSON, LAFAYETTE, MONROE (south of Craig Key), NASSAU, OKALOOSA, OKEECHOBEE, PUTNAM, SANTA ROSA, ST. JOHNS, SUWANNEE, TAYLOR, WAKULLA, WALTON ..... N

M. The number of slips does not exceed the residential dock density threshold (see Glossary) ..... N

The number of slips exceeds the residential dock density threshold (see Glossary) ..... *May affect*

N. Project impacts to submerged aquatic vegetation[8], emergent vegetation or mangrove will have beneficial, insignificant, discountable[9] or no effects on the manatee[10] ..... O

Project impacts to submerged aquatic vegetation[8], emergent vegetation or mangrove may adversely affect the manatee[10] ..... *May affect*

O. Project proponent **elects** to follow standard manatee conditions for in-water work[11] and requirements, as appropriate for the proposed activity, prescribed on the maps[4] ..... P

Project proponent **does not elect** to follow standard manatee conditions for in-water work[11] and appropriate requirements prescribed on the maps[4] ..... *May affect*

P. If project is for a new or expanding[5] multi-slip facility and is located in a county with a State-approved MPP in place **or** in Bay, Dixie, Escambia, Franklin, Gilchrist, Gulf, Hernando, Jefferson, Lafayette, Monroe (south of Craig Key), Nassau, Okaloosa, Okeechobee, Putnam, St. Johns, Santa Rosa, Suwannee, Taylor, Wakulla or Walton County, the determination of "*May affect, not likely to adversely affect*" is appropriate[12] and no further consultation with the Service is necessary.

If project is for a new or expanding[5] multi-slip facility and is located in Charlotte, Desoto, Flagler, Glades, Hendry, Hillsborough, Levy, Manatee, Monroe (north of Craig Key), Pasco, or Pinellas County, further consultation with the Service is necessary for "*May affect, not likely to adversely affect*" determinations.

If project is for repair or rehabilitation of a multi-slip facility and is located in an Important Manatee Area, further consultation with the Service is necessary for "*May affect, not likely to adversely affect*" determinations. If project is for repair or rehabilitation of a multi-slip facility and: (1) is not located in an Important Manatee Area; (2) the number of slips is not increased; (3) the number of existing slips is not in question; and (4) the improvements to the existing watercraft access structures do not allow increased watercraft usage, the determination of "*May affect, not likely to adversely affect*" is appropriate[12] and no further consultation with the Service is necessary.

If project is a residential dock facility, shoreline stabilization, or dredging, the determination of "*May affect, not likely to adversely affect*" is appropriate[12] and no further consultation with the Service is necessary. Note: For residential dock facilities located in a Warm Water Aggregation Area or in a No Entry area, seasonal restrictions may apply. See footnote 4 below for maps showing restrictions.

If project is other than repair or rehabilitation of a multi-slip facility, a new[5] multi-slip facility, residential dock facility, shoreline stabilization, or dredging, and does not provide new[5] access for watercraft or

improve an existing access to allow increased watercraft usage, the determination of "*May affect, not likely to adversely affect*" is appropriate[12] and no further consultation with the Service is necessary.

[1] On the St. Mary's River, this key is only applicable to those areas that are within the geographical limits of the State of Florida.

[2] All culverts 8 inches to 8 feet in diameter must be grated to prevent manatee entrapment. To effectively prevent manatee access, grates must be permanently fixed, spaced a maximum of 8 inches apart (may be less for culverts smaller than 16 inches in diameter) and may be installed diagonally, horizontally or vertically. For new culverts, grates must be attached prior to installation of the culverts. Culverts less than 8 inches or greater than 8 feet in diameter are exempt from this requirement. If new culverts and/or the maintenance or modification of existing culverts are grated as described above, the determination of "*May affect, not likely to adversely affect*" is appropriate[11] and no further consultation with the Service is necessary.

[3] If the project proponent agrees to follow the standard manatee conditions for in-water work as well as any special conditions appropriate for the proposed activity, further consultation with the Service is necessary for "*May affect, not likely to adversely affect*" determinations. These special conditions may include, but are not limited to, the use of dedicated observers (see Glossary for definition of dedicated observers), dredging during specific months (warm weather months vs cold weather months), dredging during daylight hours only, adjusting the number of dredging days, does not preclude or discourage manatee egress/ingress with turbidity curtains or other barriers that span the width of the waterway, etc.

[4] Areas of Inadequate Protection (AIPs), Important Manatee Areas (IMAs), Warm Water Aggregation Areas (WWAAs) and No Entry Areas are identified on these maps and defined in the Glossary for the purposes of this key. These maps can be viewed on the Corps' web page. If projects are located in a No Entry Area, special permits may be required from FWC in order to access these areas (please refer to Chapter 68C-22 F.A.C. for boundaries; maps are also available at FWC's web page).

[5] New access for watercraft is the addition or improvement of structures such as, but not limited to, docks or piers, marinas, boat ramps and associated trailer parking spaces, boat lifts, pilings, floats, floating docks, floating vessel platforms, (maintenance dredging, residential boat lifts, pilings, floating docks, and floating vessel platforms installed in existing slips are not considered new access), boat slips, dry storage, mooring buoys, new dredging, etc., that facilitates the addition of watercraft to, and/or increases watercraft usage in, waters accessible to manatees. The repair or rehabilitation of any type of currently serviceable watercraft access structure is not considered new access provided all of the following are met: (1) the number of slips is not increased; (2) the number of existing slips is not in question; and (3) the improvements to the existing watercraft access structures do not result in increased watercraft usage.

[6] Projects proposed within the St. Johns River portion of Lake, Marion, and Seminole counties and contiguous with Volusia County shall be evaluated using the Volusia County MPP.

[7] For projects proposed within the following areas: the Peace River in DeSoto County; all areas north of Craig Key in Monroe County, and the Anclote and Pithlachascotee Rivers in Pasco County, proceed to Couplet M. For all other locations in DeSoto, Monroe (south of Craig Key) and Pasco Counties, proceed to couplet N.

[8] Where the presence of the referenced vegetation is confirmed within the area affected by docks and other piling-supported minor structures and the reviewer has concluded that the impacts to SAV, marsh or mangroves would not adversely affect the manatee or its critical habitat, proceed to couplet O.

Where the presence of the referenced vegetation is confirmed within the area affected by docks and other piling-supported minor structures and the reviewer has concluded that the impacts to SAV, marsh or mangroves would adversely affect the manatee or its critical habitat, the applicant can elect to avoid/minimize impacts to that vegetation. In that instance, where impacts are unavoidable and the applicant elects to abide by or employ construction techniques that exceed the criteria in the following documents, the reviewer should conclude that the impacts to SAV, marsh or mangroves would not adversely affect the manatee or its critical habitat and proceed to couplet O.

- "Construction Guidelines in Florida for Minor Piling-Supported Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh or Mangrove Habitat," prepared jointly by the U.S. Army Corps of Engineers and the National Marine Fisheries Service (August 2001) [refer to the Corps' web page], and

- "Key for Construction Conditions for Docks or Other Minor Structures Constructed in or over Johnson's seagrass (*Halophila johnsonii*)," prepared jointly by the National Marine Fisheries Service and U.S. Army Corps of Engineers (October 2002), for those projects within the known range of Johnson's seagrass occurrence (Sebastian Inlet to central Biscayne Bay in the lagoon systems on the east coast of Florida) [refer to the Corps' web page],

Where the presence of the referenced vegetation is confirmed within the area affected by docks and other piling-supported minor structures and the reviewer has concluded that the impacts to SAV, marsh or mangroves would adversely affect the manatee or its critical habitat, and the applicant does not elect to follow the above Guidelines, the Corps will need to request formal consultation on the manatee with the Service as *May affect*.

For activities other than docks and other piling-supported minor structures proposed in SAV, marsh, or mangroves (*e.g.*, new dredging, placement of riprap, bulkheads, etc.), if the reviewer determines the impacts to the SAV, marsh or mangroves will not adversely affect the manatee or its critical habitat, proceed to couplet O, otherwise the Corps will need to request formal consultation on the manatee with the Service as *May affect*.

[9] See Glossary, under "is not likely to adversely affect."

[10] Federal reviewers, when making your effects determination, consider effects to manatee designated critical habitat pursuant to section 7(a)(2) of the Endangered Species Act. State reviewers, when making your effects determination, consider effects to manatee habitat within the entire State of Florida, pursuant to Chapter 370.12(2)(b) Florida Statutes.

[11] See the Corps' web page for manatee construction conditions. At this time, manatee construction precautions c and f are not required in the following Florida counties: Bay, Escambia, Franklin, Gilchrist, Gulf, Jefferson, Lafayette, Okaloosa, Santa Rosa, Suwannee, and Walton.

[12] By letter dated April 25, 2013, the Corps received the Service's concurrence with "*May affect, not likely to adversely affect*" determinations made pursuant to this key for the following activities: (1) selected non-watercraft access projects; (2) watercraft-access projects that are residential dock facilities, excluding those located in the Braden River AIP; (3) launching facilities solely for kayaks and canoes, and (4) new or expanding multi-slip facilities located in Bay, Dixie, Escambia, Franklin, Gilchrist, Gulf, Hernando, Jefferson, Lafayette, Monroe (south of Craig Key), Nassau, Okaloosa, Okeechobee, Santa Rosa, Suwannee, Taylor, Wakulla or Walton County.

Additionally, in the same letter dated April 25, 2013, the Corps received the Service's concurrence for "*May affect, not likely to adversely affect*" determinations specifically made pursuant to Couplet G of the key for the repair or rehabilitation of currently serviceable multi-slip watercraft access structures provided all of the following are met: (1) the project is not located in an IMA, (2) the number of slips is not increased; (3) the number of existing slips is not in question; and (4) the improvements to the existing watercraft access structures do not allow increased watercraft usage. Upon receipt of such a programmatic concurrence, no further consultation with the Service for these projects is required.

GLOSSARY

Areas of inadequate protection (AIP) – Areas within counties as shown on the maps where the Service has determined that measures intended to protect manatees from the reasonable certainty of watercraft-related take are inadequate. Inadequate protection may be the result of the absence of manatee or other watercraft speed zones, insufficiency of existing speed zones, deficient speed zone signage, or the absence or insufficiency of speed zone enforcement.

Boat slip – A space on land or in or over the water, other than on residential land, that is intended and/or actively used to hold a stationary watercraft or its trailer, and for which intention and/or use is confirmed by legal authorization or other documentary evidence. Examples of boat slips include, but are not limited to, docks or piers, marinas, boat ramps and associated trailer parking spaces, boat lifts, floats, floating docks, pilings, boat davits, dry storage, etc.

