

ADMINISTRATIVE ACTION
TYPE 2 CATEGORICAL EXCLUSION

Florida Department of Transportation

ATLANTIC ISLE AT WEST OF SR A1A (BRIDGE# 874218)

District: FDOT District 6

County: Miami-Dade County

ETDM Number: 14413

Financial Management Number: 430029-2-21-01

Federal-Aid Project Number: D620-010-B

Project Manager: Victoria Vogt

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:

Victoria Vogt
District Cultural Resources Coordinator
Florida Department of Transportation
Florida Department of Transportation - District 6
Adam Leigh Cann Building
1000 NW 111th Avenue, Room 6111
Miami, Florida 33172
305-470-5420
Victoria.Vogt@dot.state.fl.us

Prime Consulting Firm:
Stantec

Consulting Project Manager:

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).

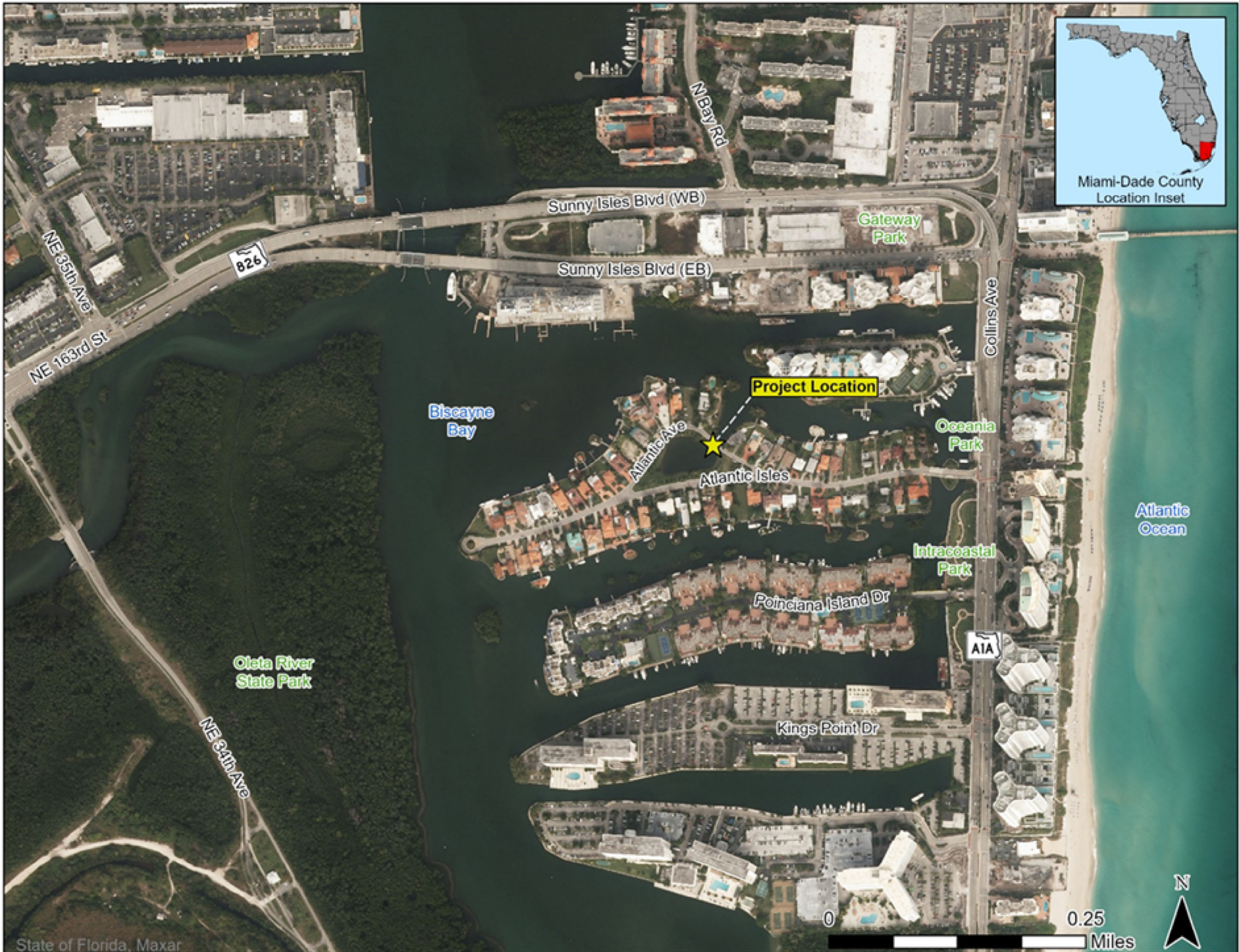
On 12/09/2019 the State of Florida determined that this project is consistent with the Florida Coastal Zone Management Program.

Table of Contents

1. Project Information	2
1.1 Project Description	2
1.2 Purpose and Need	4
1.3 Planning Consistency	5
2. Environmental Analysis Summary	6
3. Social and Economic	7
3.1 Social	7
3.2 Economic	10
3.3 Land Use Changes	10
3.4 Mobility	10
3.5 Aesthetic Effects	11
3.6 Relocation Potential	12
3.7 Farmland Resources	12
4. Cultural Resources	13
4.1 Section 106 of the National Historic Preservation Act	13
4.2 Section 4(f) of the USDOT Act of 1966, as amended	15
4.3 Section 6(f) of the Land and Water Conservation Fund Act of 1965	17
4.4 Recreational Areas and Protected Lands	17
5. Natural Resources	18
5.1 Protected Species and Habitat	18
5.2 Wetlands and Other Surface Waters	28
5.3 Essential Fish Habitat (EFH)	33
5.4 Floodplains	36
5.5 Sole Source Aquifer	36
5.6 Water Resources	36
5.7 Aquatic Preserves	38
5.8 Outstanding Florida Waters	38
5.9 Wild and Scenic Rivers	39

5.10 Coastal Barrier Resources	39
6. Physical Resources	40
6.1 Highway Traffic Noise	40
6.2 Air Quality	40
6.3 Contamination	40
6.4 Utilities and Railroads	40
6.5 Construction	41
7. Engineering Analysis Support	43
8. Permits	44
9. Public Involvement	45
10. Commitments Summary	48
11. Technical Materials	49
Attachments	50

DRAFT



1. Project Information

1.1 Project Description

The Florida Department of Transportation (FDOT) District Six is conducting a Project Development and Environment (PD&E) Study to address the deficiencies of the existing Atlantic Isle Bridge (Bridge No.874218). The Atlantic Isle Bridge is a historic bridge located on Atlantic Island just west of State Road (SR)A1A (Collins Avenue), within the City of Sunny Isles Beach in Miami-Dade County, Florida. The limits of the proposed project encompass the bridge (along Atlantic Avenue) and approaches a distance of approximately 0.009 mile. **Figure 1-1** presents the Project Location Map.

In September 2016, FDOT finalized the Atlantic Isle Lagoon Bridge Proof of Concept Report, which summarized a feasibility study to identify bridge rehabilitation alternatives that could preserve the service life of the bridge (FDOT 2016a). The Proof of Concept Report documented the evaluation of several alternatives to rehabilitate the bridge, which included reusing the existing concrete arch, replacing the existing arch with a new cast-in-place (CIP) reinforced concrete arch, reconstructing the existing bridge with a new precast concrete structure, and preserving the existing bridge with minor repairs but without any bridge rehabilitation. Subsequently, FDOT prepared the Atlantic Isle Bridge Rehabilitation Technical Memorandum in May 2018 to address a rehabilitation option for the bridge (FDOT 2018a). FDOT then prepared rehabilitation design plans based on the recommendation to reuse the existing concrete arch. The location of foundations was coordinated with the FDOT District 6 geotechnical and maintenance staff. Results from borings and excavations at the bridge approaches were not conclusive, and excavation of both approaches was required to complete the rehabilitation design plans. Because excavation of the bridge approaches could have an adverse effect on the bridge, FDOT discontinued the bridge rehabilitation design until further study of a range of alternatives could be analyzed for environmental effects. Subsequently, FDOT initiated this PD&E Study in September 2020 to fully evaluate impacts of all feasible alternatives. Prior to the initiation of this PD&E Study, an Advance Notification Package was distributed on October 23, 2019. The Efficient Transportation Decision Making (ETDM) Programming Screen (Project No. 14413) was completed in February 2020.

The Atlantic Isle Bridge is a one-way, low-level fixed bridge located along Atlantic Avenue on the north side of the Atlantic Isle Lagoon, approximately 0.25 mile west of SR A1A (Collins Avenue). The project study area (**Figure 1-2**) includes Atlantic Avenue and Atlantic Isle between the western and eastern intersections of the two roadways. The project study area is within the historic triangular landscape of the Atlantic Island Park [Florida Master Site File (FMSF) No. 8DA6433], which is both privately and publicly owned, and further includes an artificial lake, Lake of the Isles (8DA15824), which is historically known as Atlantic Isle Lagoon. Built circa 1925, Atlantic Isle Lagoon and Atlantic Island Park also are National Register of Historic Places (NRHP) eligible.

The Preferred Alternative involves replacing the entire bridge to address the structural and functional deficiencies of the existing superstructure and substructure to enhance operations and remove load restrictions. This would require demolition of the existing bridge and replacement of the bridge at the same location to minimize overall environmental impacts. The proposed bridge typical section would be approximately 27 feet wide to accommodate one 10-foot-wide travel lane, one 8-foot-wide shared-use path, 3-foot-wide shoulders, and concrete traffic railings on both sides. A raised sidewalk would separate pedestrians from vehicular traffic. The Preferred Alternative would be constructed within the existing ROW. However, to accommodate temporary bi-directional access during construction, Atlantic Avenue would require widening and additional temporary ROW at the turnout locations would be needed. Minor widening of Atlantic Avenue, which is proposed on the south side of the roadway to avoid ROW acquisition from the residences to the north will be required. Approximately 0.02 acre of temporary ROW is estimated to accommodate the temporary traffic control (TTC) for the Preferred Alternative. Construction is estimated to begin in 2027.

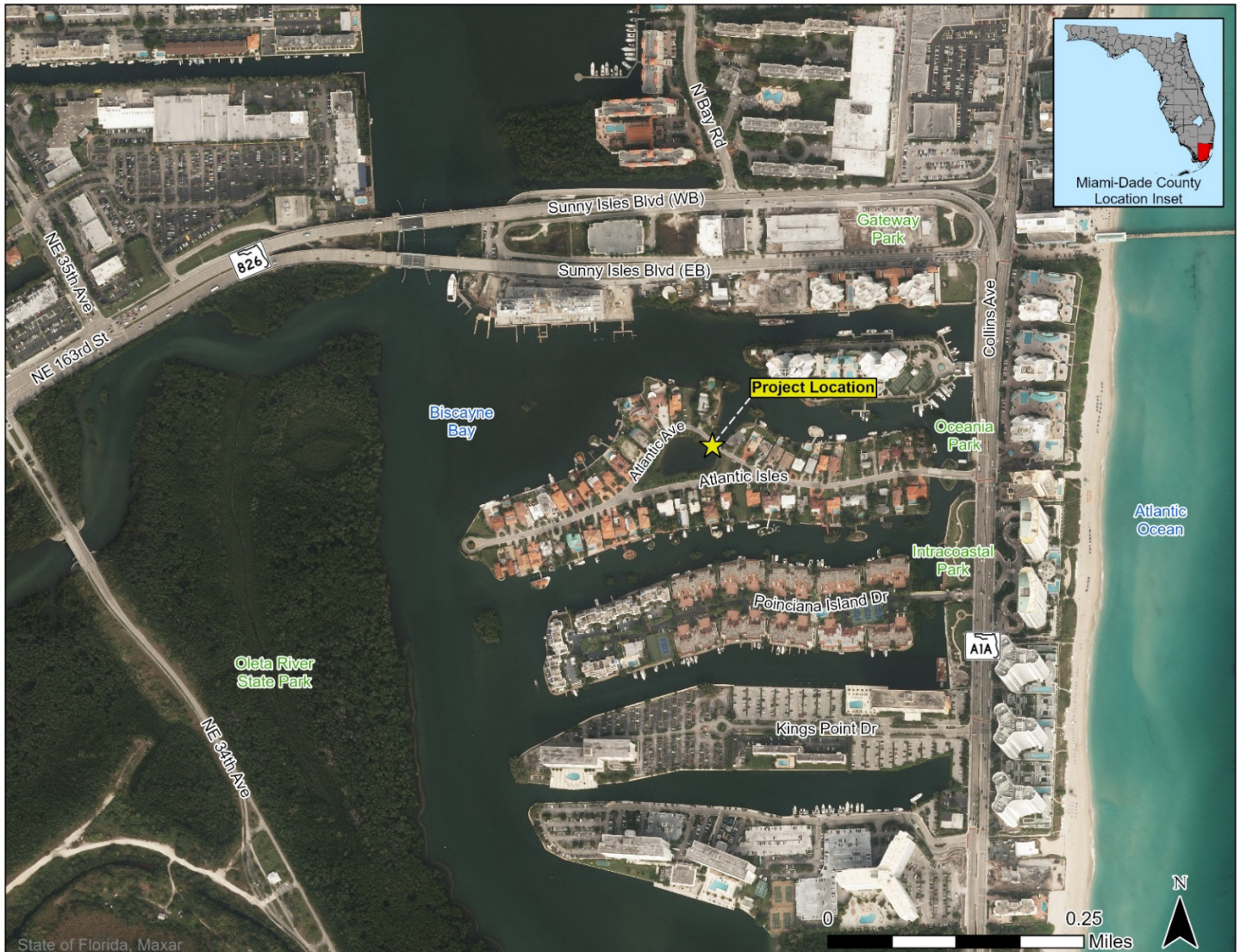


Figure 1-1. Project Location Map



Figure 1-2. Project Study Area

1.2 Purpose and Need

The purpose of the project is to address the structural and functional deficiencies of the existing bridge in order to provide a safe and functional route for the surrounding community/traveling public. According to a bridge inspection conducted on September 29, 2023, the Atlantic Isle Bridge [Bridge Identification Number 874218] has been determined to be 'Functionally Obsolete', with a Sufficiency Rating of 40.9 and a Health Index of 60.39. The Sufficiency Rating and Health Index values vary from 0 [worst] to 100 [best]. Existing functional deficiencies observed during the bridge inspection include substandard traffic barriers, multi-directional cracks in the asphalt overlay, and missing oolitic limestone (coral rock) on some areas of the north face of the arch. The southwest corner along the underside edge and the south side of the arch have spalls and delamination with exposed steel and areas of corrosion stains throughout the length of the arch along the fallen coral rock. In addition, the arch underside has a core hole at the center of the mid-span and exhibits delamination at random locations.

The bridge also has weight restrictions and limitations with an existing Bridge Load Posting Sign for single unit (SU) and Class 1 Trucks at 12 Tons and 21 Tons, respectively. The load posting on the bridge poses a significant issue for the residents of Atlantic Isle since garbage trucks, as well as trucks transporting concrete, building materials and demolition debris, and other urban goods, may not be within an adequate weight range to cross the bridge. As trucks are restricted to smaller loads when crossing the bridge and are forced to make several circuitous trips to transport freight, unnecessary truck traffic is being added to the surrounding roadway network. In some cases, fire trucks, emergency vehicles, delivery or moving vans, and construction vehicles also exceed the posted bridge load limit. Overweight vehicles accessing neighboring properties must complete a crossover requiring special procedures such as the use of flagmen in order to proceed. Given these conditions, the bridge does not meet the current transportation needs of the community.

1.3 Planning Consistency

Local Funding Agreement is currently under development. Final execution is anticipated in December 2023. See the Planning Consistency Appendix for more details.

Currently Adopted LRTP-CFP	COMMENTS			
Yes	The 2024-2028 TIP for the 430029-2 Atlantic Isle Bridge project includes a reference to page 06-10 of the Miami-Dade 2045 LRTP, which documents "Available Revenue for New Capital and New Operation & Maintenance (O&M)". Therefore, the Atlantic Isle Bridge project is included in the currently adopted 2045 LRTP under O&M costs.			
	Currently Approved	\$	FY	COMMENTS
PE (Final Design)				
TIP	Y	988,000	23-24	
STIP	Y	987,691	2024	
R/W				
TIP	Y	205,000	24-25	
STIP	Y	205,555	2025	
Construction				
TIP	Y	2,378,000	27-28	
STIP	Y	2,378,263	2027	

2. Environmental Analysis Summary

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

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 project area is located in a residential neighborhood consisting of low-density residential land use. Demographic information for the study area was obtained from the United States Census Bureau, 2017-2021 American Community Survey (ACS) using a 500-foot buffer. It should be noted that the proposed project area consists of only low-density residential land uses on an island of 0.028 square miles. The SCE Study Area incorporates the area of the island with a 500 ft buffer.

Demographics

The SCE study area contains a lower minority population (47.24%) compared to Miami-Dade as a whole (86.74%). The study area has a higher White population (81.36%) and a lower Black or African American population (1.51%), and a lower Hispanic or Latino population (43.90%) compared to Miami-Dade County. Approximately 4.40% of the population in the project area speaks English not well or not at all compared to Miami-Dade County (20.53%). The median age for the project area is 61, while the median age for Miami-Dade County is 40. Approximately 19.94% of the population in the project area does not have a vehicle compared to 9% in Miami-Dade County. (**Table 3-1**)

Description	SCE Study Area	Miami-Dade County
Total Population	1,524	2,690,113
White	81.36%	56.50%
Black or African American	1.51%	16.28%
Asian	1.51%	1.55%
Other*	15.55%	25.67%
Hispanic or Latino (Ethnicity)	43.90%	68.51%
Minority (Race and Ethnicity)**	47.24%	86.74%
Under the Age of 18	18.77%	20.48%
Age 65 or Older	28.61%	16.18%
Median Age	61	40.4
*Population includes persons identified as American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, Some Other Race, Two or More Races. ** Combines Race and Ethnicity to identify the total population that is a member of either a racial or ethnic minority.		

Table 3-1: Demographic Comparison, Total Population

Table 3-2 highlights a concentration of poverty within the SCE study area where 6.10% of the population lives below the poverty line, which is less than both Miami Dade (15.68%). The median household income in the project area is slightly lower (\$51,600) compared to Miami-Dade County (\$57,815).

Description	SCE Study Area	Miami-Dade County
Median Household Income	\$51,600	\$57,815
Population with Income Below the Poverty Line	6.10%	15.68%

Table 3-2: Demographic Comparison, Income

Table 3-3 shows higher education attainment in the SCE study area (98.55%) compared to Miami-Dade County with 82.49% of those having completed high school or received a GED.

Description	SCE Study Area	Miami-Dade County
Population 25 Years or Older with Less Than a High School Diploma or Equivalent	0.00%	8.67%
Population 25 Years or Older with a High School Diploma or Higher	98.55%	82.49%
Population with a Bachelor's, Master's, Doctorate, or Professional Degree	70.79%	31.75%

Table 3-3: Demographic Comparison, Education

Table 3-4 shows that the study area has a much smaller population that is considered Limited English Proficient (4.40% LEP) when compared to the county (20.53%).

Description	SCE Study Area	Miami-Dade County
Population that Speaks Only English	163	341,625
Population Five Years and Older that Speaks English Well	362	320,339
Population Five Years and Older that Is Considered to be Limited English Proficient	67	520,824

Table 3-4: Demographic Comparison, Language

Table 3-5 illustrates that the study area has a lower number of housing occupancy when compared to the county. The median owner-occupied home values within the study area (\$748,700) are greater than the county (\$332,800).

Description	SCE Study Area	Miami-Dade County
Total Number of Households	717	936,351
Average Household Size	2.01	2.83
Total Number of Housing Units	1,527	1,064,991
Total Number of Owner-Occupied Units	372	486,018
Median Owner-Occupied Home Value	\$748,700	\$332,800

Table 3-5: Demographic Comparison, Households and Housing Units

Community Focal Points

Community focal points are public or private facilities, organizations, or locations that hold special importance to local residents. These types of facilities include Public and Private Schools, Religious Centers, Parks & Recreational Facilities, Hospitals, Group Care Facilities, Law Enforcement Facilities, Community Centers, Government Buildings, Fire Stations, Cultural Centers, Civic Centers, Cemeteries, Social Service Facilities, Airports, Government Buildings, HealthCare Facilities, Existing Recreational Trails, Planned Trails, and Bike Lanes.

Atlantic Island is entirely residential and does not have any community focal points. Therefore, the project is not anticipated to have any involvement with community service resources. The community is organized through the Atlantic Island Civic Association, which partially owns and maintains the landscaped area surrounding Atlantic Isle Lagoon.

Community Cohesion

The scope of work includes the replacement of the existing bridge that serves residents of the island. There are currently no pedestrian or bicycle facilities on the bridge. The project is anticipated to provide enhanced multimodal facilities and address the structural and functional deficiencies of the bridge to provide a safe and functional route for the surrounding community. There are no existing transit routes within the project area, and no transit service improvements are proposed.

Anticipated ROW impacts are limited to strips of land required for widening of the roadway, as well as temporary ROW at the turnout locations during construction. No relocations are needed, and these minor ROW impacts are proposed on the south side of the roadway to avoid ROW acquisition from the residences to the north. As such, the project will not divide neighborhoods or create social/cultural isolation. The Preferred Alternative is not expected to result in any changes to community cohesion and will not cause disproportionate impacts or controversy, nor will the proposed improvements create isolated areas, disrupt social relationships and patterns, or disrupt connectivity to recreation areas. Rather, this project will increase transportation options for residents in the neighborhood with the addition of a shared-use path on the bridge. Overall, there are no adverse impacts to social issues associated with the Preferred Alternative, therefore, there are no significant impacts on social issues in the project area.

Safety and Emergency Response/Evacuation

Atlantic Isle and Atlantic Avenue are not identified as designated evacuation routes. However, they are the only existing roadways and would require use to evacuate Atlantic Island. Residents along Atlantic Avenue could exit Atlantic Island in an emergency without using Atlantic Isle Bridge by driving the opposite direction of travel along the one-way road. However, it would be difficult for large emergency vehicles to make turnaround movements on Atlantic Avenue. The bridge provides evacuation function based on the existing roadway network. The bridge has load limitations. The load posting on the bridge poses an issue for the residents along Atlantic Avenue because garbage trucks, as well as trucks transporting concrete, building materials/demolition debris, and other urban goods, may be heavier than the bridge loading allows. As such, trucks are restricted to smaller loads when crossing the bridge and are forced to make several trips to transport freight, which adds unnecessary truck traffic to the surrounding roadway network. In some cases, fire trucks, emergency vehicles, delivery or moving vans, and construction vehicles also exceed the posted bridge load limit. Overweight vehicles accessing the properties along Atlantic Avenue must complete a crossover requiring special procedures, such as the use of flagging staff to proceed. The Preferred Alternative involves replacing the entire bridge to address the structural and functional deficiencies of the existing superstructure and substructure to enhance operations and remove load restrictions. This project would have a positive impact on safety and emergency response and will increase transportation options for residents in the neighborhood.

Summary

The proposed project will include improved pavement conditions, drainage systems, signage, access management, and pedestrian and bicycle features which will enhance safety along the corridor. In addition, the project will enhance connectivity and accessibility for the surrounding community and traveling public. Based on the demographic assessment above, no minority or low-income populations will be negatively affected by the project.

Overall, there are no adverse impacts to community resources or social issues associated with the Preferred Alternative. There is minimal impact to residents or any social resources as a result of the anticipated ROW acquisition, which is limited to strips of land required for widening of the roadway, as well as temporary ROW at the turnout locations during

construction. No negative impacts to safety and emergency response, community goals, or quality of life are anticipated, and no disproportionate impacts or controversy are expected as a result of the Preferred Alternative.

3.2 Economic

The project has no potential to attract new development or create employment opportunities. However, the project could have economic benefits by addressing the current weight restrictions/limitations by providing a new structure that can meet the transportation needs of the neighborhood and the City of Sunny Isles Beach. Currently, trucks are forced to make several circuitous trips to transport freight, thereby increasing truck operational costs and unnecessary traffic to the local roadway network. The Preferred Alternative would provide a more direct route for freight transport.

Additionally, the Preferred Alternative is anticipated to enhance access for residents and visitors in the neighborhood. The improved traffic flow and enhanced bicycle and pedestrian access will improve long-term access to the immediate and surrounding project area. Therefore, the Preferred Alternative is expected to have no significant impacts on the economics of the project area.

3.3 Land Use Changes

The project area is located within the City of Sunny Isles Beach in Miami-Dade County in an area comprised of low-density residential land use. See attached Land Use Map for more details. According to the 2030 City of Sunny Isles Beach Comprehensive Plan, the area surrounding the project will continue to support this land use. The Preferred Alternative would provide a benefit to the land use by improving multimodal traffic flow within the immediate project area while retaining the character of the area.

Table 3-6 reports total area by zoning description found within the study area. The predominant land use present is residential (35.47%), followed by Vacant Residential (27.3%), and Public/Semi-Public (5.29%).

Description	Acres	Percent
Parcels With No Values	0.26	0.25%
Public/Semi-Public	5.42	5.29%
Recreation	4.09	3.99%
Residential	36.38	35.47%
Retail/Office	3.01	2.94%
Vacant Nonresidential	0.71	0.69%
Vacant Residential	27.99	27.3%

Table 3-6: SCE Study Area Generalized Land Use

There is no potential for secondary development or change in land use patterns as a result of the Preferred Alternative. Therefore, the project will have no significant impact on land use within the project area.

3.4 Mobility

The proposed bridge improvements would accommodate one travel lane, one shared use path, shoulders and concrete traffic railings. A raised sidewalk would separate the pedestrians from the vehicular traffic and would provide a safe and

comfortable experience for pedestrians and bicyclists. The improvements would enhance multimodal access within the project area. Additionally, while Atlantic Isles and Atlantic Avenue are not designated evacuation routes, the bridge provides evacuation function based on the existing local roadway network. The project would meet the transportation needs of the community by allowing trucks of various weights and sizes to utilize the new bridge, where currently the use is restricted due to weight limitations.

Access will be maintained with minimal disruption during construction and the project construction contractors will be required to maintain access for emergency services to all adjacent properties throughout construction, per the FDOT's Standard Specifications for Road and Bridge Construction. The Preferred Alternative is expected to enhance mobility within the project area.

3.5 Aesthetic Effects

The Atlantic Isle subdivision where the Atlantic Isle Bridge and corridor are located is a residential (low density land use) neighborhood with minimal pedestrian accommodations. The front yards and driveways of the residences connect to the residential roadways at the curb and gutter.

Features within the project area include the historic bridge itself, Atlantic Isle Bridge (Bridge No. 874218), and the two historic designed landscaped areas surrounding the lagoon, Lake of the Isles/Atlantic Isle Lagoon (8DA15824) Atlantic Island Park (8DA15825). The two historic designed landscapes were constructed circa 1925 and are surviving examples of landscape features designed during the early planning and development of the Atlantic Isle subdivision. The Lake of the Isles/Atlantic Isle Lagoon (8DA15824) is a component of the larger Atlantic Island Park (8DA15825), along with the adjacent Atlantic Island Bridge (8DA6433). Both historic designed landscapes and the bridge are eligible for listing in the National Register of Historic Places (NRHP). See **Section 4.1** for more information on these historic resources.

Surrounding the Atlantic Isle Lagoon are royal palm trees spread approximately 10 to 20 feet from each other, with a clearance of 7 to 20 feet from the roadway curb and gutter. The proposed improvements have the potential to alter the views/vistas from the bridge and surrounding areas. The proposed improvements could change the integrity and aesthetic quality of the historic bridge. The Atlantic Isle Bridge planter easement includes closely spaced ceramic pots containing clusia plants that create a hedge between the curb and the barrier wall of the bridge.

The existing bridge typical section consists of one 10-foot-wide traffic lane and 8-inch-wide raised curbs on both sides. The overall width of the bridge is 20 feet, which accommodates the one-way travel lane centered over the bridge with type "D" curbs and a 2.5-foot-wide planter easement with a bed of river rock stone between the curb and the concrete arch walls on each side. The bridge spans approximately 60 feet over the waterway. The concrete arch walls rise above the roadway to provide parapets, which also serve as traffic barriers.