Critical habitat – For listed species, this consists of: (1) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act (ESA), on which are found those physical or biological features (constituent elements) (a) essential to the conservation of the species and (b) which may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the ESA, upon a determination by the Secretary that such areas are essential for the conservation of the species. Designated critical habitats are described in 50 CFR 17 and 50 CFR 226.

Currently serviceable – Currently, serviceable means usable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects – The direct or immediate effects of the project on the species or its habitat.

Dredging – For the purposes of this key, the term dredging refers to all in-water work associated with dredging operations, including mobilization and demobilization activities that occur in water or require vessels.

Emergent vegetation – Rooted emergent vascular macrophytes such as, but not limited to, cordgrass (*Spartina alterniflora and S. patens*), needle rush (J*uncus roemerianus*), swamp sawgrass (*Cladium mariscoides*), saltwort (*Batis maritima*), saltgrass (*Distichlis spicata*), and glasswort (*Salicornia virginica*) found in coastal salt marsh-related habitats (tidal marsh, salt marsh, brackish marsh, coastal marsh, coastal wetlands, tidal wetlands).

Formal consultation – A process between the Services and a Federal agency or applicant that: (1) determines whether a proposed Federal action is likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat; (2) begins with a Federal agency's written request and submittal of a complete initiation package; and (3) concludes with the issuance of a biological opinion and incidental take statement by either of the Services. If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Services concur, in writing, that a proposed

action "is not likely to adversely affect" listed species or designated critical habitat). [50 CFR 402.02, 50 CFR 402.14]

Important manatee areas (IMA) – Areas within certain counties where increased densities of manatees occur due to the proximity of warm water discharges, freshwater discharges, natural springs and other habitat features that are attractive to manatees. These areas are heavily utilized for feeding, transiting, mating, calving, nursing or resting as indicated by aerial survey data, mortality data and telemetry data. Some of these areas may be federally-designated sanctuaries or state-designated "seasonal no entry" zones. Maps depicting important manatee areas and any accompanying text may contain a reference to these areas and their special requirements. Projects proposed within these areas must address their special requirements.

Indirect effects – Those effects that are caused by or will result from the proposed action and are later in time, but are still reasonably certain to occur. Examples of indirect effects include, but are not limited to, changes in water flow, water temperature, water quality (*e.g.*, salinity, pH, turbidity, nutrients, chemistry), prop dredging of seagrasses, and manatee watercraft injury and mortality. Indirect effects also include watercraft access developments in waters not currently accessible to manatees, but watercraft access can, is, or may be planned to waters accessible to manatees by the addition of a boat lift or the removal of a dike or plug.

Informal consultation – A process that includes all discussions and correspondence between the Services and a Federal agency or designated non-Federal representative, prior to formal consultation, to determine whether a proposed Federal action may affect listed species or critical habitat. This process allows the Federal agency to utilize the Services' expertise to evaluate the agency's assessment of potential effects or to suggest possible modifications to the proposed action which could avoid potentially adverse effects. If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Services concur, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat). [50 CFR 402.02, 50 CFR 402.13]

In-water activity – Any type of activity used to construct/repair/replace any type of in-water structure or fill; the act of dredging.

In-water structures – **watercraft access structures** – Docks or piers, marinas, boat ramps, boat slips, boat lifts, floats, floating docks, pilings (depending on use), boat davits, etc.

In-water structures – **other than watercraft access structures** – Bulkheads, seawalls, riprap, groins, boardwalks, pilings (depending on use), etc.

Is likely to adversely affect – The appropriate finding in a biological assessment (or conclusion during informal consultation) if any adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions and the effect is not: discountable, insignificant, or beneficial (see definition of "is not likely to adversely affect"). An "is likely to adversely affect" determination requires the initiation of formal consultation under section 7 of the ESA.

Is not likely to adversely affect – The appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. **Discountable effects** are those extremely unlikely to occur. **Insignificant effects** relate to the size of the impact and should never reach the scale where take occurs. **Beneficial effects** are contemporaneous positive effects without any adverse effects to the species. Based on best judgment, a person would not (1) be able to meaningfully measure, detect, or evaluate insignificant effects or (2) expect discountable effects to occur.

Manatee Protection Plan (MPP) – A manatee protection plan (MPP) is a comprehensive planning document that addresses the long-term protection of the Florida manatee through law enforcement, education, boat facility siting, and habitat protection initiatives. Although MPPs are primarily developed by the counties, the plans are the product of extensive coordination and cooperation between the local governments, the FWC, the Service, and other interested parties.

Manatee Protection Plan thresholds – The smallest size of a multi-slip facility addressed under the purview of a Manatee Protection Plan (MPP). For most MPPs, this threshold is five slips or more. For Brevard, Clay, Citrus, and Volusia County MPPs, this threshold is three slips or more.

Mangroves – Rooted emergent trees along a shoreline that, for the purposes of this key, include red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*) and white mangrove (*Laguncularia racemosa*).

May affect – The appropriate conclusion when a proposed action may pose <u>any</u> effects on listed species or designated critical habitat. When the Federal agency proposing the action determines that a "may affect" situation exists, then they must either request the Services to initiate formal consultation or seek written concurrence from the Services that the action "is not likely to adversely affect" listed species. For the purpose of this key, all "may affect" determinations equate to "likely to adversely affect" and Corps Project Managers should request the Service to initiate formal consultation on the manatee or designated critical habitat. **No effect** – the appropriate conclusion when the action agency determines its proposed action will not affect a listed species or designated critical habitat.

Multi-slip facility – Multi-slip facilities include commercial marinas, private multi-family docks, boat ramps and associated trailer parking spaces, dry storage facilities and any other similar structures or activities that provide access to the water for multiple (five slips or more, except in Brevard, Clay, Citrus, and Volusia counties where it is three slips or more) watercraft. In some instances, the Corps and the Service may elect to review multiple residential dock facilities as a multi-slip facility.

New access for watercraft – New dredging and the addition, expansion or improvement of structures such as, but not limited to, docks or piers, marinas, boat ramps and associated trailer parking spaces, boat lifts, pilings, floats, floating docks, floating vessel platforms, (residential boat lifts, pilings, floats, and floating vessel platforms installed in existing slips are not considered new access), boat slips, dry storage, mooring buoys, etc., that facilitates the addition of watercraft to, and/or increases watercraft usage in, waters accessible to manatees.

Observers – During dredging and other in-water operations within manatee accessible waters, the standard manatee construction conditions require all on-site project personnel to watch for manatees to ensure that those standard manatee construction conditions are met. Within important manatee areas (IMA) and under special circumstances, heightened observation is needed. **Dedicated Observers** are those having some prior experience in manatee observation, are dedicated only for this task, and must be someone other than the dredge and equipment operators/mechanics. **Approved Observers** are dedicated observers who also must be approved by the Service (if Federal permits are involved) and the FWC (if state permits are involved), prior to work commencement. Approved observers typically have significant and often project-specific observational experience. Documentation on prior experience must be submitted to these agencies for approval and must be submitted a minimum of 30 days prior to work commencement. When dedicated or approved observers are required, observers must be on site during all in-water activities, and be equipped with polarized sunglasses to aid in manatee observation. For prolonged in-water operations, multiple observers may be needed to perform observation in shifts to reduce fatigue (recommended shift length is no longer than six hours). Additional information concerning observer approval can be found at FWC's web page.

Residential boat lift – A boat lift installed on a residential dock facility.

Residential dock density ratio threshold – The residential dock density ratio threshold is used in the evaluation of multi-slip projects in some counties without a State-approved Manatee Protection Plan and is consistent with 1 boat slip per 100 linear feet of shoreline (1:100) owned by the applicant.

Residential dock facility – A residential dock facility means a private residential dock which is used for private, recreational or leisure purposes for single-family or multi-family residences designed to moor no more than four vessels (except in Brevard, Clay, Citrus, and Volusia counties which allow only two vessels). This also includes normal appurtenances such as residential boat lifts, boat shelters with open sides, stairways, walkways, mooring pilings, dolphins, etc. In some instances, the Corps and the Service may elect to review multiple residential dock facilities as a multi-slip facility.

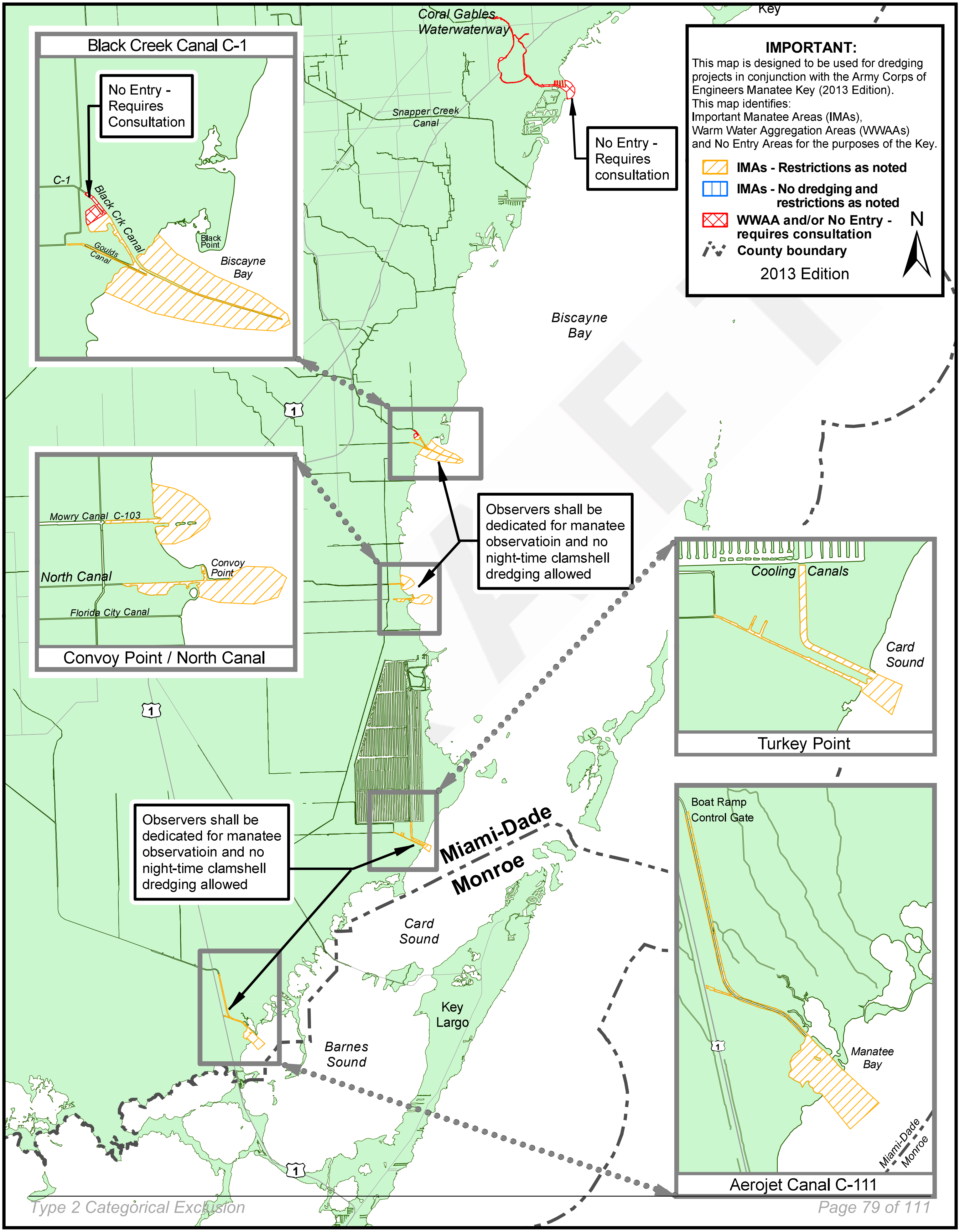
Submerged aquatic vegetation (SAV) – Rooted, submerged, aquatic plants such as, but not limited to, shoal grass (*Halodule wrightii*), paddle grass (*Halophila decipiens*), star grass (*Halophila engelmanni*), Johnson's seagrass (*Halophila johnsonii*), sago pondweed (*Potamogeton pectinatus*), clasping-leaved pondweed (*Potamogeton perfoliatus*), widgeon grass (*Ruppia maritima*), manatee grass (*Syringodium filiforme*), turtle grass (*Thalassia testudinum*), tapegrass (*Vallisneria americana*), and horned pondweed (*Zannichellia palustris*).