The Preferred Alternative involves replacing the entire bridge to address the structural and functional deficiencies of the existing superstructure and substructure to enhance operations and remove load restrictions. This would require demolition of the existing bridge and replacement of the bridge at the same location to minimize overall environmental impacts. The proposed bridge typical section would be approximately 27 feet wide to accommodate one 10-foot-wide travel lane, one 8-foot-wide shared-use path, 3-foot-wide shoulders, and concrete traffic railings on both sides. A raised sidewalk would separate pedestrians from vehicular traffic. In order to preserve the planters, the bridge would have to be widened further to accommodate the space needed for the planters. The Preferred Alternative would involve the removal of the planter easements.

New approach retaining walls would replace the existing retaining walls. A new, non-structural oolitic limestone facade would be placed along the exterior faces of the traffic railings and retaining walls to provide aesthetics similar to the existing bridge. The Preferred Alternative is expected to retain the aesthetics and historic appearance of the NRHP-eligible Atlantic Isle Bridge and therefore is expected to have no significant impacts on viewsheds or aesthetics in the project area.

3.6 Relocation Potential

The project area consists of residential land use. The Preferred Alternative will not require any ROW with the exception of 0.03 acres of temporary ROW from one privately owned parcel and one City-owned parcel. However, no residences will be displaced or relocated. The Preferred Alternative is expected to have no involvement related to relocation potential.

The proposed project, as presently conceived, will not displace any residences or businesses within the community. Should this change over the course of the project, 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

Lands within the project vicinity do not meet the definition of farmland as defined in 7 CFR § 658 and the provisions of the Farmland Protection Policy Act of 1981 do not apply because the entire project area is located in the urbanized area of City of Sunny Isles Beach with no designated farmlands adjacent to the project corridor.

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) will execute 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) and Determination of Effects Case Study Report (Case Study Report) conducted in accordance with 36 CFR 800, were performed for the project, and the resources described below were identified within the project's area of potential effect (APE).

Four significant historic resources were identified within the historic resources APE: the previously recorded National Register-eligible Atlantic Island Bridge (8DA6433) also known as the Atlantic Isle Bridge (Florida Master Site File [FMSF] No. 8DA6433), the newly recorded Lake of the Isles (8DA15824), Atlantic Island Park (8DA15825), and the Atlantic Island Resource Group (8DA19241). The Atlantic Island Resource Group (8DA19241) is a designed historic landscape comprised of the National Register-eligible Atlantic Isle Bridge (8DA6433), the man-made Lake of the Isles (8DA15824), and the surrounding triangular shaped Atlantic Island Park (8DA15825), all of which were constructed circa 1925 and are directly connected spatially and historically.

Lake of the Isles lies to the southwest of the Atlantic Isles Bridge (8DA6433) at the center of Atlantic Island Park (8DA15825). All 3 resources are within the Atlantic Island Resource Group (8DA19241). Atlantic Island Park lies in the center of Atlantic Island and is bounded by Atlantic Avenue on all sides. Lake of the Isles (8DA15824) lies in the center of the park (**Figure 4-1**).

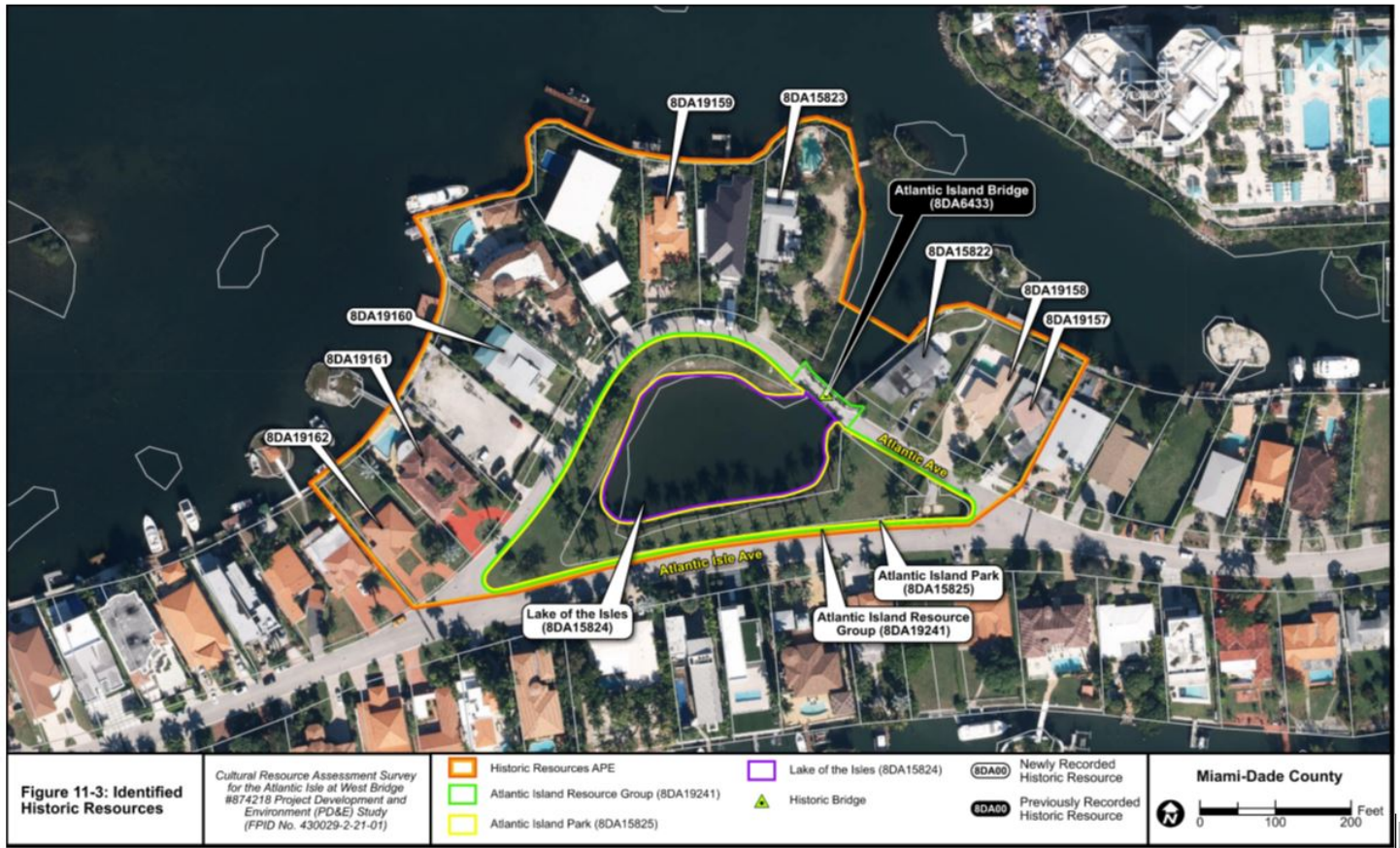


Figure 4-1: Identified Historic Resources

FDOT found that the Preferred Alternative will have an adverse effect on the Atlantic Isle Bridge (FDOT Bridge No. 874218), since it will be removed. With the removal of the bridge, the Atlantic Island Resource Group (8DA 19241) will also be adversely impacted. The Preferred Alternative will have no adverse effect on the Lake of the Isles (BOA 15824), and Atlantic Island Park (8DA 15825).

FDOT consulted with the SHPO during the preparation of the CRAS and Case Study Report and the SHPO concurred with FDOT's findings on the effects of these resources. The SHPO concurred with the findings of the CRAS in a letter signed on February 4, 2022. The SHPO concurred with the findings of the Case Study Report in a letter signed on May 12, 2023. The CRAS and Case Study are included in the project file, and the concurrence letters are attached.

A CRAS was completed in January 2022 to locate and evaluate potential archaeological and historic resources within the APE and to assess eligibility for inclusion in the NRHP according to criteria set forth in 36 CFR Section 60.4.

The CRAS resulted in the identification of 12 historic resources within the APE, one which was previously recorded. The previously recorded resource [Atlantic Island Bridge (8DA6433)] was documented in 2016 and determined eligible for listing the National Register by the SHPO under Criteria A and C in the areas of Community Planning and Development and Architecture for its association with the development of the Atlantic Island subdivision and Sunny Isles Beach, as well as its unique design. No changes to the bridge were observed since it was recorded. The 11 newly recorded resources include eight historic buildings, two historic designed landscape features, and one historic designated landscape. The Atlantic Island Resource Group (8DA19241), a designed landscape, is considered eligible for the NRHP. The two

landscape features, the Lake of the Isles (8DA15824) and Atlantic Island Park (8DA15825) are considered a contributing part of the resource group, along with the previously recorded NRHP-eligible Atlantic Island Bridge (8DA6433). Based on analysis, the remaining eight newly recorded historic resources are considered ineligible for the NRHP. No previously recorded archaeological sites were located within the APE, nor within a one-mile buffer encompassing the APE. Subsurface testing within the corridor was not feasible or necessary due to the artificial nature of the island and the ubiquity of paved roadway, buried utilities, and hardscaping. The area exhibits low potential for containing intact archaeological sites.

A Case Study Report was prepared in March 2023 to evaluate the potential effects that the proposed project activities may have on the NRHP eligible properties. It was determined that the Preferred Alternative would have an adverse effect on the Atlantic Island Bridge (8DA6433) since it is proposed to be removed. Therefore, there would be an adverse effect on the Atlantic Island Resource Group (8DA15825). There would be no adverse effect on the Lake of the Isles (8DA15824) and Atlantic Island Park (8DA15825).

Since the Preferred Alternative will require the demolition of the NRHP eligible Atlantic Island Bridge (8DA6433) and the proposed project will have an adverse effect to historic properties, further consultation with the SHPO and project stakeholders to minimize and mitigate the adverse effect has occurred. The Preferred Alternative incorporates a new low-profile bridge with a structural arch and non-structural oolitic limestone along the exterior faces to acknowledge the form and aesthetics of the existing bridge. Affected parties' consultation during the Section 106 process among FDOT, the SHPO, interested parties and the public took place at meetings with the project stakeholders in June 2022, October 2022 and July 2023. An Advisory Council on Historic Preservation (ACHP) e106 submission was made in June 2023 notifying the ACHP of the adverse effect to the historic bridge inviting them to participate in the Section 106 consultation. However, based on the e106, the ACHP did not participate.

A Memorandum of Agreement (MOA) (*pending*) between FDOT and the SHPO documents the mitigation measures for the impacts to these resources. Impacts to these resources will be mitigated through documentation of the resources in accordance with the standards and guidelines of the Historic American Landscape Survey (HALS) and Historic American Engineering Record (HAER), as well as use of a State Historic Marker. Further, the MOA stipulates that FDOT will take into consideration the historic materials, visual profile, and design elements of the historic Atlantic Island Bridge when designing the replacement bridge and allow the City of Sunny Isles and the SHPO opportunity to comment on the 60% and 90% design plans. All comments received will be considered during development of the replacement bridge design.

The Preferred Alternative would result in direct use of the Atlantic Island Bridge (8DA6433), as the bridge would be demolished and replaced with a new bridge. Because the bridge is a contributing resource to the Atlantic Island Resource Group (8DA19241), this alternative also results in direct use of this resource group. Temporary use of the Atlantic Island Park (8DA15825) for TTC would also be required during construction. As documented in the *Section 106 Determination of Effects Case Study Report*, the minimal use to the Lake of the Isles (8DA15824) and Atlantic Island Park (8DA15825) would not preclude them from being eligible for the NRHP. The properties would continue to maintain their significance and character defining features following the construction of the project. The Individual Section 4(f) Evaluation (*pending*) further documents the least overall harm analysis and the use of Section 4(f) resources.

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.

An Individual 4(f) document is currently under review. This section will be updated (including applicable commitments and attachments) once all documentation has been approved.

Historic Resources

The CRAS identified four (4) significant historic properties within the project area of potential effect (APE): the Atlantic Island (also known as Isle) Bridge (8DA6433), the Atlantic Island Resource Group (8DA19241), with two contributing resources, the Lake of the Isles (8DA15824) and Atlantic Island Park (8DA15825). In a letter dated February 2, 2022, the State Historic Preservation Officer (SHPO) concurred with the determinations of the 2022 CRAS. It was determined that the Preferred Alternative would have an adverse effect on the Atlantic Island Bridge (8DA6433) since it is proposed to be removed. Therefore, there would be an adverse effect on the Atlantic Island Resource Group (8DA15825). There would be no adverse effect on the Lake of the Isles (8DA15824) and Atlantic Island Park (8DA15825). Please refer to the previous Section 4.1 Section 106 of the National Historic Preservation Act for more information regarding the Section 106 analysis, documentation, and SHPO coordination.

Recreational Resources

Atlantic Island Park (8DA15825) is a designed historic landscape feature located in the center of Atlantic Island in Section 14 of Township 52 South, Range 42 East on the North Miami (1988) USGS quadrangle map, in the City of Sunny Isles Beach, Miami-Dade County, Florida. The outer portion of the park that abuts Atlantic Avenue is owned by the City of Sunny Isles Beach, while the inner portion of the park is owned by the Atlantic Island Civic Association. The triangular-shaped park was constructed circa 1925 and features an open grassy area with a palm tree court lining the Lake of the Isles (8DA15824). Because the park is NRHP-eligible, it is protected by Section 4(f) as a historic site. However, the park is also partially publicly owned by the City of Sunny Isles Beach and is used for recreation. Because the park is recreational and significant to the community of Atlantic Island, it is also protected by Section 4(f) as a publicly owned park/recreation area.

Multiple meetings were held with the City for input on the concepts as well as the effects to the Section 4(f) resources. Because the City maintains the roadway, bridge, and portions of the park, their preference is the Replacement Alternative (Preferred Alternative) as this would greatly reduce their maintenance costs. The City engaged their Historic Preservation Board (HPB), who generally agreed the bridge should be replaced but requested that the new bridge mimic the old bridge as much as possible to maintain the look and character of the community.

Summary of Least Overall Harm Analysis

Based on the least overall harm analysis, the feasible and prudent alternative that provides the least overall harm is the Preferred Alternative. All alternatives evaluated would result in use of the Atlantic Island Resource Group (8DA19241). While the Preferred Alternative requires direct use of the entire Atlantic Island Bridge (8DA6433), it requires minimal use of the Lake of the Isles (8DA15824) and Atlantic Island Park (8DA15825). Temporary impacts to the Atlantic Island Park (8DA15825) could be mitigated through restoration of the grassy areas and avoiding and minimizing impacts to the existing palm trees. Impacts to the Atlantic Island Bridge (8DA6433) and the associated impacts to the Atlantic Island Resource Group (8DA19241) could be mitigated through documentation of the resources in accordance with the standards and guidelines of the HALS and HAER, as well as a use of a Marker. The Preferred Alternative is also favored by the Official with Jurisdiction (OWJ).