Warm Water Aggregation Areas (WWAAs) and **No Entry Areas** – Areas within certain counties where increased densities of manatees occur due to the proximity of artificial or natural warm water discharges or springs and are considered necessary for survival. Some of these areas may be federally-designated manatee sanctuaries or state-designated seasonal "no entry" manatee protection zones. Projects proposed within these areas may require consultation in order to offset expected adverse impacts. In addition, special permits may be required from the FWC in order to access these areas.

Watercraft access structures – Docks or piers, marinas, boat ramps and associated trailer parking spaces, boat slips, boat lifts, floats, floating docks, pilings, boat davits, dry storage, etc.

Waters accessible to manatees – Although most waters of the State of Florida are accessible to the manatee, there are some areas such as landlocked lakes that are not. There are also some weirs, salinity control structures and locks that may preclude manatees from accessing water bodies. If there is any question about accessibility, contact the Service or the FWC.

Miami-Dade County - South



United States Department of the Interior

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

May 18, 2010

Donnie Kinard
Chief, Regulatory Division
Jacksonville District Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

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

Dear Mr. Kinard:

This letter addresses minor errors identified in our January 25, 2010, wood stork key and as such, supplants the previous key. The key criteria and wood stork biomass foraging assessment methodology have not been affected by these minor revisions.

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

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

Wood stork

Habitat

The wood stork is primarily associated with freshwater and estuarine habitats that are used for nesting, roosting, and foraging. Wood storks typically construct their nests in medium to tall

trees that occur in stands located either in swamps or on islands surrounded by relatively broad expanses of open water (Ogden 1991, 1996; Rodgers et al. 1996). Successful colonies are those that have limited human disturbance and low exposure to land-based predators. Nesting colonies protected from land-based predators are characterized as those surrounded by large expanses of open water or where the nest trees are inundated at the onset of nesting and remain inundated throughout most of the breeding cycle. These colonies have water depths between 0.9 and 1.5 meters (3 and 5 feet) during the breeding season.

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

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

Conservation Measures

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

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

In an effort to reduce correspondence in effect determinations and responses, the Service is providing the Wood Stork Effect Determination Key below. If the use of this key results in a Corps determination of "no effect" for a particular project, the Service supports this determination. If the use of this Key results in a determination of NLAA, the Service concurs with this determination[1]. This Key is subject to revisitation as the Corps and Service deem necessary.

The Key is as follows:

A. Project within 0.76 km (0.47 mile)[2] of an active colony site[3] ..... "*may affect*[4]"

Project impacts Suitable Foraging Habitat (SFH)[5] at a location greater than 0.76 km (0.47 mile) from a colony site..... ....."*go to* B"

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

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

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

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

[5] Suitable foraging habitat (SFH) includes wetlands that typically have shallow-open water areas that are relatively calm and have a permanent or seasonal water depth between 5 to 38 cm (2 to 15 inches) deep. Other shallow non-wetland water bodies are also SFH. SFH supports and concentrates, or is capable of supporting and concentrating small fish, frogs, and other aquatic prey. Examples of SFH include, but are not limited to freshwater marshes, small ponds, shallow, seasonally flooded roadside or agricultural ditches, seasonally flooded pastures, narrow tidal creeks or shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs.

Project does not affect SFH……..….. *"no effect[1]"*.

B. Project impact to SFH is less than 0.20 hectare (one-half acre)[6]……..……*NLAA[1]*"

Project impact to SFH is greater in scope than 0.20 hectare (one-half acre)....……*go to* C

C. Project impacts to SFH not within the CFA (29.9 km, 18.6 miles) of a colony site ……..…….……..……*go to* D

Project impacts to SFH within the CFA of a colony site ……..…..……*go to* E

D. Project impacts to SFH have been avoided and minimized to the extent practicable; compensation (Service approved mitigation bank or as provided in accordance with Mitigation Rule 33 CFR Part 332) for unavoidable impacts is proposed in accordance with the CWA section 404(b)(1) guidelines; and habitat compensation replaces the foraging value matching the hydroperiod[7] of the wetlands affected and provides foraging value similar to, or higher than, that of impacted wetlands. See Enclosure 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance[8]…….. *NLAA[1]*"

Project not as above..…... "*may affect[4]*"

E. Project provides SFH compensation in accordance with the CWA section 404(b)(1) guidelines and is not contrary to the HMG; habitat compensation is within the appropriate CFA or within the service area of a Service-approved mitigation bank; and habitat compensation replaces foraging value, consisting of wetland enhancement or restoration matching the hydroperiod[7] of the wetlands affected, and provides foraging value similar

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

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

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

to, or higher than, that of impacted wetlands. See Enclosure 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance[8]……..... *"NLAA[1]"*

Project does not satisfy these elements ……..……..…..…..... *"may affect[4]"*

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

Monitoring and Reporting Effects

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

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

Sincerely yours,

Paul Souza
Field Supervisor
South Florida Ecological Services Office

Enclosures

cc: w/enclosures (electronic only)
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HABITAT MANAGEMENT GUIDELINES FOR THE WOOD STORK IN THE SOUTHEAST REGION

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HABITAT MANAGEMENT GUIDELINES FOR THE WOOD STORK IN THE SOUTHEAST REGION

Introduction

A number of Federal and state laws and/or regulations prohibit, cumulatively, such acts as harrassing, disturbing, harming, molesting, pursuing, etc., wood storks, or destroying their nests (see Section VII). Although advisory in nature, these guidelines represent a biological interpretation of what would constitute violations of one or more of such prohibited acts. Their purpose is to mainain and/or improve the environmental conditions that are required for the survival and well-being of wood storks in the southeastern United States, and are designed essentially for application in wood stork/human activity conflicts (principally land development and human intrusion into stork use sites). The emphasis is to avoid or minimize detrimental human-related impacts on wood storks. These guidelines were prepared in consultations with state wildlife agencies and wood stork experts in the four southeastern states where the wood stork is listed as Endangered (Alabama, Florida, Georgia, South Carolina).

General

The wood stork is a gregarious species, which nests in colonies (rookeries), and roosts and feeds in flocks, often in association with other species of long-legged water birds. Storks that nest in the southeastern United States appear to represent a distinct population, separate from the nearest breeding population in Mexico. Storks in the southeastern U.S. population have recently (since 1980) nested in colonies scattered throughout Florida, and at several central-southern Georgia and coastal South Carolina sites. Banded and color-marked storks from central and southern Florida colonies have dispersed during non-breeding seasons as far north as southern Georgia, and the coastal counties in South Carolina and southeastern North Carolina, and as far west as central Alabama and northeastern Mississippi. Storks from a colony in south-central Georgia have wintered between southern Georgia and southern Florida. This U.S. nesting population of wood storks was listed as endangered by the U.S. Fish and Wildlife Service on February 28, 1984 (*Federal Register* 49(4):7332-7335).

Wood storks use freshwater and estuarine wetlands as feeding, nesting, and roosting sites. Although storks are not habitat specialists, their needs are exacting enough, and available habitat is limited enough, so that nesting success and the size of regional populations are closely regulated by year-to-year differences in the quality and quantity of suitable habitat. Storks are especially sensitive to environmental conditions at feeding sites; thus, birds may fly relatively long distances either daily or between regions annually, seeking adequate food resources.

All available evidence suggests that regional declines in wood stork numbers have been largely due to the loss or degradation of essential wetland habitat. An understanding of the qualities of good stork habitat should help to focus protection efforts on those sites

that are seasonally important to regional populations of wood storks. Characteristics of feeding, nesting, and roosting habitat, and management guidelines for each, are presented here by habitat type.

I. Feeding habitat.

A major reason for the wood stork decline has been the loss and degredation of feeding habitat. Storks are especially sensitive to any manipulation of a wetland site that results in either reduced amounts or changes in the timing of food availability.

Storks feed primarily (often almost exclusively) on small fish between 1 and 8 inches in length. Successful foraging sites are those where the water is between 2 and 15 inches deep. Good feeding conditions usually occur where water is relatively calm and uncluttered by dense thickets of aquatic vegetation. Often a dropping water level is necessary to concentrate fish at suitable densities. Conversely, a rise in water, especially when it occurs abruptly, disperses fish and reduces the value of a site as feeding habitat.

The types of wetland sites that provide good feeding conditions for storks include: drying marshes or stock ponds, shallow roadside or agricultural ditches, narrow tidal creeks or shallow tidal pools, and depressions in cypress heads or swamp sloughs. In fact, almost any shallow wetland depression where fish tend to become concentrated, either through local reproduction or the consequences of area drying, may be used by storks.

Nesting wood storks do most of their feeding in wetlands between 5 and 40 miles from the colony, and occasionally at distances as great as 75 miles. Within this colony foraging range and for the 110-150 day life of the colony, and depending on the size of the colony and the nature of the surrounding wetlands, anywhere from 50 to 200 different feeding sites may be used during the breeding season.

Non-breeding storks are free to travel much greater distances and remain in a region only for as long as sufficient food is available. Whether used by breeders or non-breeders, any single feeding site may at one time have small or large numbers of storks (1 to 100+), and be used for one to many days, depending on the quality and quantity of available food. Obviously, feeding sites used by relatively large numbers of storks, and/or frequently used areas, potentially are the more important sites necessary for the maintenance of a regional population of birds.

Differences between years in the seasonal distribution and amount of rainfall usually mean that storks will differ between years in where and when they feed. Successful nesting colonies are those that have a large number of feeding site options, including sites that may be suitable only in years of rainfall extremes. To maintain the wide range of feeding site options requires that many different wetlands, with both relatively short and long annual hydroperiods, be preserved. For example, protecting only the larger wetlands, or those with longer annual hydroperiods, will result in the eventual loss of smaller, seemingly less important wetlands. However, these small scale wetlands are crucial as the only available feeding sites during the wetter periods when the larger habitats are too deeply flooded to be used by storks.

II. Nesting habitat.

Wood storks nest in colonies, and will return to the same colony site for many years so long as that site and surrounding feeding habitat continue to supply the needs of the birds. Storks require between 110 and 150 days for the annual nesting cycle, from the period of courtship until the nestlings become independent. Nesting activity may begin as early as December or as late as March in southern Florida colonies, and between late February and April in colonies located between central Florida and South Carolina. Thus, full term colonies may be active until June-July in south Florida, and as late as July-August at more northern sites. Colony sites may also be used for roosting by storks during other times of the year.

Almost all recent nesting colonies in the southeastern U.S. have been located either in woody vegetation over standing water, or on islands surrounded by broad expanses of open water. The most dominant vegetation in swamp colonies has been cypress, although storks also nest in swamp hardwoods and willows. Nests in island colonies may be in more diverse vegetation, including mangroves (coastal), exotic species such as Australian pine (*Casuarina*) and Brazilian Pepper (*Schinus*), or in low thickets of cactus (*Opuntia*). Nests are usually located 15-75 feet above ground, but may be much lower, especially on island sites when vegetation is low.

Since at least the early 1970's, many colonies in the southeastern U.S. have been located in swamps where water has been impounded due to the construction of levees or roadways. Storks have also nested in dead and dying trees in flooded phosphate surface mines, or in low, woody vegetation on mounded, dredge islands. The use of these altered wetlands or completely "artificial" sites suggests that in some regions or years storks are unable to locate natural nesting habitat that is adequately flooded during the normal breeding season. The readiness with which storks will utilize water impoundments for nesting also suggests that colony sites could be intentionally created and maintained through long-term site management plans. Almost all impoundment sites used by storks become suitable for nesting only fortuitously, and therefore, these sites often do not remain available to storks for many years.

In addition to the irreversible impacts of drainage and destruction of nesting habitat, the greatest threats to colony sites are from human disturbance and predation. Nesting storks show some variation in the levels of human activity they will tolerate near a colony. In general, nesting storks are more tolerant of low levels of human activity near a colony when nests are high in trees than when they are low, and when nests contain partially or completely feathered young than during the period between nest construction and the early nestling period (adults still brooding). When adult storks are forced to leave their nests, eggs or downy young may die quickly (<20 minutes) when exposed to direct sun or rain.

Colonies located in flooded environments must remain flooded if they are to be successful. Often water is between 3 and 5 feet deep in successful colonies during the nesting season. Storks rarely form colonies, even in traditional nesting sites, when they are dry, and may abandon nests if sites become dry during the nesting period. Flooding in colonies may be most important as a defense against mammalian predators. Studies of stork colonies in Georgia and

Florida have shown high rates of raccoon predation when sites dried during the nesting period. A reasonably high water level in an active colony is also a deterrent against both human and domestic animal intrusions.

Although nesting wood storks usually do most feeding away from the colony site (>5 miles), considerable stork activity does occur close to the colony during two periods in the nesting cycle. Adult storks collect almost all nesting material in and near the colony, usually within 2500 feet. Newly fledged storks, near the end of the nesting cycle, spend from 1-4 weeks during the fledging process flying locally in the colony area, and perched in nearby trees or marshy spots on the ground. These birds return daily to their nests to be fed. It is essential that these fledging birds have little or no disturbance as far our as one-half mile within at least one or two quadrants from the colony. Both the adults, while collecting nesting material, and the inexperienced fledglings, do much low, flapping flight within this radius of the colony. At these times, storks potentially are much more likely to strike nearby towers or utility lines.

Colony sites are not necessarily used annually. Regional populations of storks shift nesting locations between years, in response to year-to-year differences in food resources. Thus, regional populations require a range of options for nesting sites, in order to successfully respond to food availability. Protection of colony sites should continue, therefore, for sites that are not used in a given year.

III. Roosting habitat.

Although wood storks tend to roost at sites that are similar to those used for nesting, they also use a wider range of site types for roosting than for nesting. Non-breeding storks, for example, may frequently change roosting sites in response to changing feeding locations, and in the process, are inclined to accept a broad range of relatively temporary roosting sites. Included in the list of frequently used roosting locations are cypress "heads" or swamps (not necessarily flooded if trees are tall), mangrove islands, expansive willow thickets or small, isolated willow "islands" in broad marshes, and on the ground either on levees or in open marshes.

Daily activity patterns at a roost vary depending on the status of the storks using the site. Non-breeding adults or immature birds may remain in roosts during major portions of some days. When storks are feeding close to a roost, they may remain on the feeding grounds until almost dark before making the short flight. Nesting storks traveling long distances (>40 miles) to feeding sites may roost at or near the latter, and return to the colony the next morning. Storks leaving roosts, especially when going long distances, tend to wait for mid-morning thermals to develop before departing.

IV. Management zones and guidelines for feeding sites.

To the maximum extent possible, feeding sites should be protected by adherence to the following protection zones and guidelines:

A. There should be no human intrusion into feeding sites when storks are present. Depending upon the amount of screening vegetation, human activity should be no closer than between 300 feet (where solid vegetation screens exist) and 750 feet (no vegetation screen).

B. Feeding sites should not be subjected to water management practices that alter traditional water levels or the seasonally normal drying patterns and rates. Sharp rises in water levels are especially disruptive to feeding storks.

C. The introduction of contaminants, fertilizers, or herbicides into wetlands that contain stork feeding sites should be avoided, especially those compounds that could adversely alter the diversity and numbers of native fishes, or that could substantially change the characteristics of aquatic vegetation. Increase in the density and height of emergent vegetation can degrade or destroy sites as feeding habitat.

D. Construction of tall towers (especially with guy wires) within three miles, or high power lines (especially across long stretches of open country) within one mile of major feeding sites should be avoided.

V. Management zones and guidelines for nesting colonies.

A. Primary zone: This is the most critical area, and must be managed according to recommended guidelines to insure that a colony site survives.

1. Size: The primary zone must extend between 1000 and 1500 feet in all directions from the actual colony boundaries when there are no visual or broad aquatic barriers, and never less than 500 feet even when there are strong visual or aquatic barriers. The exact width of the primary zone in each direction from the colony can vary within this range, depending on the amount of visual screen (tall trees) surrounding the colony, the amount of relatively deep, open water between the colony and the nearest human activity, and the nature of the nearest human activity. In general, storks forming new colonies are more tolerant of existing human activity, than they will be of new human activity that begins after the colony has formed.

2. Recommended Restrictions:

a. Any of the following activities within the primary zone, at any time of the year, are likely to be detrimental to the colony:

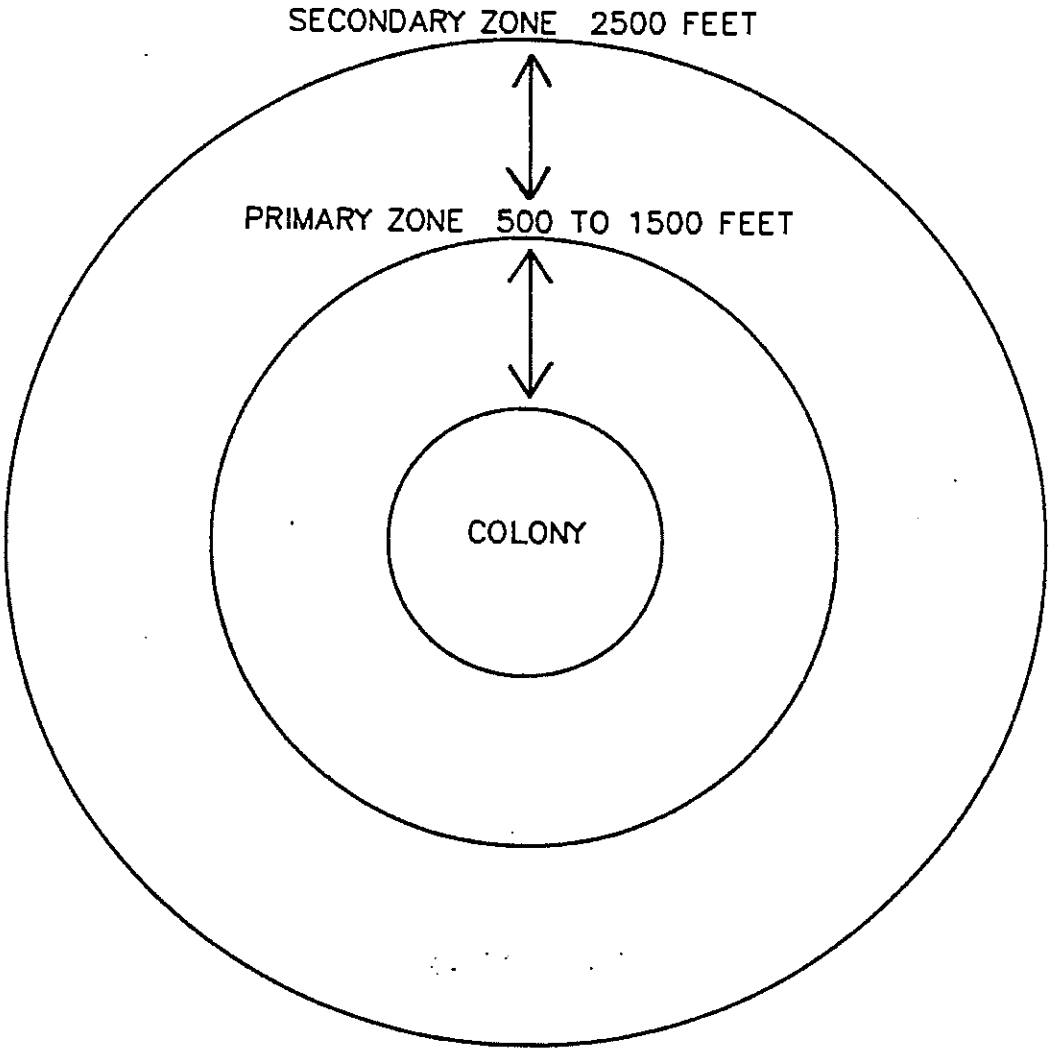
(1) Any lumbering or other removal of vegetation, and