The Preferred Alternative meets the project's purpose and need by correcting the situation that causes the bridge to be structurally and functionally deficient and provides a safe and functional route for the surrounding community/traveling public. It also removes the load restrictions, making it more convenient for service and emergency vehicles to reach the

residential properties. Impacts to non-Section 4(f) resources would be minimal. Further, the Preferred Alternative has the second highest costs but is anticipated to have the lowest long-term maintenance costs of the alternatives evaluated.

Determination of Applicability is under development for the Biscayne Bay Aquatic Preserve (BBAP) and is included in the draft Individual 4(f) document.

The BBAP is comprised of 67,000 submerged acres between Oleta River in Miami-Dade County and Card Sound Road Bridge in Monroe County. BBAP is managed by the Office of Coastal and Aquatic Management Areas (CAMA) under the Florida Department of Environmental Protection (FDEP). CAMA manages sites in Florida for the conservation and protection of natural and historic resources and resource-based public use that is compatible with the conservation and protection of lands. There are a variety of marine communities within the bay, including expansive hardbottoms with corals, sponges, and algae, mangrove-lined shores, and seagrass beds. BBAP provides habitat for a wide variety of juvenile and adult marine species, as well as wading birds. In addition, BBAP offers water oriented recreational opportunities to the metropolitan areas of Southeast Florida and the Keys. The mission of BBAP is to protect the natural resources for the benefit of future generations and at the same time allow for traditional uses.

The BBAP Management Plan (February 2013) was developed to protect the long-term health of the ecosystems and their resources, and four management programs were created: managing natural and cultural resources; ecosystem science including monitoring and sampling in the bay; education and outreach programs; and promote and manage public use that supports the protection of the resources of the preserve. As documented in the BBAP Management Plan, the primary function of the BBAP is not for recreational purposes or functions of the property are not for park or recreational use, nor for refuge purposes and it does not represent a significant historic site. Therefore, this property does not qualify as a designated recreational facility and is not applicable as a Section 4(f) resource.

An Individual Section 4(f) Evaluation document for potential impacts to historic and recreational resources was submitted to OEM on (*pending*). Please see the Section 4(f) Resources Attachment for additional information regarding the Section 4(f) analysis.

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.

There are no state-owned conservation lands in the project area subject to review and approval by the Acquisition and Restoration Council.

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.

Protected Species and Habitat

A benthic survey was conducted on July 8, 2020, to characterize the benthic habitats and presence of federal and state listed species in the marine environment. Wetland habitat assessments such as mangrove areas were also documented at the time of this survey. A terrestrial survey was conducted on March 12, 2021, to characterize the presence of potential habitat for the Florida bonneted bat (*Eumops floridanus*). The project study area was also evaluated for the occurrence of federally designated Critical Habitat as defined by Congress in 50 C.F.R. 17. Based on these evaluations, it was determined that Critical Habitat for the West Indian manatee (*Trichechus manatus latirostris*) is present within the limits of the Preferred Alternative. The project is within the USFWS designated consultation areas for the Florida bonneted bat, piping plover (*Charadrius melodus*), the West Indian manatee (*Trichechus manatus*) and Atlantic Coast Plants. The project is also within the CFA for two (2) known wood stork (*Mycteria americana*) colonies. In addition, the project falls within the South Florida range for the eastern indigo snake (*Drymarchon corais couperi*). No federally/state listed species were encountered during the surveys.

Species Occurrence and Effect Determinations

A total of 32 species (five plants, nine birds, two mammals, seven reptiles, two fish, and seven corals) that are federally and/or state listed as threatened or endangered (T&E) were determined to occur or potentially occur within the project area. The following effect determinations were made: "May Affect, Not Likely to Adversely Affect" for the West Indian manatee, wood stork, eastern indigo snake, Florida bonneted bat, smalltooth sawfish, giant manta ray, American crocodile, Kemp's ridley sea turtle, leatherback sea turtle, hawksbill sea turtle, loggerhead sea turtle, and green sea turtle; an effect determination of "No Effect", "No effect anticipated", or "No adverse effect anticipated" for the remainder of the species found within the project study area. **Table 5-1** provides a summary of the study area's potential listed species and their effect determinations.

Species Name	Listing Status	Occurrence Potential
Plants		
Florida prairie-clover (<i>Dalea carthagenensis</i> var. <i>floridana</i>)	FE	Low
Carter's flax (<i>Linum carteri</i>)	FE	Low
Tiny polygala (<i>Polygala smallii</i>)	FE	Low
Skyblue clustervine (<i>Jacquemontia pentantha</i>)	SE	Low
Longlip Ladies-tresses (<i>Spiranthes longilabris</i>)	ST	Low
Birds		
Wood stork (<i>Mycteria americana</i>)	FT	Low
Piping plover (<i>Charadrius melodus</i>)	FT	Low
Tricolored heron (<i>Egretta tricolor</i>)	ST	Moderate
Little blue heron (<i>Egretta caerulea</i>)	ST	Moderate

Roseate spoonbill (<i>Platalea ajaja</i>)	ST	Moderate
Reddish egret (<i>Egretta rufescens</i>)	ST	Moderate
Black skimmer (<i>Rynchops niger</i>)	ST	Low
Least tern (<i>Sterna antillarum</i>)	ST	Low
Burrowing Owl (<i>Athene cunicularia</i>)	ST	Low
Mammals		
West Indian manatee (<i>Trichechus manatus</i>)	FT	Moderate
Florida bonneted bat (<i>Eumops floridanus</i>)	FE	Low
Reptiles		
American crocodile (<i>Crocodylus acutus</i>)	FT	Low
Eastern indigo snake (<i>Drymarchon corais couperi</i>)	FT	Low
Kemp's ridley sea turtle (<i>Lepidochelys kempii</i>)	FE	Low
Leatherback sea turtle (<i>Dermochelys coriacea</i>)	FE	Low
Hawksbill sea turtle (<i>Eretmochelys imbricata</i>)	FE	Low
Loggerhead sea turtle (<i>Caretta caretta</i>)	FT	Moderate
Green sea turtle (<i>Chelonia mydas</i>)	FT	Moderate
Fish		
Smalltooth sawfish (<i>Pristis pectinata</i>)	FE	Moderate
Giant Manta Ray (<i>Manta birostris</i>)	FT	Moderate
Corals		
Staghorn coral (<i>Acropora cervicornis</i>)	FT	Low
Elkhorn coral (<i>Acropora palmata</i>)	FT	Low
Pillar coral (<i>Dendrogyra cylindrus</i>)	FT	Low
Rough cactus coral (<i>Mycetophyllia ferox</i>)	FT	Low
Lobed star coral (<i>Orbicella annularis</i>)	FT	Low
Mountainous star coral (<i>Orbicella faveolata</i>)	FT	Low
Boulder star coral (<i>Orbicella franksi</i>)	FT	Low

Table 5-1: Summary of Effect Determinations

Federally Listed Species and Effect Determinations

Plants

Florida prairie-clover (*Dalea carthagenensis*) - Federally Endangered (USFWS Jurisdiction)

This plant grows in pine rocklands, edges of rockland hammocks, coastal uplands, and marl prairie. No pine rockland, coastal upland, or marl prairie habitat exists within or adjacent to the project area. Therefore, a determination of "No Effect" has been made for the Florida prairie-clover.

Carter's flax (*Linum carteri*) - Federally Endangered (USFWS Jurisdiction)

Carter's flax grows in pine rocklands, pine flatwoods, and adjacent to disturbed uplands. There is a low probability of occurrence for this species as the project includes disturbed uplands. However, the landscaped project area is regularly mowed and maintained, and no individuals were observed during the field surveys. Therefore, a determination of "No Effect" was made for the Carter's flax.

Tiny polygala (*Polygala smallii*) - Federally Endangered (USFWS Jurisdiction)

This plant is endemic to the southeast Florida Atlantic Coast Ridge in pine rocklands, scrub habitat, sandhills, and open coastal spoil piles. The plant is only known in eight sites of Miami-Dade County, none of which occur in conjunction or adjacent to the project area. Therefore, a determination of "No Effect" has been made for the tiny polygala.

Birds

Wood stork (*Mycteria americana*) - Federally Threatened (USFWS Jurisdiction)

The wood stork is a large wading bird that utilizes wetlands within south Florida. This species is highly colonial and will nest in large rookeries. USFWS recognize the 18.6-mile radius around all known wood stork colonies as designated CFA. Wood storks will forage for small fish within suitable foraging habitat which includes shallow water areas of freshwater marshes, swamps, lagoons, ponds, tidal creeks and flooded pastures and ditches that are relatively calm and have water depths (seasonal or permanent) between 2 to 15 inches. Nests for this species are typically located within large cypress trees.

This project occurs within the USFWS CFA for one known wood stork colony. The closest colony is located approximately 17.6 miles northwest of the project area. The project area contains a littoral zone of 2-15 inches within the estuarine marsh that is the Atlantic Isle Lagoon. This foraging habitat for the species will remain post construction but will be temporarily impacted at an area of less than 0.5 acre. Based on the scope of work and area of suitable habitat within the project area, an effect determination of "May Affect, Not Likely to Adversely Affect" was made for the wood stork. This determination is supported by the USFWS consultation key for the wood stork (2010) following path (A>B>NLAA) (see Attachments for Species Consultation Keys).

Piping plover (*Charadrius melodus*) - Federally Threatened (USFWS Jurisdiction)

The piping plover does not breed in Florida but is known to winter in Florida. Piping plovers will forage within intertidal zones of beaches, mudflats, sand floats and shoals, and flat, open, sandy beaches with very little grass or other vegetation along the coastline. Nesting and roosting occur within open sandy shorelines along the coast. This species will use dry sand or organic material deposited by the tide for nesting. There are no open sandy beach habitats present within or adjacent to the project area that this species could potentially utilize. Therefore, an effect determination of "No Effect" has been made for the piping plover.

Mammals

West Indian manatee (*Trichechus manatus*) - Federally Threatened (USFWS Jurisdiction)

Manatees are herbivorous marine mammals found in marine, estuarine, and freshwater environments. Manatees have large bodies with paired flippers and a round, paddle-shaped tail. They are typically grey in color and occasionally spotted with barnacles or colored by patches of green or red algae. The muzzle is heavily whiskered and coarse, single hairs are sparsely distributed throughout the body. The manatee typically inhabits coastal waters, bays, and rivers. They require warm water refugia during cold weather and can frequently be observed in large groups gathered in the effluent of cooling facilities at such times. The manatee is wide-ranging during warmer months and restricted to springs and other warm water areas during the winter. They can be found in any coastal or estuarine waters but are most common in peninsular Florida. This project occurs within an area where manatees are frequently observed traveling to and from warm water aggregation areas and foraging areas. This species is Federally protected, and the project lies within Federally Designated Critical Habitat for this species. The area of Biscayne Bay which includes the Haulover Inlet near where the project will occur is a known corridor for manatees traveling to foraging habitat and warm water aggregation areas. The proposed construction will be phased to ensure manatees have unobstructed access between the lagoon and the bay to prevent a stranding within the lagoon. During construction, Standard Manatee Conditions for In-Water Work will be implemented. In addition, no blasting or explosives will be used during demolition or removal of the existing bridge.

Permanent seagrass impacts to 0.005 acres will occur due to this project. There are no known primary manatee feeding areas or aggregation areas in the vicinity of the project. (Refer to Attachments for a copy of the benthic report). Based on this information and the United States Army Corps of Engineers (USACE) Manatee Effect Determination Key April 2013, (path followed: A>B>C>G>N>O>P), a determination of "*May Affect, Not Likely to Adversely Affect*" is anticipated for the West Indian manatee (see Attachments for Species Consultation Keys).

Florida bonneted bat (*Eumops floridanus*) - Federally Endangered (USFWS Jurisdiction)

The project is within the USFWS consultation area as well as the Urban Bat Boundary for the Florida bonneted bat. The bonneted bat will forage over freshwater, freshwater wetlands (permanent or seasonal), wetland and upland forests, wetland and upland shrub and agricultural land as well as small patches of natural habitat and open areas in urban settings (i.e., golf courses or parking lots). While no freshwater wetlands exist within the project area, there is an area of freshwater ponds and freshwater forested wetlands in Oleta State Park, approximately 0.6 miles southwest of the project area. No impacts to either of these freshwater waterbodies is anticipated. Therefore, no impacts to potential foraging habitat are anticipated. Suitable roosting habitat is critical for the survival and fecundity of this species. Roosting habitat includes artificial structures (i.e., buildings and utility poles) in urban areas, natural crevices (i.e., limestone crevices) and tall mature trees with structural features for breeding and sheltering such as cavities, hollows, crevices, loose bark, tree snags, deformities, and palm fronds. Based on USFWS guidance, criteria for trees to be considered suitable roosting habitat include diameter at breast height (DBH) over eight inches, height over thirty-three feet or crevices, hollows, and cavities sixteen feet above ground level or greater. Due to proposed impacts to landscaped trees along the edges of the project area, a Florida bonneted bat survey was completed on March 12, 2021. Survey methodology followed the USFWS limited roost survey protocol and consisted of visually inspecting the impacted trees for crevices, measuring height with a clinometer, and measuring DBH with a flexible transect tape. Based on the scope of work, there will be impacts to two royal palms (*Roystonea regia*) and one sabal palm (*Sabal palmetto*) that may be potential suitable roosting habitat. Although there will be tree removals, there is no freshwater present in the project area which would be used for foraging habitat. No crevices, snags or cavities were observed at a height of 16 feet or higher. Therefore, due to the low number of tree removals, the lack of freshwater within the project area, and lack of suitable roosting features such as tree cavities, FDOT has made an effect determination of "*May Affect, Not Likely to Adversely Affect*" (See Attachments for the Field Survey Reports).