(2) Any activity that reduces the area, depth, or length of flooding in wetlands under and surrounding the colony, except where periodic (less than annual) water control may be required to maintain the health of the aquatic, woody vegetation, and

(3) The construction of any building, roadway, tower, power line, canal, etc.

b. The following activities within the primary zone are likely to be detrimental to a colony if they occur when the colony is active:

(1) Any unauthorized human entry closer than 300 feet of the colony, and


SECONDARY ZONE 2500 FEET
PRIMARY ZONE 500 TO 1500 FEET
COLONY

(2) Any increase or irregular pattern in human activity anywhere in the primary zone, and

(3) Any increase or irregular pattern in activity by animals, including livestock or pets, in the colony, and

(4) Any aircraft operation closer than 500 feet of the colony.

B. Secondary Zone: Restrictions in this zone are needed to minimize disturbances that might impact the primary zone, and to protect essential areas outside of the primary zone. The secondary zone may be used by storks for collecting nesting material, for roosting, loafing, and feeding (especially important to newly fledged young), and may be important as a screen between the colony and areas of relatively intense human activities.

1. Size: The secondary zone should range outward from the primary zone 1000-2000 feet, or to a radius of 2500 feet of the outer edge of the colony.

2. Recommended Restrictions:

a. Activities in the secondary zone which may be detrimental to nesting wood storks include:

(1) Any increase in human activities above the level that existed in the year when the colony first formed, especially when visual screens are lacking, and

(2) Any alteration in the area's hydrology that might cause changes in the primary zone, and

(3) Any substantial (>20 percent) decrease in the area of wetlands and woods of potential value to storks for roosting and feeding.

b. In addition, the probability that low flying storks, or inexperienced, newly-fledged young will strike tall obstructions, requires that high-tension power lines be no closer than one mile (especially across open country or in wetlands) and tall trans-mission towers no closer than 3 miles from active colonies. Other activities, including busy highways and commercial and residential buildings may be present in limited portions of the secondary zone at the time that a new colony first forms. Although storks may tolerate existing levels of human activities, it is important that these human activities not expand substantially.

VI. Roosting site guidelines.

The general characteristics and temporary use-patterns of many stork roosting sites limit the number of specific management recommendations that are possible:

A. Avoid human activities within 500-1000 feet of roost sites during seasons of the year and times of the day when storks may be present. Nocturnal activities in active roosts may be especially disruptive.

B. Protect the vegetative and hydrological characteristics of the more important roosting sites--those used annually and/or used by flocks of 25 or more storks. Potentially, roosting sites may, some day, become nesting sites.

VII. Legal Considerations.

A. Federal Statutes

The U.S. breeding population of the wood stork is protected by the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.)(Act). The population was listed as endangered on February 28, 1984 (49 Federal *Register* 7332); wood storks breeding in Alabama, Florida, Georgia, and South Carolina are protected by the Act.

Section 9 of the Endangered Species Act of 1973, as amended, states that it is unlawful for any person subject to the jurisdiction of the United States to take (defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.") any listed species anywhere within the United States.

The wood stork is also federally protected by its listing (50 CFR 10.13) under the Migratory Bird Treaty Act (167 U.S.C. 703-711), which prohibits the taking, killing or possession of migratory birds except as permitted.

B. State Statutes

1. State of Alabama

Section 9-11-232 of Alabama's Fish, Game, and Wildlife regulations curtails the possession, sale, and purchase of wild birds. "Any person, firm, association, or corporation who takes, catches, kills or has in possession at any time, living or dead, any protected wild bird not a game bird or who sells or offers for sale, buys, purchases or offers to buy or purchase any such bird or exchange same for anything of value or who shall sell or expose for sale or buy any part of the plumage, skin, or body of any bird protected by the laws of this state or who shall take or willfully destroy the nests of any wild bird or who shall have such nests or eggs of such birds in his possession, except as otherwise provided by law, shall be guilty of a misdemeanor...

Section 1 of the Alabama Nongame Species Regulation (Regulation 87-GF-7) includes the wood stork in the list of nongame species covered by paragraph (4). " It shall be unlawful to take, capture, kill, possess, sell, trade for anything of monetary value, or offer to sell or trade for anything of monetary value, the following nongame wildlife species (or any parts or reproductive products of such species) without a scientific collection permit and written permission from the Commissioner, Department of Conservation and Natural Resources,..."

2. State of Florida

Rule 39-4.001 of the Florida Wildlife Code prohibits "taking, attempting to take, pursuing, hunting, molesting, capturing, or killing (collectively defined as "taking"), transporting, storing, serving, buying, selling,

possessing, or wantonly or willingly wasting any wildlife or freshwater fish or their nests, eggs, young, homes, or dens except as specifically provided for in other rules of Chapter 39, Florida Administrative Code.

Rule 39-27.011 of the Florida Wildlife Code prohibits "killing, attempting to kill, or wounding any endangered species." The "Official Lists of Endangered and Potentially Endangered Fauna and Flora in Florida" dated 1 July 1988, includes the wood stork, listed as "endangered" by the Florida Game and Fresh Water Fish Commission.

3. State of Georgia

Section 27-1-28 of the Conservation and Natural Resources Code states that "Except as otherwise provided by law, rule, or regulation, it shall be unlawful to hunt, trap, fish, take, possess, or transport any nongame species of wildlife..."

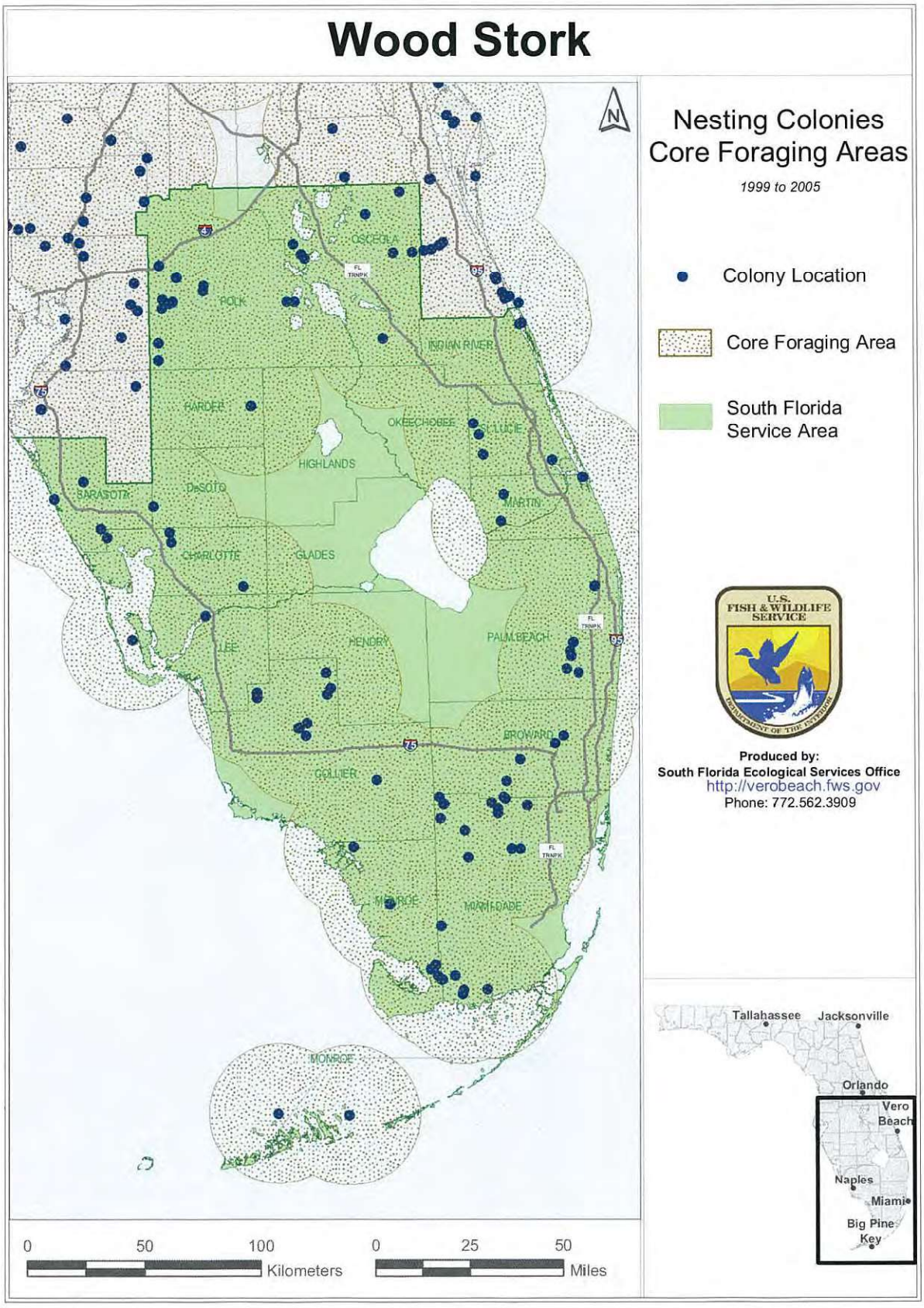
Section 27-1-30 states that, "Except as otherwise provided by law or regulation, it shall be unlawful to disturb, mutilate, or destroy the dens, holes, or homes of any wildlife; "

Section 27-3-22 states, in part, "It shall be unlawful for any person to hunt, trap, take, possess, sell, purchase, ship, or transport any hawk, eagle, owl, or any other bird or any part, nest, or egg thereof...".

The wood stork is listed as endangered pursuant to the Endangered Wildlife Act of 1973 (Section 27-3-130 of the Code). Section 391-4-13-.06 of the Rules and Regulations of the Georgia Department of Natural Resources prohibits harassment, capture, sale, killing, or other actions which directly cause the death of animal species protected under the Endangered Wildlife Act. The destruction of habitat of protected species on public lands is also prohibited.

4. State of South Carolina

Section 50-15-40 of the South Carolina Nongame and Endangered Species Conservation Act states, "Except as otherwise provided in this chapter, it shall be unlawful for any person to take, possess, transport, export, process, sell, or offer of sale or ship, and for any common or contract carrier knowingly to transport or receive for shipment any species or subspecies of wildlife appearing on any of the following lists: (1) the list of wildlife indigenous to the State, determined to be endangered within the State...(2) the United States' List of Endangered Native Fish and Wildlife... (3) the United States' List of Endangered Foreign Fish and Wildlife ..."


Wood Stork
Nesting Colonies
Core Foraging Areas
1999 to 2005
Colony Location
Core Foraging Area
South Florida
Service Area
OSCEOLA
POLK
INDIAN RIVER
HARDEE
OKEECHOBEE
ST. LUCIE
HIGHLANDS
SARASOTA
DeSOTO
MARTIN
CHARLOTTE
GLADES
LEE
HENDRY
PALM BEACH
BROWARD
COLLIER
MONROE
MIAMI-DADE
FL TRNPK
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Tallahassee
Jacksonville
Orlando
Vero Beach
Naples
Miami
Big Pine Key
0 50 100 Kilometers
0 25 50 Miles

Enclosure 3

Wood Stork Foraging Analysis: Excerpts of concepts and procedure as presented by the Service in this appendix may be viewed in detail in any one of our recent Biological Opinions for project related impacts to the wood stork. These documents can be found at the internet website address http://www.fws.gov/filedownloads/ftp%5verobeach.

Foraging Habitat

Researchers have shown that wood storks forage most efficiently and effectively in habitats where prey densities are high and the water shallow and canopy open enough to hunt successfully (Ogden et al. 1978, Browder 1984, Coulter 1987). Prey availability to wood storks is dependent on a composite variable consisting of density (number or biomass/m^2) and the vulnerability of the prey items to capture (Gawlik 2002). For wood storks, prey vulnerability appears to be largely controlled by physical access to the foraging site, water depth, the density of submerged vegetation, and the species-specific characteristics of the prey. For example, fish populations may be very dense, but not available (vulnerable) because the water depth is too deep (greater than 30 cm) for storks or the tree canopy at the site is too dense for storks to land. Calm water, about 5-40 cm (2-16 in) in depth, and free of dense aquatic vegetation is ideal (Coulter and Bryan 1993).

Coulter and Bryan's (1993) study suggested that wood storks preferred ponds and marshes, and visited areas with little or no canopy more frequently. Even in foraging sites in swamps, the canopy tended to be sparse. They suggested that open canopies may have contributed to detection of the sites and more importantly may have allowed the storks to negotiate landing more easily than at closed-canopy sites. In their study, the median amount of canopy cover where wood stork foraging was observed was 32 percent. Other researchers (P.C. Frederick, University of Florida, personal communication 2006; J.A. Rodgers, FWC, personal communication 2006) also confirm that wood storks will forage in woodlands, though the woodlands have to be fairly open and vegetation not very dense. Furthermore, the canopies must be open enough for wood storks to take flight quickly to avoid predators.

Melaleuca-infested Wetlands: As discussed previously, wetland suitability for wood stork foraging is partially dependent on vegetation density. Melaleuca is a dense-stand growth plant species, effectively producing a closed canopy and dense understory growth pattern that generally limits a site's accessibility to foraging by wading birds. However, O'Hare and Dalrymple (1997) suggest moderate infestations of melaleuca may have little effect on some species' productivity (*i.e.*, amphibians and reptiles) as long as critical abiotic factors such as hydrology remain. They also note as the levels of infestation increase, usage by wetland dependent species decreases. Their studies also showed that the number of fish species present in a wetland system remain stable at certain levels of melaleuca. However, the availability of the prey base for wood storks and other foraging wading birds is reduced by the restriction of access caused from dense and thick exotic vegetation. Wood storks and other wading birds can forage in these systems in open area pockets (*e.g.*, wind blow-downs), provided multiple conditions are optimal (*e.g.*, water depth, prey density). In O'Hare and Dalrmyple's study (1997), they identify five cover types (Table 1) and

provide information on the number of wetland dependent bird species and the number of individuals observed within each of these vegetation classes (Table 2).

Table 1: Vegetation classes

DMM	75-100 percent mature dense melaleuca coverage
DMS or (SDM)	75-100 percent sapling dense melaleuca coverage
P75	50-75 percent melaleuca coverage
P50	0-50 percent melaleuca coverage
MAR (Marsh)	0-10 percent melaleuca coverage

The number of wetland-dependent species and individuals observed per cover type is shown below in columns 1, 2, and 3 (Table 2). To develop an estimate of the importance a particular wetland type may have (based on density and aerial coverage by exotic species) to wetland dependent species, we developed a foraging suitability value using observational data from O'Hare and Dalrymple (1997). The Foraging Suitability Value as shown in column 5 (Table 2) is calculated by multiplying the number of species by the number of individuals and dividing this value by the maximum number of species and individuals combined (12*132=1584). The results are shown below for each of the cover types in O'Hare and Dalrymple (1997) study (Table 1). As an example, for the P50 cover type, the foraging suitability is calculated by multiplying 11 species times 92 individuals for a total of 1,012. Divide this value by 1,584, which is the maximum number of species times the maximum number of individuals (12*132 = 1,584). The resultant is 0.6389 or 64 percent 11*92=1012/1584*100=63.89).

Table 2: Habitat Foraging Suitability

Cover Type	# of Species (S)	# of Individuals (I)	S*I	Foraging Suitability
DMM	1	2	2	0.001
DMS	4	10	40	0.025
P75	10	59	590	0.372
P50	11	92	1,012	0.639
MAR	12	132	1,584	1.000

This approach was developed to provide us with a method of assessing wetland acreages and their relationship to prey densities and prey availability. We consider wetland dependent bird use to be a general index of food availability. Based on this assessment we developed an exotic foraging suitability index (Table 3):

Table 3. Foraging Suitability Percentages

Exotic Percentage	Foraging Suitability (percent)
Between 0 and 25 percent exotics	100
Between 25 and 50 percent exotics	64
Between 50 and 75 percent exotics	37
Between 75 and 90 percent exotics	3
Between 90 and 100 percent exotics	0

In our assessment however, we consider DMM to represent all exotic species densities between 90 and 100 percent and DMS to represent all exotic species densities between 75 and 90 percent. In our evaluation of a habitat's suitability, the field distinction between an exotic coverage of

90 percent and 100 percent in many situations is not definable, therefore unless otherwise noted in the field reports and in our analysis; we consider a suitability value of 3 percent to represent both densities.

Hydroperiod: The hydroperiod of a wetland can affect the prey densities in a wetland. For instance, research on Everglades fish populations using a variety of quantitative sampling techniques (pull traps, throw traps, block nets) have shown that the density of small forage fish increases with hydroperiod. Marshes inundated for less than120 days of the year average ± 4 fish/m^2; whereas, those flooded for more than 340 days of the year average ± 25 fish/m^2 (Loftus and Eklund 1994, Trexler et al. 2002).

The Service (1999) described a short hydroperiod wetland as wetlands with between 0 and 180-day inundation, and long hydroperiod wetlands as those with greater than 180-day inundation. However, Trexler et al. (2002) defined short hydroperiod wetlands as systems with less than 300 days per year inundation. In our discussion of hydroperiods, we are considering short hydroperiod wetlands to be those that have an inundation of 180 days or fewer.

The most current information on hydroperiods in south Florida was developed by the SFWMD for evaluation of various restoration projects throughout the Everglades Protection Area. In their modeling efforts, they identified the following seven hydroperiods:

Table 4. SFWMD Hydroperiod Classes – Everglades Protection Area

Hydroperiod Class	Days Inundated
Class 1	0-60
Class 2	60-120
Class 3	120-180
Class 4	180-240
Class 5	240-300
Class 6	300-330
Class 7	330-365

Fish Density per Hydroperiod: In the Service's assessment of project related impacts to wood storks, the importance of fish data specific to individual hydroperiods is the principle basis of our assessment. In order to determine the fish density per individual hydroperiod, the Service relied on the number of fish per hydroperiod developed from throw-trap data in Trexler et al.'s (2002) study and did not use the electrofishing data also presented in Trexler et al.'s study that defined fish densities in catch per unit effort, which is not hydroperiod specific. Although the throw-trap sampling generally only samples fish 8 cm or less, the Service believes the data can be used as a surrogate representation of all fish, including those larger than 8 cm, which are typically sampled by either electrofishing or block net sampling.

We base this evaluation on the following assessment. Trexler et al.'s (2002) study included electrofishing data targeting fish greater than 8 cm, the data is recorded in catch per unit effort and in general is not hydroperiod specific. However, Trexler et al. (2002) notes in their assessment of the electrofishing data that in general there is a correlation with the number of fish per unit effort per changes in water depth. In literature reviews of electrofishing data by Chick et

al. (1999 and 2004), they note that electrofishing data provides a useful index of the abundance of larger fish in shallow, vegetated habitat, but length, frequency, and species compositional data should be interpreted with caution. Chick et al. (2004) also noted that electrofishing data for large fish (> 8cm) provided a positive correlation of the number of fish per unit effort (abundance) per changes in hydropeiod. The data in general show that as the hydroperiod decreases, the abundance of larger fishes also decreases.

Studies by Turner et al. (1999), Turner and Trexler (1997), and Carlson and Duever (1979) also noted this abundance trend for fish species sampled. We also noted in our assessment of prey consumption by wood storks in the Ogden et al. (1976) study (Figure 4) (discussed below), that the wood stork's general preference is for fish measuring 1.5 cm to 9 cm, although we also acknowledged that wood storks consume fish larger than the limits discussed in the Ogden et al. (1976) study. A similar assessment is reference by Trexler and Goss (2009) noting a diversity of size ranges of prey available for wading birds to consume, with fish ranging from 6 to 8 cm being the preferred prey for larger species of wading birds, particularly wood storks (Kushlan et al. 1975).

Therefore, since data were not available to quantify densities (biomass) of fish larger than 8 cm to a specific hydroperiod, and Ogden et al.'s (1976) study notes that the wood stork's general preference is for fish measuring 1.5 cm to 9 cm, and that empirical data on fish densities per unit effort correlated positively with changes in water depth, we believe that the Trexler et al. (2002) throw-trap data represents a surrogate assessment tool to predict the changes in total fish density and the corresponding biomass per hydroperiod for our wood stork assessment.