Reptiles

American crocodile (*Crocodylus acutus*) - Federally Threatened (USFWS Jurisdiction)

The American crocodile is found primarily in mangrove swamps and along low-energy mangrove-lined bays, creeks, and inland swamps. There is limited foraging and basking habitat and no nesting habitat within the lagoon or project area. Although no American crocodiles were observed during field surveys, there is potential for this species to traverse the proposed project area during construction. Due to this potential, the use of turbidity barriers will be implemented to prevent impacts to water quality. Based on the scope of the work, the limited foraging and basking area is not anticipated to be affected during or after construction. Therefore, no adverse impacts to this species are anticipated as a result of this proposed project and a determination of "*May Affect, Not Likely to Adversely Affect*" is anticipated for the American crocodile.

Eastern indigo snake (*Drymarchon corais couperi*) - Federally Threatened (USFWS Jurisdiction)

The project area is within the known range of the eastern indigo snake. This species is widely distributed throughout the state and is known to utilize a variety of habitat types. Preferred habitat for this species includes upland such as pine flatwoods and tropical hardwood hammocks but is also known to utilize edges of freshwater marshes, agricultural fields, and mangrove swamps. While it is highly unlikely that this species will be encountered due to the developed nature of the project area, the eastern indigo snake is known to occur in disturbed habitats. Although most commonly associated with

gopher tortoise burrows, the eastern indigo snake will use burrows of other species and other underground refugia to seek shelter from thermal stress. Due to the landscaped areas surrounding the project area, there are potential areas of refugia, including holes, for this species to utilize. However, the nearest eastern indigo snake sighting has been more than 30 miles away (in Homestead, FL). Therefore, using the approved USFWS Programmatic Consultation Key (2017) for the eastern indigo snake (path followed: A>B>C>D) a determination of "*May Affect, Not Likely to Adversely Affect*" was made for the eastern indigo snake (see Attachments for Species Consultation Keys).

Kemp's ridley sea turtle (*Lepidochelys kempi*) - Federally Endangered (NMFS Jurisdiction - Swimming Turtles, USFWS Jurisdiction - Nesting Sea Turtles)

The Kemp's ridley sea turtle is the rarest sea turtle species and only has one major nesting beach which is found in Mexico's Gulf coast. Females can be found on Florida and south Texas beaches occasionally. It is unlikely this species would occur within the project area but has the potential to occur within the waters surrounding the project area. Furthermore, the project area lacks suitable nesting habitat such as sandy coastal shoreline. Therefore, based on the Page 4 of 10 Preview Printed on: 11/22/2023 rarity of this species, the nature of the populated area, and no known sightings of the species nearby, a determination of "*May Affect, Not Likely to Adversely Affect*" is anticipated for the Kemp's ridley sea turtle.

Leatherback sea turtle (*Demochelys coriacea*) - Federally Endangered (NMFS Jurisdiction - Swimming Turtles, USFWS Jurisdiction - Nesting Sea Turtles)

The largest sea turtle, leatherbacks, are found in Florida's coastal waters, with a small number nesting on the Atlantic coast. They eat soft-bodied animals such as jellyfish. This pelagic species is unlikely to occur within the project area as it primarily inhabits the open ocean, and the project area lacks suitable nesting habitat such as sandy coastal shoreline but has the potential to occur within the waters surrounding the project area. The species has been documented within one mile of the project location according to FNAI's Biodiversity Matrix. Therefore, based on the shallow lagoon with lack of foraging and nesting habitat, the determination of "*May Affect, Not Likely to Adversely Affect*" is anticipated for the leatherback sea turtle.

Hawksbill sea turtle (*Eretmochyles imbricata*) - Federally Endangered (NMFS Jurisdiction - Swimming Turtles, USFWS Jurisdiction - Nesting Sea Turtles)

Hawksbill sea turtles are critically endangered and are rare in Florida. Hawksbills inhabit reefs in the Florida Keys and along the southeastern Atlantic coast. It is unlikely this species would be present in the bay as potential foraging habitat, such as coral reefs, are not present within the bay. Furthermore, the project area lacks suitable nesting habitat such as sandy coastal shoreline. However, the species has the potential to occur within the waters surrounding the project area and has been documented within 0.5 of a mile to the project area. Therefore, based on the lack of foraging habitat (coral reefs) and lack of nesting habitat, the determination of "*May Affect, Not Likely to Adversely Affect*" is anticipated for the hawksbill sea turtle.

Loggerhead sea turtle (*Caretta caretta*) - Federally Threatened (NMFS Jurisdiction - Swimming Turtles, USFWS Jurisdiction - Nesting Sea Turtles)

The loggerhead turtle is found in marine coastal and oceanic waters. They nest on coastal sand beaches often near the dune line where it is sufficiently high enough to avoid inundation. Hatchlings often use offshore floating sargassum mats, and juveniles frequent coastal bays, inlets, and lagoons. Due to the oceanic inlet south of the project area, Haulover Inlet, the area experiences thorough flushing and acts as a large corridor to allow pelagic species to enter the Intracoastal Waterway. There is no sandy coastal shoreline suitable for nesting within the project area. However, it is likely this species would be present in the bay as forage habitat is available and nesting beaches are nearby. The species is commonly documented on nesting beaches within 0.5 miles of the project area. An effect determination of "*May Affect, Not Likely to*

Adversely Affect" is anticipated for the loggerhead sea turtle.

Green sea turtle (*Chelonia mydas*) - Federally Threatened (NMFS Jurisdiction - Swimming Turtles, USFWS Jurisdiction Nesting Sea Turtles)

Atlantic populations of green turtles are typically found in estuarine, marine coastal and oceanic waters. This species nests on coastal Atlantic sand beaches between Volusia and Miami-Dade counties. Juveniles are frequently found in coastal bays, inlets, lagoons, and offshore reefs. Due to the oceanic inlet south of the project area, Haulover Inlet, the area experiences thorough flushing and acts as a large corridor to allow pelagic species to enter the Intracoastal Waterway. Large juveniles and adults feed on seagrasses and algae. There is no sandy coastal shoreline suitable for nesting within the project area. However, it is likely this species would be present in the bay as forage habitat is available and nesting beaches are nearby. The species is commonly documented on nesting beaches within 0.5 miles of the project area. An effect determination of "*May Affect, Not Likely to Adversely Affect*" is anticipated for the green sea turtle.

Protection of sea turtle species during project construction will be accomplished through the implementation of the NMFS Vessel Strike Avoid Measures and in compliance with the Protected Species Construction Conditions.

Fish

Smalltooth sawfish (*Pristis pectinata*) - Federally Threatened (NMFS Jurisdiction)

The smalltooth sawfish is listed as a federally endangered species and is listed as imperiled by the FWC. The smalltooth sawfish is one of two species of sawfish that inhabit coastal US waters. Sawfish are year-round residents of peninsular Florida, with most encounters occurring in southwest Florida from Charlotte Harbor to the Florida Keys. According to the FWC, smaller individuals from 3 to 6 feet (1 to 1.8 meters) total length typically live in estuarine systems close to shore near river mouths or tidal creeks, while larger smalltooth sawfish up to 18 feet (5.5 meters) typically inhabit deeper offshore waters. Juvenile smalltooth sawfish most often inhabit brackish water within a mile of land. They can be found in a wide range of habitats, including mud bottoms, sand bottoms, oyster bars, red mangrove shorelines, docks, seawall lined canals, and piers. The smalltooth sawfish is ovoviviparous meaning the mother carries the eggs inside her until they hatch, and the young are born alive, usually in litters of 15 to 20 pups. Juveniles can travel many miles up rivers if freshwater inflow is reduced. Large smalltooth sawfish, longer than 10 feet (3 meters), are occasionally found nearshore in the spring when most sawfish are born, and mating is thought to occur, but most are reported in deeper offshore waters with muddy bottoms. The substrate around the project area consists of seagrass bottom, grassy shoreline, and mangrove habitat (no seawalls present). Since there will not be mangrove impacts along the northeastern side of the bridge. An effect determination of "*May Affect, Not Likely to Adversely Affect*" is anticipated for the smalltooth sawfish.

Giant manta ray (*Manta birostris*) - Federally Threatened (NMFS Jurisdiction)

The giant manta ray is a large filter feeding elasmobranch with a wingspan that can reach up to 29 feet. This species is typically found in productive nearshore coastal waters and in deeper waters offshore but is also known to migrate through the Intracoastal Waterway. Due to the oceanic inlet south of the project area, Haulover Inlet, the area experiences thorough flushing and acts as a large corridor to allow pelagic species to enter the project area via the Intracoastal Waterway. Due to the in-water work associated with this project, potential impacts to this species include injury from construction materials and vessel strikes from in-water equipment. Based on the required in-water work, implementation of avoidance measures and compliance with required construction conditions, a determination of "*May Affect, Not Likely to Adversely Affect*" has been made for the giant manta ray.

Protection of smalltooth sawfish and giant manta ray during project construction will be accomplished through the implementation of the NMFS Vessel Strike Avoid Measures and in compliance with the Protected Species Construction Conditions.

Corals

Staghorn coral (*Acroporacervicornis*); Elkhorn coral (*Acroporapalmata*); Pillar coral (*Dendrogyracylindrus*); Rough cactus coral (*Mycetophylliaferox*); Lobed star coral (*Orbicellaannularis*); Mountainous star coral (*Orbicellafaveolata*); Boulder star coral (*Orbicellafranksi*) - Federally Threatened (NMFS Jurisdiction)

The project area is within the range for seven federally listed stony corals: pillar coral, lobed star coral, mountainous star coral, boulder star coral, rough cactus coral, elkhorn coral and staghorn coral. The benthic substrate is sandy and dominated by shoal and paddle grass (*Halodule wrightii* and *Halophila decipiens*, respectively). The project area lacks significant structure, outside the bridge piles, for these corals to grow. Furthermore, no corals, including any of the above listed species, were observed during any of the benthic surveys. Therefore, an effect determination of "No Effect" is anticipated for these federally listed coral species.

State Listed Species and Habitat

There are no state threatened or endangered mammal, reptile, fish, or coral species with the potential to occur within the project area.

Plants

Skyblue clustervine (*Jacquemontiapentantha*) -State Endangered (FDACS Jurisdiction)

Habitat for this species includes pine rockland, coastal rock barren, and hammocks including rockland hammock or disturbed openings in hammocks. No rockland, coastal rock barren, or hammock habitat exists along the project area. Therefore, a determination of "No effect anticipated" has been made for the skyblue clustervine.

Longlip ladies-tresses (*Spiranthes longilabris*) - State Threatened (FDACS Jurisdiction)

This plant grows in pine flatwoods, wet savannas, and saw palmetto hammocks. There are no known pine flatwoods, wet savannas, or saw palmetto hammock habitat within or adjacent to the project area. Therefore, a determination of "No effect anticipated" has been made for the longlip ladies-tresses.

Birds

Tricolored heron (*Egretta tricolor*) - State Threatened (FWC Jurisdiction)

The tricolored heron prefers coastal environments. Nesting for this species occurs mostly on mangrove islands or in freshwater willow thickets on islands or over standing water. Foraging areas consist of permanently and seasonally flooded wetlands, mangrove swamps, tidal creeks, ditches and the edges of lakes and ponds. The project area includes areas of suitable foraging, nesting, and roosting habitat for this state listed species that will be impacted by the proposed improvements. However, due to the small scale of this project (less than two acres) in relation to abundant foraging and roosting habitat in the vicinity of the project, a determination of "No adverse effect anticipated" has been made for the tricolored heron.

Little Blue Heron (*Egretta caerulea*) - State Threatened (FWC Jurisdiction)

The little blue heron forages in shallow freshwater, brackish and saltwater habitats, and nests in woody vegetation such as cypress, willow, maple, black mangrove, and cabbage palm. The project area includes areas of suitable foraging, nesting, and roosting habitat for this state listed species that will be impacted by the proposed improvements. However, due to the small scale of this project (less than two acres) in relation to abundant foraging and roosting habitat in the vicinity of the project, a determination of "No adverse effect anticipated" has been made for the little blue heron.

Roseate spoonbill (*Platalea ajaja*) - State Threatened (FWC Jurisdiction)

The roseate spoonbill forages in shallow water for crayfish, shrimp, crabs, and small fish. This species nests in mixed colonies of other wading bird species in mangroves or trees along coastlines and are sometimes found nesting inland. Mangrove islands are the preferred nesting sites for the roseate spoonbill. While potential foraging and nesting habitat within the project area will be impacted, the habitat does not provide preferred conditions due to the urbanization of the area. Therefore, an effect determination of "*No adverse effect anticipated*" has been made for the roseate spoonbill.

Reddish egret (*Egretta rufescens*) - State Threatened (FWC Jurisdiction)

Preferred habitat for this species is almost exclusively coastal areas with nesting occurring on coastal mangrove islands or in Brazilian pepper located on dredge spoil islands. Foraging habitat includes shallow water areas (typically less than six inches deep) of variable salinity. This species will also utilize broad, open marine tidal flats and shorelines with little vegetation. The surrounding urban areas are not coastal and do not include any suitable foraging or nesting habitats for this species. Furthermore, no individuals were observed during any field reviews. Therefore, while this species may migrate through the project area, anticipated habitat impacts are limited and a determination of "*No adverse effect anticipated*" has been made for the reddish egret.

Black skimmer (*Rynchops niger*) - State Threatened (FWC Jurisdiction)

The black skimmer is a seabird that uses their bill to skim the surface of water in flight to catch prey. These birds inhabit all of Florida's coastline. Black skimmers nest between May and September along sand beaches, sandbars, or dredge islands. Habitat loss is the largest threat to this species. Due to the lack of sandy coastline in the area and the small lagoon not providing enough flight surface for the bird to forage, a determination of "*No effect anticipated*" has been made for the black skimmer.

Least tern (*Sterna antillarum*) - State Threatened (FWC Jurisdiction)

The least tern is a colony nesting shorebird that is highly susceptible to nest disturbance. This species nests on wide sandy beaches but has been found to nest on roofs in recent years as the species suffers from habitat loss and beach disturbance. Due to the lack of sandy area for nesting in the project area and no impacts to flat areas such as roofs that could otherwise be used for nesting, a determination of "*No effect anticipated*" has been made for the least tern.