In consideration of this assessment, the Service used the data presented in Trexler et al.'s (2002) study on the number of fish per square-meter per hydroperiod for fish 8 cm or less to be applicable for estimating the total biomass per square-meter per hydroperiod for all fish. In determining the biomass of fish per square-meter per hydroperiod, the Service relied on the summary data provided by Turner et al. (1999), which provides an estimated fish biomass of 6.5 g/m^2 for a Class 7 hydroperiod for all fish and used the number of fish per square-meter per hydroperiod from Trexler et al.'s data to extrapolate biomass values per individual hydroperiods.

Trexler et al.'s (2002) studies in the Everglades provided densities, calculated as the square-root of the number of fish per square meter, for only six hydroperiods; although these cover the same range of hydroperiods developed by the SFWMD. Based on the throw-trap data and Trexler et al.'s (2002) hydroperiods, the square-root fish densities are:

Table 5. Fish Densities per Hydroperiod from Trexler et al. (2002)

Hydroperiod Class	Days Inundated	Fish Density
Class 1	0-120	2.0
Class 2	120-180	3.0
Class 3	180-240	4.0
Class 4	240-300	4.5
Class 5	300-330	4.8
Class 6	330-365	5.0

Trexler et al.'s (2002) fish densities are provided as the square root of the number of fish per square meter. For our assessment, we squared these numbers to provide fish per square meter, a simpler calculation when other prey density factors are included in our evaluation of adverse effects to listed species from the proposed action. We also extrapolated the densities over seven hydroperiods, which is the same number of hydroperiods characterized by the SFWMD. For example, Trexler et al.'s (2002) square-root density of a Class 2 wetland with three fish would equate to a SFWMD Model Class 3 wetland with nine fish. Based on the above discussion, the following mean annual fish densities were extrapolated to the seven SFWMD Model hydroperiods:

Table 6. Extrapolated Fish Densities for SFWMD Hydroperiods

Hydroperiod Class	Days Inundated	Extrapolated Fish Density
Class 1	0-60	2 fish/m^2
Class 2	60-120	4 fish/m^2
Class 3	120-180	9 fish/m^2
Class 4	180-240	16 fish/m^2
Class 5	240-300	20 fish/m^2
Class 6	300-330	23 fish/m^2
Class 7	330-365	25 fish/m^2

Fish Biomass per Hydroperiod: A more important parameter than fish per square-meter in defining fish densities is the biomass these fish provide. In the ENP and WCA-3, based on studies by Turner et al. (1999), Turner and Trexler (1997), and Carlson and Duever (1979), the standing stock (biomass) of large and small fishes combined in unenriched Class 5 and 6 hydroperiod wetlands averaged between 5.5 to 6.5 grams-wet-mass/m^2. In these studies, the data was provided in g/m^2 dry-weight and was converted to g/m^2 wet-weight following the procedures referenced in Kushlan et al. (1986) and also referenced in Turner et al. (1999). The fish density data provided in Turner et al. (1999) included both data from samples representing fish 8 cm or smaller and fish larger than 8 cm and included summaries of Turner and Trexler (1997) data, Carlson and Duever (1979) data, and Loftus and Eklund (1994) data. These data sets also reflected a 0.6 g/m^2 dry-weight correction estimate for fish greater than 8 cm based on Turner et al.'s (1999) block-net rotenone samples.

Relating this information to the hydroperiod classes developed by the SFWMD, we estimated the mean annual biomass densities per hydroperiod. For our assessment, we considered Class 7 hydroperiod wetlands based on Turner et al. (1999) and Trexler et al. (2002) studies to have a mean annual biomass of 6.5 grams-wet-mass/m^2 and to be composed of 25 fish/m^2. The remaining biomass weights per hydroperiod were determined as a direct proportion of the number of fish per total weight of fish for a Class 7 hydroperiod (6.5 grams divided by 25 fish equals 0.26 grams per fish).

For example, given that a Class 3 hydroperiod has a mean annual fish density of 9 fish/m^2, with an average weight of 0.26 grams per fish, the biomass of a Class 3 hydroperiod would be 2.3 grams/m^2 (9*0.26 = 2.3). Based on the above discussion, the biomass per hydroperiod class is:

Table 7. Extrapolated Mean Annual Fish Biomass for SFWMD Hydroperiods

Hydroperiod Class	Days Inundated	Extrapolated Fish Biomass
Class 1	0-60	0.5 gram/m^2
Class 2	60-120	1.0 gram/m^2
Class 3	120-180	2.3 grams/m^2
Class 4	180-240	4.2 grams/m^2
Class 5	240-300	5.2 grams/m^2
Class 6	300-330	6.0 grams/m^2
Class 7	330-365	6.5 grams/m^2

Wood stork suitable prey size: Wood storks are highly selective in their feeding habits and in studies on fish consumed by wood storks, five species of fish comprised over 85 percent of the number and 84 percent of the biomass of over 3,000 prey items collected from adult and nestling wood storks (Ogden et al. 1976). Table 8 lists the fish species consumed by wood storks in Ogden et al. (1976).

Table 8. Primary Fish Species consumed by Wood Storks from Ogden et al. (1976)

Common name	Scientific name	Percent Individuals	Percent Biomass
Sunfishes	*Centrarchidae*	14	44
Yellow bullhead	*Italurus natalis*	2	12
Marsh killifish	*Fundulus confluentus*	18	11
Flagfish	*Jordenella floridae*	32	7
Sailfin molly	*Poecilia latipinna*	20	11

These species were also observed to be consumed in much greater proportions than they occur at feeding sites, and abundant smaller species [*e.g.*, mosquitofish (*Gambusia affinis*), least killifish (*Heterandria formosa*), bluefin killifish (*Lucania goodei*)] are under-represented, which the researchers believed was probably because their small size did not elicit a bill-snapping reflex in these tactile feeders (Coulter et al. 1999). Their studies also showed that, in addition to selecting larger species of fish, wood storks consumed individuals that are significantly larger (>3.5 cm) than the mean size available (2.5 cm), and many were greater than 1-year old (Ogden et al. 1976, Coulter et al. 1999). However, Ogden et al. (1976) also found that wood storks most likely consumed fish that were between 1.5 and 9.0 cm in length (Figure 4 in Ogden et al. 1976).

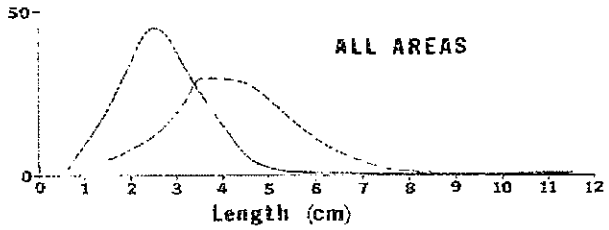

FIGURE 4. Length frequency distribution of fish available to and consumed by Wood Storks in different habitats.

In Ogden et al.'s (1976) Figure 4, the dotted line is the distribution of fish consumed and the solid line is the available fish. Straight interpretation of the area under the dotted line curve

represents the size classes of fish most likely consumed by wood storks and is the basis of our determination of the amount of biomass that is within the size range of fish most likely consumed by wood storks, which in this example is a range size of 1.5 to 9.0 cm in length.

Wood stork suitable prey base (biomass per hydroperiod): To estimate that fraction of the available fish biomass that might be consumed by wood storks, the following analysis was conducted. Trexler et al.'s (2002) 2-year throw trap data of absolute and relative fish abundance per hydroperiod distributed across 20 study sites in the ENP and the WCAs was considered to be representative of the Everglades fish assemblage available to wood storks (n = 37,718 specimens of 33 species). Although Trexler et al.'s (2002) data was based on throw-trap data and representative of fish 8 cm or smaller, the Service believes the data set can be used to predict the biomass/m^2 for total fish (those both smaller and larger than 8 cm). This approach is also supported, based on our assessment of prey consumption by wood storks in Ogden et al.'s (1976) study (Figure 4), that the wood storks general preference is for fish measuring 1.5 cm to 9 cm and is generally inclusive of Trexler et al.'s (2002) throw-trap data of fish 8 cm or smaller.

To estimate the fraction of the fish biomass that might be consumed by wood storks, the Service, using Trexler et al.'s (2002) throw-trap data set, determined the mean biomass of each fish species that fell within the wood stork prey size limits of 1.5 to 9.0 cm. The mean biomass of each fish species was estimated from the length and wet mass relationships for Everglades' icthyofauna developed by Kushlan et al. (1986). The proportion of each species that was outside of this prey length and biomass range was estimated using the species mean and variance provided in Table 1 in Kushlan et al. (1986). These biomass estimates assumed the length and mass distributions of each species was normally distributed and the fish biomass could be estimated by eliminating that portion of each species outside of this size range. These biomass estimates of available fish prey were then standardized to a sum of 6.5 g/m^2 for Class 7 hydroperiod wetlands (Service 2009).

For example, Kushlan et al. (1986) lists the warmouth (*Lepomis gulosus*) with a mean average biomass of 36.76 g. In fish samples collected by Trexler et al. (2002), this species accounted for 0.048 percent (18/37,715=0.000477) of the Everglades freshwater ichthyofauna. Based on an average biomass of 36.76 g (Kushlan et al. 1986), the 0.048 percent representation from Trexler et al. (2002) is equivalent to an average biomass of 1.75 g (36.76*0.048) or 6.57 percent (1.75/26.715) of the estimated average biomass (26.715 g) of Trexler et al.'s (2002) samples (Service 2009).

Standardizing these data to a sample size of 6.5 g/m^2, the warmouth biomass for long hydroperiod wetlands would be about 0.427 g (Service 2009). However, the size frequency distribution (assumed normal) for warmouth (Kushlan et al. 1986) indicate 48 percent are too large for wood storks and 0.6 percent are too small (outside the 1.5 cm to 9 cm size range most likely consumed), so the warmouth biomass within the wood stork's most likely consumed size range is only 0.208 g (0.427*(0.48+0.006)=0.2075) in a 6.5 g/m^2 sample. Using this approach summed over all species in long hydroperiod wetlands, only 3.685 g/m^2 of the 6.5 g/m^2 sample consists of fish within the size range likely consumed by wood storks or about 57 percent (3.685/6.5*100=56.7) of the total biomass available.