Burrowing owl (*Athene cunicularia*) - State Threatened (FWC Jurisdiction)

The burrowing owl is a small owl that nests in burrows dug in the ground. Burrowing owls inhabit open prairies with very little understory vegetation. These areas can typically include agricultural fields, vacant lots, and airports. There are no open areas adjacent to the project corridor that may be considered burrowing owl habitat. Due to the lack of suitable habitat adjacent to the project corridor an effect determination of "*No effect anticipated*" has been made for the burrowing owl.

Other Protected Species

Black bear (*Ursus americana floridanus*) - State Protected (FWC Jurisdiction)

The Florida black bear is a recovered species but is still protected by the Bear Conservation Rule. Black bears can use almost every habitat type found in Florida but prefer flatwoods, swamps, scrub oak, and hammocks. The project location is in a suburban area with limited access to the developed area of A1A Sunny Isles. Although the project location has the rare potential for the Florida black bear to occupy or traverse through the area, no suitable habitat for the bear is present within the project area and no road kills or nuisance bear reports have been documented within one mile of the project area. Therefore, no impacts to the Florida black bear are anticipated as a result of this project.

Bald eagle (*Haliaeetus leucocephalus*) - Federally Protected (USFWS Jurisdiction)

Florida has one of the densest concentrations of nesting bald eagles in the lower 48 states. The bald eagle is protected under The Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. To reduce the potential for human activity to adversely affect bald eagles, USFWS and FWC Management Guidelines suggest the protection of a 660-ft habitat buffer around each active bald eagle nest. According to Audubon's EagleWatch nest locator, the nearest bald eagle nest is more than five miles away from the project location in Ives Estates. The project is not anticipated to affect the bald eagle or its habitat. No eagles or active nests were observed during the field review and no impacts are anticipated to occur as a result of this project.

Tricolored bat (*Perimyotis subflavus*) - Proposed Federally Endangered by USFWS (FWC Jurisdiction)

The USFWS is proposing to list the tricolored bat as endangered under the ESA and is considered a 'Species of Greatest Conservation Need' in Florida. During the spring, summer, and fall, known as the non-hibernating seasons, tricolored bats are found in forested habitats where they roost in trees, primarily among leaves. Tricolored bats will roost singly or in small groups, within caves, tree foliage, tree cavities, and have been known to use bat houses, buildings, and other man-made structures. During the winter, tricolored bats hibernate in culverts, as well as sometimes in tree cavities and abandoned water wells. Tricolored bats emerge early in the evening and forage at treetop level or above but may forage closer to ground later in the evening. This species of bat exhibits slow, erratic, fluttery flight, while foraging and are known to forage most commonly over waterways and forest edges. As stated previously in the FBB description, multiple landscaped trees are found within the project study area, some of which may be impacted due to this project. The surrounding project area may contain culverts suitable for hibernation. However, during the field reviews, no signs of bats were discovered. Due to the potential suitable habitat (culverts and waterways) within the project study area, the probability of occurrence is low. No bats were observed during the field review and no impacts are anticipated to occur as a result of this project.

Though no signs of bats were seen during the field reviews, it is worth mentioning, that all bats are protected in the state of Florida under Florida Administrative Code rule 68A-4.001 General Prohibitions; and rule 68A-9.010 Taking Nuisance Wildlife. If any species of bat is encountered in the future prior to the removal and construction of bridge no. 874218, bat exclusion will be completed to comply with Florida Administrative Code rule 68A-4.001 General Prohibitions; and rule 68A 9.010 Taking Nuisance Wildlife. Per the regulations, exclusion is not permitted during bat maternity season April 15 through August 15. Exclusion devices must be left up for a minimum of four nights and the low temperature must be forecasted to remain above 50 degrees Fahrenheit during that time period.

Osprey (*Pandion haliaetus*) - Imperiled Species Management Plan (FWC Jurisdiction)

The osprey is protected by the U.S. Migratory Bird Treaty Act. Although it is no longer listed as a Species of Special Concern, it is still included in the Imperiled Species Management Plan. The osprey is a species of raptor that is sometimes mistaken for the bald eagle. Osprey habitat includes the coast, lakes, rivers, and swamps in Florida. In Florida, non-migratory, resident osprey have been well-documented and extensively studied only in Florida Bay, the southern Everglades, and the Florida Keys. The osprey's diet primarily consists of fish. Feeding areas include most open-water habitats along the coast and freshwater lakes and rivers. Nests are found in large trees, utility poles, channel markers, and in urbanized areas where ospreys readily utilize manmade nesting platforms. The project area includes osprey habitat as the lagoon and surrounding waters have the potential to be fishing grounds for the bird. The project area is also within a possible non-migratory distribution, meaning if ospreys are present, they may stay within the area all year round. No ospreys or active nests were observed during the field review and no impacts are anticipated to occur as a result of this project. If active nests are to be impacted by the project, a permit must be obtained before removal or relocation.

Monarch butterfly (*Danaus plexippus*)

The Monarch butterfly is currently included in the 2022-2027 USFWS National Listing Workplan for FY24 as a candidate species for the ESA. Inclusion within the Workplan does not automatically list a species as endangered or threatened

under the ESA. The species is not currently protected by federal law under this act; however, federal agencies may voluntarily add conservation actions to their projects. The South Florida region potentially serves as a "stopping point" on the species' seasonal migration to Mexico and as a year-round habitat for the Monarchs. Urban and suburban development is eliminating monarch habitat by supplanting agricultural landscapes where an estimated 90% of milkweeds, the Monarch's host plant, occur. Monarchs have the potential to occur wherever their host plant is found; this includes roadside, fields, and urbanized and suburbanized areas. The project area has the potential to sustain milkweed; therefore, the monarch butterfly may potentially occur within the project area.

Commitments Related to Protected Species

FDOT will adhere to the following commitments during the construction phase to minimize and avoid impacts to protected species and their habitat:

- The USFWS and FWC Standard Manatee Conditions for In-Water Work will be utilized during construction.
- The NMFS Protected Species Construction Conditions, NOAA Fisheries Southeast Regional Office will be utilized during construction.
- The NMFS Vessel Strike Avoidance Measures, NOAA Fisheries Southeast Regional Office will be utilized during construction.
- The most recent version of the USFWS Standard Protection Measures for the Eastern Indigo Snake will be utilized during construction.
- If required, barge spudding and staging will be limited to areas outside of seagrass habitat and/or within the areas permitted for impacts.
- No blasting or use of explosives will be used to demolish existing bridge structures. Noise and vibration work, such as pile driving, should be conducted in as few consecutive days as possible.
- Mangrove impacts will be avoided via the use of tie-back methods.
- Oysters from the pilings will be removed and relocated to an undisturbed area near the project area prior to construction.
- A survey will be conducted for the Florida bonneted bat within the limits of construction activities. If any signs of the Florida bonneted bat are observed (e.g., tree cavities, new potential man-made roosting habitat), the FDOT is committed to coordinating with USFWS regarding the most updated relocation protocols for the Florida bonneted bat.
- 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.
- 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.

Critical Habitats

Critical habitat for the West Indian manatee exists within the project area. The manatee critical habitat is defined by specific waterways that were known to be important concentration areas for manatees at the time of designation. Biscayne Bay, and therefore the canal leading into the lagoon within the project area, is listed as manatee critical habitat. The project does not include the construction of marinas or additional docks and will not result in an increase in boater traffic. Additionally, the project will not restrict access to the lagoon or movement throughout Biscayne Bay. Therefore, no destruction or adverse modification to Critical Habitat for this species is anticipated. Strategic Habitat Conservation Areas There are no other protected species, non-listed rare plants, or Strategic Habitat Conservation Areas with the potential to be found within the project area.

Please note: This CE2 is still under development. Additional information regarding USFWS and NMFS coordination will be included once complete.

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.

Wetland and Other Surface Waters

Jurisdictional wetlands and other surface waters (OSWs) within the project area were surveyed and delineated. The intent of the survey was to document any wetland and surface water features in order to minimize impacts to these water bodies and avoid to the greatest extent possible long and short-term adverse impacts to these wetlands. There is no practicable alternative to construction in wetlands, therefore, the project area was reviewed to identify, delineate, and evaluate wetlands and surface waters located within or adjacent to Atlantic Isle Bridge No. 874218 West of SR-A1A PD&E study area.

Wetland Identification, Delineation, and Classification

A benthic and shoreline characterization survey was conducted on July 8, 2020. During the benthic survey, observations and data including depth, benthic substrate, and observed natural resources were recorded on underwater datasheets and photographs were taken to document all identified resources and shoreline vegetation (refer to the NRE and Benthic Survey for more details). The Wetland and Surface Water evaluation identified an existing tidally influenced lagoon and canal within the project area. The existing tidally influenced lagoon is connected to Biscayne Bay by a small canal on the northeast point of the island. These tidal waters have the potential to contain protected marine resources such as seagrasses and corals, as well as other EFH. Several mangroves have established along the western shoreline of the canal and red mangrove (*Rhizophora mangle*) saplings were documented colonizing the shallow banks of portions of the lagoon (see **Figure 5-1**). No other natural features exist within the project area as the remainder of the island consists of private residential properties.



Figure 5-1: Benthic Survey Results and Wetland ID Map

The survey identified mangrove resources along the western and southern shorelines of the lagoon as well as along the western bank of the canal adjacent to the bridge. The mangroves in the lagoon include red mangrove saplings and buttonwood (*Conocarpus erectus*) saplings growing along the shoreline in areas inundated during high tide. Along the western bank of the canal, mature trees of both red and white mangrove (*Laguncularia racemosa*) species were identified. Sparse and discontinuous occurrences of paddle grass (*Halophila decipiens*) were documented within the middle area of the lagoon. Shoal grass (*Halodule wrightii*) was found along some of the shallower shoreline areas of the lagoon where coverage ranged from sparse to dense. Other marine resources included green macroalgae (*Halimeda*), barnacles, and fish species (See **Table 5-2**). A total of 0.70 acres of seagrass and mangrove wetlands were identified.

Wetland ID	FLUCCS	Habitat Value	Hydrologic Function	Size (Acres)
W1	911 Seagrass	Foraging and nursery habitat and refuge for invertebrates, wading birds, and marine species.	Limited water quality enhancement, sediment stabilization, wave attenuation, nutrient cycling due to size and coverage of seagrass beds.	0.10
W2	612 Mangroves	Foraging and nursery habitat and refuge for fish, invertebrates, and wading birds.	Limited shoreline stabilization, wave attenuation, nutrient cycling provided by mangrove fringe.	0.02
W3	612 Mangroves	Foraging and nursery habitat and refuge for fish, invertebrates, and wading birds.	Limited shoreline stabilization, wave attenuation, nutrient cycling provided by mangrove fringe.	0.02

W4	911 Seagrass	Foraging and nursery habitat and refuge for invertebrates, wading birds, and marine species.	Limited water quality enhancement, sediment stabilization, wave attenuation, nutrient cycling due to size and coverage of seagrass beds.	0.48
W5	612 Mangroves	Foraging and nursery habitat and refuge for fish, invertebrates, and wading birds.	Limited shoreline stabilization, wave attenuation, nutrient cycling provided by mangrove fringe.	0.03
W6	911 Seagrass	Foraging and nursery habitat and refuge for invertebrates, wading birds, and marine species.	Limited water quality enhancement, sediment stabilization, wave attenuation, nutrient cycling due to size and coverage of seagrass beds.	0.05

Table 5-2: Wetland Characteristics

*This table corresponds to Figure 5-1. Benthic Survey Results and Wetland ID Map.

Wetland Impact Assessment

Jurisdictional wetlands (estuarine and marine deepwater) identified through the Environmental Screening Tool (EST) are present within and adjacent to the project area. Based on the proposed construction, 0.005 acres of wetland impacts are anticipated to occur as a result of the bridge replacement. (see **Figure 5-2** and **Table 5-3**).

Indirect, Permanent - Existing Seagrass Bed (W4 - FLUCCS 911)

The preferred alternative (bridge replacement) will result in minimal indirect, permanent impacts to 0.005 acres of Wetland 4 (W4), an existing seagrass bed (isolated blades of *H. decipiens*). (See **Table 5-3**). The bridge will be widened by 9.6 feet on the southside of the bridge. The larger bridge footprint will create additional shading that will permanently prevent sunlight from reaching the benthic habitat and existing seagrass bed and prohibit future growth of the existing seagrass bed.



Figure 5-2: Wetland Impact Map

Other Surface Water Impact Assessment

All areas of the lagoon and the canal from the lagoon leading into Biscayne Bay are considered OSWs. In addition to the existing drainage system, seven new drainage structures are proposed. The structures are proposed to have connected pipes to convey runoff into the existing pollution control box located west of the Atlantic Isle Lagoon. The preferred alternative would create a temporary increase of 0.088 acres of impervious surface area due to temporary pavement for MOT and a permanent increase of 0.02 acres of impervious surface area due to the construction of the 8-foot-wide shared use path on the south side of the bridge. This added impervious surface can contribute to additional runoff of hydrocarbons and other roadway pollutants into the Atlantic Isle Lagoon and Biscayne Bay, an Aquatic Preserve and Outstanding Florida Water (OFW). This additional impervious surface area would be analyzed for water quality and attenuation. The proposed stormwater management system for the project will be developed to meet the design and performance criteria established in the South Florida Water Management District (SFWMD) Environmental Resource Permit Applicants Handbook Volumes I and II for the treatment and attenuation of discharges to nearby waterbodies (ETDM Report # 14413-1). Direct and indirect impacts to the potential seagrass habitat within the lagoon (OSW 1), totaling 0.01 acres, will occur from the replacement of the existing bridge.

Direct, Temporary

Water quality within and adjacent to the construction area may be temporarily impacted by construction activities such as demolition or the removal of existing structures. The pilings of the existing bridge are currently covered in oysters, which play an important role in filtering water. Although it is likely these oysters would recolonize after construction, temporary impacts to water quality would be exacerbated by the removal or disturbance of existing oysters within the project area.

Oysters from the pilings will be removed and relocated to an undisturbed area near the project area prior to construction. Additionally, sheet piles used in the construction of the bridge will create 0.002 temporary direct impacts to potential seagrass habitat (See **Table 5-3**).