An alternative approach to estimate the available biomass is based on Ogden et al. (1976). In their study (Table 8), the sunfishes and four other species that accounted for 84 percent of the biomass eaten by wood storks totaled 2.522 g of the 6.5 g/m^2 sample (Service 2009). Adding the remaining 16 percent from other species in the sample, the total biomass would suggest that 2.97 g of a 6.5 g/m^2 sample are most likely to be consumed by wood storks or about 45.7 percent (2.97/6.5=0.4569)

The mean of these two estimates is 3.33g/m^2 for long hydroperiod wetlands (3.685 + 2.97 = 6.655/ 2 = 3.33). This proportion of available fish prey of a suitable size (3.33 g/m^2 / 6.5 g/m^2 = 0.51 or 51 percent) was then multiplied by the total fish biomass in each hydroperiod class to provide an estimate of the total biomass of a hydroperiod that is the appropriate size and species composition most likely consumed by wood storks.

As an example, a Class 3 SFWMD model hydroperiod wetland with a biomass of 2.3 grams/m^2, adjusted by 51 percent for appropriate size and species composition, provides an available biomass of 1.196 grams/m^2. Following this approach, the biomass per hydroperiod potentially available to predation by wood storks based on size and species composition is:

Table 9. Wood Stork Suitable Prey Base (fish biomass per hydroperiod)

Hydroperiod Class	Days Inundated	Fish Biomass
Class 1	0-60	0.26 gram/m^2
Class 2	60-120	0.52 gram/m^2
Class 3	120-180	1.196 grams/m^2
Class 4	180-240	2.184 grams/m^2
Class 5	240-300	2.704 grams/m^2
Class 6	300-330	3.12 grams/m^2
Class 7	330-365	3.38 grams/m^2

Wood Stork-Wading Bird Prey Consumption Competition: In 2006, (Service 2006), the Service developed an assessment approach that provided a foraging efficiency estimate that 55 percent of the available biomass was actually consumed by wood storks. Since the implementation of this assessment approach, the Service has received comments from various sources concerning the Service's understanding of Fleming et al.'s (1994) assessment of prey base consumed by wood storks versus prey base assumed available to wood stork and the factors included in the 90 percent prey reduction value.

In our original assessment, we noted that, "*Fleming et al. (1994) provided an estimate of 10 percent of the total biomass in their studies of wood stork foraging as the amount that is actually consumed by the storks. However, the Fleming et al. (1994) estimate also includes a second factor, the suitability of the foraging site for wood storks, a factor that we have calculated separately. In their assessment, these two factors accounted for a 90 percent reduction in the biomass actually consumed by the storks. We consider these two factors as equally important and are treated as equal components in the 90 percent reduction; therefore, we consider each factor to represent 45 percent of the reduction. In consideration of this approach, Fleming et al.'s (1994) estimate that 10 percent of the biomass would actually be consumed by the storks would be added to the 45 percent value for an estimate that 55 percent (10 percent plus the remaining 45 percent) of the available biomass would actually be consumed by the storks and is the factor we believe represents the amount of the prey base that is actually consumed by the stork.*"

In a follow-up review of Fleming et al.'s (1994) report, we noted that the 10 percent reference is to prey available to wood storks, not prey consumed by wood storks. We also noted the 90 percent reduction also includes an assessment of prey size, an assessment of prey available by water level (hydroperiod), an assessment of suitability of habitat for foraging (openness), and an assessment for competition with other species, not just the two factors considered originally by the Service (suitability and competition). Therefore, in re-evaluating of our approach, we identified four factors in the 90 percent biomass reduction and not two as we previously considered. We believe these four factors are represented as equal proportions of the 90 percent reduction, which corresponds to an equal split of 22.5 percent for each factor. Since we have accounted previously for three of these factors in our approach (prey size, habitat suitability, and hydroperiod) and they are treated separately in our assessment, we consider a more appropriate foraging efficiency to represent the original 10 percent and the remaining 22.5 percent from the 90 percent reduction discussed above. Following this revised assessment, our competition factor would be 32.5 percent, not the initial estimate of 55 percent.

Other comments reference the methodology's lack of sensitivity to limiting factors, i.e., is there sufficient habitat available across all hydroperiods during critical life stages of wood stork nesting and does this approach over emphasize the foraging biomass of long hydroperiod wetlands with a corresponding under valuation of short hydroperid wetlands. The Service is aware of these questions and is examining alternative ways to assess these concerns. However, until futher research is generated to refine our approach, we continue to support the assessment tool as outlined.

Following this approach, Table 10 has been adjusted to reflect the competition factor and represents the amount of biomass consumed by wood storks and is the basis of our effects assessments (Class 1 hydroperiod with a biomass 0.26 g, multiplied by 0.325, results in a value of 0.08 g [0.25*.325=0.08]) (Table 10).

Table 10 Actual Biomass Consumed by Wood Storks

Hydroperiod Class	Days Inundated	Fish Biomass
Class 1	0-60	0.08 gram/m^2
Class 2	60-120	0.17 gram/m^2
Class 3	120-180	0.39 grams/m^2
Class 4	180-240	0.71 grams/m^2
Class 5	240-300	0.88 grams/m^2
Class 6	300-330	1.01 grams/m^2
Class 7	330-365	1.10 grams/m^2

Sample Project of Biomass Calculations and Corresponding Concurrence Determination

Example 1:

An applicant is proposing to construct a residential development with unavoidable impacts to 5 acres of wetlands and is proposing to restore and preserve 3 acres of wetlands onsite. Data on the onsite wetlands classified these systems as exotic impacted wetlands with greater than 50

percent but less than 75 percent exotics (Table 3) with an average hydroperiod of 120-180 days of inundation.

The equation to calculate the biomass lost is: The number of acres, converted to square-meters, times the amount of actual biomass consumed by the wood stork (Table 10), times the exotic foraging suitability index (Table 3), equals the amount of grams lost, which is converted to kg.

Biomass lost (5*4,047*0.39 (Table 10)*0.37 (Table 3)=2,919.9 grams or 2.92 kg)

In the example provided, the 5 acres of wetlands, converted to square-meters (1 acre= 4,047 m^2) would provide 2.9 kg of biomass (5*4,047*0.39 (Table 10)*0.37 (Table 3)= 2,919.9 grams or 2.9 kg), which would be lost from development.

The equation to calculate the biomass from the preserve is the same, except two calculations are needed, one for the existing biomass available and one for the biomass available after restoration.

Biomass Pre: (3*4,047*0.39(Table 10)*0.37 (Table 3)=1,751.95grams or 1.75 kg)

Biomass Post: (3*4,047*0.39 (Table 10)*1(Table 3)=4,734.99 grams or 4.74 kg)

Net increase: 4.74 kg-1.75 kg = 2.98 kg Compensation Site

Project Site Balance 2.98 kg- 2.92 kg = 0.07kg

The compensation proposed is 3 acres, which is within the same hydroperiod and has the same level of exotics. Following the calculations for the 5 acres, the 3 acres in its current habitat state, provides 1.75 kg (3*4,047*0.39 (Table 10)*0.37 (Table 3)=1,751.95grams or 1.75 kg) and following restoration provides 4.74 kg (3*4,047*0.39 (Table 10)*1(Table 3)=4,734.99 grams or 4.74 kg), a net increase in biomass of 2.98 kg (4.74-1.75=2.98).

Example 1: 5 acre wetland loss, 3 acre wetland enhanced – same hydroperiod - NLAA

Hydroperiod	Existing Footprint		On-site Preserve Area				Net Change*	
			Pre Enhancement		Post Enhancement			
	Acres	Kgrams	Acres	Kgrams	Acres	Kgrams	Acres	Kgrams
Class 1 - 0 to 60 Days								
Class 2 - 60 to 120 Days								
Class 3 - 120 to 180 Days	5	2.92	3	1.75	3	4.74	(5)	0.07
Class 4 - 180 to 240 Days								
Class 5 - 240 to 300 Days								
Class 6 - 300 to 330 Days								
Class 7 - 330 to 365 days								
TOTAL	**5**	**2.92**	**3**	**1.75**	**3**	**4.74**	**(5)**	**0.07**

*Since the net increase in biomass from the restoration provides 2.98 kg and the loss is 2.92 kg, there is a positive outcome (4.74-1.75-2.92=0.07) in the same hydroperiod and Service concurrence with a NLAA is appropriate.

Example 2:

In the above example, if the onsite preserve wetlands were a class 4 hydroperiod, which has a value of 0.71. grams/m^2 instead of a class 3 hydroperiod with a 0.39 grams/m^2 [Table 10]), there would be a loss of 2.92 kg of short hydroperiod wetlands (as above) and a net gain of 8.62 kg of long-hydroperiod wetlands.

Biomass lost: (5*4,047*0.39 (Table 10)*0.37 (Table 3)=2,919.9 grams or 2.92 kg)

The current habitat state of the preserve provides 3.19 kg (3*4,047*0.71 (Table 10)*0.37 (Table 3)=3,189.44 grams or 3.19 kg) and following restoration the preserve provides 8.62 kg (3*4,047*0.71 (Table 10)*1(Table 3)= 8,620.11 grams or 8.62 kg, thus providing a net increase in class 4 hydroperiod biomass of 5.43 kg (8.62-3.19=5.43).

Biomass Pre: (3*4,047*0.71(Table 10)*0.37 (Table 3) = 3,189.44 grams or 3.19 kg)

Biomass Post: (3*4,047*0.71 (Table 10)*1(Table 3)=8,620.11 grams or 8.62 kg)

Net increase: 8.62 kg-3.19 kg = 5.43 kg

Project Site Balance 5.43 kg- 2.92 kg = 2.51 kg

Example 2: 5 acre wetland loss, 3 acre wetland enhanced – different hydroperiod – May Affect

Hydroperiod	Existing Footprint		On-site Preserve Area				Net Change*	
			Pre Enhancement		Post Enhancement			
	Acres	Kgrams	Acres	Kgrams	Acres	Kgrams	Acres	Kgrams
Class 1 - 0 to 60 Days								
Class 2 - 60 to 120 Days								
Class 3 - 120 to 180 Days	5	2.92					(5)	-2.92
Class 4 - 180 to 240 Days			3	3.19	3	8.62	0	5.43
Class 5 - 240 to 300 Days								
Class 6 - 300 to 330 Days								
Class 7 - 330 to 365 days								
TOTAL	**5**	**2.92**	**3**	**3.19**	**3**	**8.62**	**(5)**	**2.51**

In this second example, even though there is an overall increase in biomass, the biomass loss is a different hydroperiod than the biomass gain from restoration, therefore, the Service could not concur with a NLAA and further coordination with the Service is appropriate.

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