Indirect, Permanent - Potential Seagrass Habitat (OSW1 - Lagoon)

Construction of a stormwater management system in accordance with current regulations will eliminate most indirect impacts, such as impacts to water quality or alteration to vegetative communities in wetlands and surface waters outside the project limits. However, the newly shaded areas from bridge widening, will cause permanent indirect effects to potential seagrass habitat. The additional shading will permanently prevent existing seagrass beds from expanding, or for new seagrass beds to establish within, this potential habitat as sunlight from the water column is necessary for seagrass growth. Therefore, 0.008 acres of indirect permanent impacts will occur to the potential seagrass habitat directly shaded by the bridge widening. (See **Table 5-3**).

	Permanent	Temporary	Total Permanent and Temporary Impacts
Indirect Impacts (W4 - Existing Seagrass Bed)	0.005 acres	-	0.015 acres
Direct Impacts (OSW1 - Potential Seagrass Habitat)	-	0.002 acres	
Indirect Impacts (OSW1 - Potential Seagrass Habitat)	0.008 acres	-	
Total	0.013 acres	0.002 acres	

Table 5-3 Summary of Wetland and Other Surface Water Impacts

Cumulative Impacts

Cumulative wetland impacts include the combined direct and indirect wetland impacts of the proposed action and other reasonably foreseeable actions in the general area that are not dependent on the proposed action. As minimal to moderate direct or indirect impacts to wetlands are anticipated, cumulative impacts are also anticipated.

The anticipated cumulative impacts are a seagrass reduction in suitable seagrass habitat in the area from additional shading and/or sedimentation, in addition to a permanent impact to the existing seagrass bed due to widening of the bridge footprint. Less coverage of seagrass can lead to less sediment control and cause carbon dioxide to be released in the water column. These two additional factors can reduce water quality for all organisms within the lagoon that require high oxygen content and clear waters for photosynthesis.

Avoidance and Minimization

The project limits include Atlantic Isle Bridge No. 874218 along Atlantic Avenue. The preferred alternative is expected to require in-water work within the lagoon located underneath the bridge connected to Biscayne Bay. Biscayne Bay has many protected resources and working over Biscayne Bay would pose risk to water quality and marine resources. However, to minimize potential impacts, minimization measures should follow FDOT Standard Specifications for Road and Bridge Construction (i.e., stormwater management plan, temporary turf, rolled erosion control products, sediment containment systems, runoff control structures, sediment barriers, inlet protection systems, silt fences, and turbidity barriers). Alterations to the design plan have been made to further minimize impacts such as determining that only two of the six drill shafts will be waterward of the existing bridge, and mangroves will be tied back out of the way from construction rather than trimmed or removed. Additionally, no rip-rap placement along the shorelines will be required for

this project.

Mitigation

This project will result in 0.005 acres of unavoidable impacts to an existing seagrass bed within the project area. These impacts will be mitigated pursuant to Section 373.4137, Florida Statutes (F.S.), to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and 33 U.S.C. 1344. Based on the Uniform Mitigation Assessment Method (UMAM), the unavoidable impacts will result in a functional loss of 0.002 units. Mitigation options for this project include Biscayne Bay Environmental Enhancement Trust Fund, permittee responsible mitigation or out of basin mitigation which would require a cumulative impact analysis. A conceptual mitigation plan will be developed through continued coordination with permitting agencies and recommendations from NMFS during the design/permitting phase of the project.

Wetlands Finding

In accordance with EO 11990, the proposed project will have no significant short-term or long-term adverse impacts to wetlands, there is no practicable alternative to construction in wetlands, and measures have been taken to minimize harm to wetlands.

5.3 Essential Fish Habitat (EFH)

Based on coordination with the National Marine Fisheries Service to comply with Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), FDOT commits to reinstate consultation and provide information necessary to complete consultation on the species listed in Table 5-5 prior to advancing the project to construction. The letter from National Marine Fisheries Service is intended to provide reasonable assurance, per 23 CFR § 771.133, that requirements of the MSFCMA are able to and will be met prior to construction. The status of this commitment will be updated in any subsequent project re-evaluations.

As in-water work will occur, the project has the potential to impact EFH and species within the associated Fisheries Management Plans (FMPs) which have been developed by the South Atlantic Fisheries Management Council (SAFMC). Per the PD&E Manual, an EFH assessment, which included a desktop review and an in-water benthic survey conducted on July 8, 2020, was performed for this project.

Based on the results of the desktop review, three (3) EFH types and four (4) Habitat Areas of Particular Concern (HAPCs) were identified within the project area. The EFH and HAPCs found within the project area via the desktop review are listed below in **Table 5-5** with their associated FMPs. The benthic survey performed on July 8, 2020, identified an additional three (3) EFH types and two (2) HAPCs: mangrove wetland EFH, SAV EFH, oyster EFH and HAPC, and seagrass HAPC. This survey focused on benthic and shoreline characterization of protected marine resources, including seagrasses, corals, mangroves, and other submerged aquatic vegetation (SAV) within 100-feet from the existing bridge including underneath the bridge and the adjacent lagoon.

Fisheries Management Plan	EFH Type	HAPC	Life Stages
Shrimp (Various species: white, pink, brown, rock)	Estuarine & Marine SAV	Coastal Inlets	Juvenile, Adult, Larvae (Depending on Species)
	Estuarine Scrub/Shrub (mangroves)		
	Unconsolidated Bottom		

Snapper/Grouper Complex	Estuarine & Marine SAV	Continuous and Discontinuous Seagrass; Mangroves; Oysters	Juvenile, Adult, All (Depending on species)
	Estuarine Scrub/Shrub (mangroves)		
	Unconsolidated Bottom		
	Oysters		
Spiny Lobster (<i>Panulirus argus</i>)	Estuarine & Marine SAV	Biscayne Bay	All
	Estuarine Scrub/Shrub (mangroves)		
	Algal Communities		
	Shallow Subtidal Bottom		
	Unconsolidated Bottom		
Coral (Various species)	Unconsolidated Bottom	<i>Phragmatopoma</i> (worm reefs) - Not observed	N/A

Table 5-5: EFH and HAPC within the Study Area

The Northeast canal approaching the Atlantic Isle Lagoon consisted of mature red (*Rhizophora mangle*) and white (*Laguncularia racemosa*) mangroves. No seagrasses, corals, or other protected benthic resources were found within the canal. The fish species that were observed at this location included: checkered pufferfish (*Sphoeroides testudineus*), mullet (*Mugil cephalus*), barracuda (*Sphyraena barracuda*) and juvenile snapper (*Lutjanidae spp.*). The lagoon banks were mowed and maintained with the exception of a small area along the western and southern banks that contained red and white mangrove saplings. Within the lagoon, paddle grass (*H. decipiens*) and shoal grass (*H. wrightii*) were observed. No threatened or endangered species were documented within the lagoon or canal. The lagoon is linked to Biscayne Bay, which contains EFH and HAPCs for an array of species associated with several FMPs.

Based on the EFH types within the project area, this area has the potential to provide habitat for juvenile and adult assemblages of species from the snapper-grouper complex, penaeid shrimp and spiny lobster FMPs. Based on the HAPC types, this area also has the potential to provide habitat for corals and associated shallow water reef species. Therefore, various species of the federally managed penaeid shrimp, spiny lobster, fish (snapper, grouper, grunts) and coral fisheries have the potential to occur within the study area. (see **Table 5-6**)

EFH Type	Impacted Acres
Estuarine & Marine SAV	0.005 (Permanent)
Estuarine Scrub/Shrub (mangroves)	No mangrove impacts
Oysters	To Be Determined
Algal Communities	Acreage Not Calculated
Shallow Subtidal Bottom	0.002
Unconsolidated Bottom	0.002
<i>*Please note that EFH impact acres are not mutually exclusive.</i>	

Table 5-6: Summary of EFH Impacts

Direct, Indirect, and Cumulative Impacts

The in-water work for the bridge replacement will consist of installing sheet piles for dewatering. Only after the area has been dewatered will drill shafts be installed. This will reduce the amount of in-water work needed and any turbidity issues typically associated with in-water work. There will be 88 sheet piles used for dewatering which will be driven with a

vibratory hammer. Temporary sheet pile driving will take a total of four days, with each sheet pile taking approximately 5 minutes to reach their depth and top grade. The final leveling of the temporary sheet pile driving will occur within one day for each bridge end. The construction methods call for drilled shafts to be drilled to -15 feet and drilled shaft casings to be inserted up to -41 feet North American Vertical Datum (NAVD88). The vibratory installation methodology of these shaft casings will be advantageous to other methods, as vibration is expected to be minimal due to oscillating/rotator casing installation. The total duration of the drilled shaft activities will be 18 days. Upon removal of temporary sheet piles, each sheet will be vibrated out at approximately 1 minute per sheet. Additionally, no rip-rap placement along the project shorelines will be required as a part of this project. Refer to the Preferred Alternative Concept Plans, which show the locations of proposed in-water structures.

The proposed work is anticipated to result in 0.005 acres of permanent, indirect shading impacts to Estuarine and Marine SAV EFH (seagrass) and 0.008 acres of permanent, indirect shading impacts to potential seagrass habitat (shallow subtidal/unconsolidated) due to the widening of the bridge during replacement. Installation of sheet piles during construction will cause 0.002 acres of direct impacts to potential seagrass habitat (shallow subtidal/unconsolidated bottom). The sheet pile impacts will be temporary in nature as they will be removed after construction. Additional temporary direct impacts to the following EFH types are anticipated during construction: oysters and algal communities. Impacts to these EFH types may potentially affect species within the following FMPs: shrimp, coral, snapper-grouper, and spiny lobster. No listed coral species were observed in the survey area. Temporary displacements of individuals of the species included in the shrimp, snapper-grouper and spiny lobster FMPs may occur during project construction; however, these species are all anticipated to return to the project area post-construction as these EFH types that currently exist within the construction limits will not be permanently displaced and should naturally return to similar conditions post-construction. Therefore, no permanent impacts to species within the snapper-grouper, spiny lobster and coral FMPs are anticipated from this project. Oysters observed within the project area provide EFH and HAPC habitat for the snapper-grouper complex fishery. Oysters within the lagoon may experience temporary impacts from water quality changes during construction. Oysters from the pilings will be removed and relocated to an undisturbed area near the project area prior to construction. The use of Best Management Practices (BMPs) and compliance with the most recent edition of the FDOT's Standard Specifications for Road and Bridge Construction will further ensure that no unavoidable impacts occur to EFH from project construction.

Commitments Related to Essential Fish Habitat

FDOT will adhere to the following commitments during the construction phase to minimize and avoid impacts to essential fish habitat:

- If required, barge spudding and staging will be limited to areas outside of seagrass habitat and/or within the areas permitted for impacts.
- No blasting or use of explosives will be used to demolish existing bridge structures. Noise and vibration work, such as pile driving, should be conducted in as few consecutive days as possible.
- Mangrove impacts will be avoided via the use of tie-back methods.
- Oysters from the pilings will be removed and relocated to an undisturbed area near the project area prior to construction.

Adverse impacts to EFH are anticipated to be **Moderate** as there are permanent, indirect impacts to seagrass EFH and potential seagrass habitat, and temporary, direct impacts to potential seagrass habitat, algal communities, and oysters. Due to the small size of the project and the moderate and localized nature of the anticipated EFH impacts, it is anticipated that cumulative impacts to EFH from the proposed project, when combined with other past, present, and future projects, will not adversely impact any FMPs regulated by the SAFMC. Based on impacts to EFH, further NMFS coordination will be required for this project (*pending - additional information and attachments will be included once available*).

5.4 Floodplains

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

According to the revised 2009 Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) Community Panels 12086C0142L and 12086C0161L, the project study area is within the 100-year floodplain, Zone AE. Flood Zone AE represents an area within the Special Flood Hazard Area, where the base flood elevation is determined to be 6.45 feet North American Vertical Datum of 1988 (NAVD88). Although this work includes a drainage system to a water body with a mapped 100-year floodplain, no work is being performed below the 100-year flood elevation and, as a result, this project does not encroach upon the base floodplain.

The preferred alternative will perform hydraulically in a manner equal to or greater than the existing bridge. As a result, there will be no significant adverse impacts on natural and beneficial floodplain values. There will be no significant change in floodplain risk, therefore, it has been determined that this encroachment is not significant. The result of evaluating the existing and proposed conditions has provided the necessary documentation of the preferred alternative. This project was determined to have no floodplain encroachments. For additional information, refer to the ***Location Hydraulics Report***.

Existing Drainage Conditions

The existing drainage configuration will stay the same for the proposed condition; however, new drainage structures are anticipated to avoid any runoff encroachment beyond the maximum allowable spread. These drainage structures would be connected to the existing system. The existing roadway drainage consists generally of curb and gutter with valley gutter inlets and pipes that collect and convey the stormwater runoff. The existing bridge has a crest vertical curve that allows runoff to convey water to either side and then to the nearest curb inlet on Atlantic Avenue. Stormwater drainage from the bridge is channeled through sheet flow to Atlantic Avenue on each side of the bridge. For details on the existing drainage conditions please refer to the ***Drainage Report*** or the ***Preliminary Engineering Report***.

5.5 Sole Source Aquifer

Biscayne Aquifer

The Biscayne Aquifer is classified by the State of Florida as a Sole Source Aquifer (SSA) and is therefore designated as the principal source of drinking water for MDC. Due to its shallow depth and high permeability, the aquifer is susceptible to contamination, and Miami-Dade has designated Wellfield Protection Areas based on characteristics of the aquifer.

According to the MDC Wellfield Protection Areas Map, the project area is not located within the cone of influence of any current designated protection areas. A SSA Coordination Letter, SSA Project Review Form, Water Quality Impact Evaluation (WQIE) Checklist, and attachments were submitted to EPA on January 26, 2024 and a response was received on (*pending*). Please see attached for the EPA concurrence letter (*pending*). The SSA Coordination Letter and WQIE Checklist can be found in the project file.

5.6 Water Resources

This project is located in the Intracoastal Waterway Drainage Basin within the SFWMD jurisdiction. The project also is within the Miami-Dade Department of Regulatory & Economic Resources (MD-RER) jurisdiction. The Intracoastal Waterway is an impaired waterbody, Waterbody Identification (WBID) 3226H1, for nutrients (Chlorophyll-A and total nitrogen) and mercury (in fish tissue). The Intracoastal Waterway Drainage Basin is hydraulically connected to Biscayne Bay Aquatic Preserve which is designated as a Florida Department of Environmental Protection (FDEP) OFW.

All areas of the lagoon and the canal from the lagoon leading into Biscayne Bay are considered OSWs. In addition to the existing drainage system, seven new drainage structures are proposed. The structures are proposed to have connected pipes to convey runoff into the existing pollution control box located west of the Atlantic Isle Lagoon. The preferred alternative would create a net increase of 0.62 acres of impervious surface area, which has been analyzed for water quality and attenuation. This project will meet the criteria and requirements of stormwater quantity and water quality criteria. Please refer to the project file for the Water Quality Impact Evaluation.

Based on the Preferred Alternative, the anticipated permits will involve coordination with SFWMD, Miami-Dade County Department of Regulatory and Economic Resources (MD-RER), FDEP, and the USACE. In addition to implementing permit requirements, the use of BMPs and compliance with the most recent edition of the FDOT's *Standard Specifications for Road and Bridge Construction* will help avoid and minimize impacts to water resources in the project area. BMPs for the project include a National Pollutant Discharge Elimination System (NPDES) Stormwater Management Plan, erosion control measures, and turbidity controls. The following permits are anticipated for the project:

South Florida Water Management District (SFWMD)

Environmental Resource Permit (ERP): For temporary and permanent impacts to surface waters and/or jurisdictional wetlands and drainage improvements to address additional impervious area. Impacts to natural resources will require assessment to determine if seagrass or mangrove impacts may occur at the bridge if minor construction staging and/or widening is warranted.

Water Use Permit: Dewatering requirements to be determined and permitted by the contractor.

Miami-Dade County Department of Regulatory and Economic Resources/DRER

Class I: Required for mangrove impacts and construction activities performed in, on or upon tidal water or coastal wetlands located within MDC. The Class I is needed since the project corridor is not a part of the State Roadway System and is regulated under the authority of MDC. Construction related activities that extends beyond FDOT Right of Way and encroaches within the Atlantic Isles Lagoon is anticipated to warrant a Class I permit review.

Class II: Required to control stormwater discharge to any surface water in MDC. Stormwater runoff generated from the widened roadway may also require MDC Class II permit authorization in addition to the SFWMD ERP since the corridor is located off the FDOT State Roadway system.

Class V: Required for any dewatering of groundwater, surface water or water which has entered into an underground facility, excavation, or trench. Dewatering requirements to be determined during construction and permitted by contractor.

Florida Department of Environmental Protection (FDEP)

All projects with soil disturbing activities 1 acre or greater (excluding milling and resurfacing) will be governed by the FDEP NPDES Stormwater Construction Generic Permit (CGP). This permit constitutes authorization to discharge stormwater

associated with large and small construction activities to surface waters of the state, including through a Municipal Separate Storm Sewer System (MS4).

National Pollutant Discharge Elimination System (NPDES): required for soil disturbance exceeding 1-acre.

Sovereign Submerged Lands Easement (SSL): Lands located ten feet (10') waterward of the ordinary or mean high water line or beneath tidally influenced waters.

U.S. Army Corps of Engineers (USACE)

Section 10/404: Required for temporary and permanent impacts to tidal Waters of the U.S. This project requires minor dredge and/or fill impacts due to the bridge rehabilitation/reconstruction and widening that are over and adjacent to surface waters, respectively. Dredge-and-fill impacts extending below the mean high-water line warrant a USACE Section 10/404 authorization.

5.7 Aquatic Preserves

This project is within the boundaries of Biscayne Bay Aquatic Preserve. After coordination with the Florida Department of Environmental Protection (FDEP), it has been determined that the project will not have an impact on the Biscayne Bay Aquatic Preserve.

5.8 Outstanding Florida Waters

The shallow lagoon within the project study area is connected to the Biscayne Bay through a narrow channel. Biscayne Bay is a designated Aquatic Preserve and an OFW resource (see attached Aquatic Preserve and OFW Map). Water treatment and discharge attenuation is proposed as a part of the Preferred Alternative. However, according to SFWMD, water treatment for this project would be required just for the additional impervious area for this project. The existing drainage configuration will stay the same for the proposed condition; however, new drainage structures are anticipated to avoid any runoff encroachment beyond the maximum allowable spread.

The proposed collection and conveyance drainage systems will be adequate to meet FDOT spread criteria and to contain the stormwater runoff within the warning stages (grate elevation) of structure nodes for the 10-year storms. No riprap is needed around the embankment under the proposed bridge according to scour analysis. A widening is recommended along Atlantic Avenue during temporary traffic control to accommodate traffic and temporary relocation of drainage structures to collect the runoff. This would not adversely affect the existing drainage condition. Based on the evaluation of the existing drainage condition, the stormwater management facilities required to meet DRER criteria can be accommodated within the existing ROW. It is therefore anticipated that no permanent adverse effects will occur to the water quality within the aquatic preserve/OFW as a result of the project.

The project and its associated stormwater management system will be developed to meet the design and performance criteria established in the SFWMD Environmental Resource Permit Applicant's Handbook Volumes I and II for the treatment and attenuation of discharges to impaired waters and OFWs; the design will make every effort to maximize the treatment of stormwater runoff from the proposed project improvements.

During construction, the contractor will comply with all provisions in the most recent version of the *FDOT Standards Specifications for Road and Bridge Construction*. BMPs, including an NPDES Stormwater Management Plan, erosion

control measures, and turbidity controls, will be employed to avoid and minimize any temporary impacts to water quality. A Storm Water Pollution Prevention Program (SWPPP) will also be implemented to control the effects of stormwater runoff during construction. FDOT also commits to minimizing impacts to natural resources to the greatest extent possible including the following: 1) Oysters from the pilings will be removed and relocated to an undisturbed area in the lagoon prior to construction; 2) If required, barge spudding and staging will be limited to areas outside of seagrass habitat and/or within the areas permitted for impacts.

As the overall stormwater system improvements will benefit water quality in the aquatic preserve and OFW, and only temporary impacts to water quality may occur during construction which will be minimized with the implementation of BMPs, no adverse impacts to the Biscayne Bay Aquatic Preserve or OFW are anticipated as a result of the proposed project.

Coordination with FDEP occurred during the PD&E phase to gain input on the resource, discuss potential impacts and to identify the coordination necessary during the design and permitting phase. A coordination letter and attachments were sent to FDEP on December 19, 2023 and a response was received on January 12, 2024(see attached for the coordination letter and resulting correspondence). FDOT will continue to coordinate with FDEP during the design phase and as part of the state permitting process. Please refer to the Wetlands and Aquatic Preserves sections for more information regarding Biscayne Bay Aquatic Preserve and potential impacts.

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

This project is a Type III project according to the provisions of 23 CFR 772 and Section 335.17, F.S., therefore noise analysis or consideration of abatement measures is not required.

The Preferred Alternative consists of replacing the existing bridge with a new precast concrete or cast-in-place structure. The proposed typical section would accommodate one 10-foot-wide travel lane, one 8-foot-wide shared-use path, two 3-foot-wide shoulders, a single slope traffic railing on the side, and a vertical traffic railing on the east side with an architectural facade on both sides of the bridge for an overall width of 27 feet, 3 inches. The scope of work will not include added capacity, the addition of auxiliary lanes, or traffic alignment shifts. Therefore, while temporary increased noise levels are anticipated during construction, a noise analysis per 23 CFR 772 is not required during the PD&E phase.

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 improve 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.

6.3 Contamination

Based on a review of online databases, there are no potential contamination sites located within the appropriate buffers recommended in the Contamination chapter of the FDOT PD&E Manual. Based on the age of the bridge (constructed 1921) there is potential for asbestos containing materials (ACM) or metal-based coatings (MBC), including lead-based paint (LBP) to be present. In accordance with the Asbestos Management Procedures in the Right of Way Procedures Manual, Topic No 575-000-000, a survey for ACM and MBC was conducted in 2018 to determine if any of these materials are present. The scope of the survey included identifying suspect ACM in the asphalt pavement, concrete curbs and superstructure fill over the arch. Non-suspect materials included rock and asphalt, and suspect ACM included the curb concrete, deck concrete, parapet mortar, parapet stucco decor and slope concrete. Samples of these suspect ACM were tested and none of the samples contained asbestos. Additionally, no coatings suspected of containing MBC (Chromium, Cadmium or Lead) were found. Refer to the *CSER* in the project file for further information.

6.4 Utilities and Railroads

Existing utilities include electric, water, sewer, and communications. **Table 6-1** lists utility owners and contact information as identified from a Sunshine 811 ticket. Seven Utility Agency Owners have facilities within the vicinity of the project study area.

During a field review, it was observed that the Miami-Dade County Water and Sewer Department (MDWASD) has facilities running along the centerline of Atlantic Avenue, with manholes spaced approximately 80 feet apart and various valves in multiple locations. A City of North Miami Beach water main that runs parallel along the Atlantic Isle Bridge will require relocation within the proposed bridge typical section. There is also an MDWASD pump station (no. 1318) located at the northwest corner of the eastern intersection of Atlantic Avenue and Atlantic Isles. The pump station is enclosed by a fence set back 4.5 feet from the back of the roadway curb. In addition, there are AT&T buried fiber optics on the north side of the roadway.

Actual utility impacts will be verified during the design phase when a detailed survey is completed, and subsurface utility information is available. Refer to the *Utility Assessment Package (pending)* in the project file for further information.

No.	Utility Agency Owner	Facilities	Address
1	AT&T/Distribution	Telephone	600 NW 79th Ave., Rm. 360, Miami, FL 33126
2	Atlantic Broadband	Cable TV	1681 Kennedy Causeway, North Bay Village, FL 33141
3	Dade County Public Works and Traffic	Traffic/Street Lights	13284 SW 120th St., Miami, FL 33186
4	Florida Power & Light Distribution	Electric	14250 SW 112th St., Miami, FL
5	Florida Power & Light Transmission	Electric	
6	City of North Miami Beach (NMB Water/Jacobs)	Water and Sewer	17011 NE 19th Ave., North Miami Beach, FL 33162
7	Miami-Dade Water Sewer Department	Water and Sewer	3071 SW 38th Ave., Miami, FL 33146

Table 6-1: Utility Agency Owners

6.5 Construction

Construction noise and vibration impacts to the project corridor will be minimized by adherence to the controls listed in the latest edition of the FDOT's Standard Specifications for Road and Bridge Construction.

Due to the project's proximity to Biscayne Bay Aquatic Preserve, water quality protection measures will be included for erosion and sedimentation control, as well as to reduce turbidity during construction. Standard in-water work practices and

applicable construction conditions applicable for the eastern indigo snake, manatees, sea turtles, and smalltooth sawfish will also be followed.

Since dewatering will be necessary during construction, an NPDES Construction General Permit for Discharge of Groundwater will be required, and a Stormwater Pollution Prevention Plan will be developed during design. Additionally, Section 120 Excavation and Embankment - Subarticle 120-1.2 Unidentified Areas of Contamination of the Standard Specifications for Road and Bridge Construction will be provided in the project's construction contract documents. This specification requires that in the event that any material or suspected contamination is encountered during construction, or if any spills caused by construction-related activities should occur, the contractor shall be instructed to stop work immediately and notify the FDOT District Contamination Impact Coordinator (DCIC) as well as the appropriate regulatory agencies for assistance.

Traffic flow and travel patterns will be temporarily impacted during construction activities. Maintenance of traffic and the sequence of construction will be planned and scheduled to minimize pedestrian, bicycle, and vehicular traffic delays throughout the project area. Signs will be used to provide pertinent information to the traveling public.

7. Engineering Analysis Support

The engineering analysis supporting this environmental document is contained within the 430029-2 Draft Preliminary Engineering Report.

DRAFT

8. Permits

The following environmental permits are anticipated for this project:

Federal Permit(s)

USACE Section 10 or Section 404 Permit

Status

To be acquired

State Permit(s)

DEP or WMD Environmental Resource Permit (ERP)
DEP National Pollutant Discharge Elimination System Permit
WMD Right of Way Permit
State 404 Permit

Status

To be acquired
To be acquired
To be acquired
To be acquired

Local Permit(s)

Miami-Dade County Department of Regulatory and Economic Resources Class I and Class II Permits

Status

To be acquired

Other Permit(s)

DEP State-Owned Submerged Lands Permit

Status

To be acquired

Permits Comments

The project does not require a U.S. Coast Guard (USCG) permit because the canal into the lagoon is an unnavigable waterway due to the bridge's clearance.

9. Public Involvement

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

Summary of Activities Other than the Public Hearing

Agency Coordination

Through the ETDM process (project #14413), FDOT informed numerous federal, state, and local agencies of the project and its scope. The Environmental Technical Advisory Team provided their comments on the project's purpose and need and issued their Degree of Effect (DOE) by resource area. Upon completion of the ETDM Programming Screen review, the Programming Screen Summary Report was developed and published on February 4, 2020. with FDOT's response to each DOE as well as discussion about the overall project. As a result of the ETDM screening, there were no substantial comments received.

Public Involvement

On Tuesday, October 27, 2020, a virtual Elected Officials and Agencies Kick-off Meeting for the project was held from 3 p.m. to 5 p.m., and a Public Kick-off Meeting was held from 6 p.m. to 8 p.m. Both virtual meetings were held using the GoToWebinar platform to present graphics showing potential improvements being considered for the study area along with other project information. Meeting notifications were emailed to elected officials and agencies on September 30, 2020. FDOT issued a Press Release on October 19, 2020, and an ad was placed in the Miami Herald on October 20, 2020. Additionally, the meeting was posted in the Florida Administrative Register on October 16, 2022. A project notification flyer was mailed to all property owners within Atlantic Isle residential community on October 6, 2020. A total of 26 people attended the Elected Officials/Agencies Meeting, while 25 people attended the Public Kick-off Meeting. Project team members were available to answer questions and provide assistance. All attendees were given the opportunity to provide comments at the meetings and were informed that the comment period would remain open through November 3, 2020.

Comments made by attendees at the Elected Officials and Agencies Kick-off Meeting included the following:

- requesting the bridge be closed to vehicular traffic expressing concern for the No-Action Alternative provided
- stating that the bridge is no longer safe
- requesting confirmation that a previous study revealed rehabilitation of the bridge was not the best option
- explaining that physical alterations or improvements to the bridge will require approval by the applicable local Historic Preservation Board within Sunny Isles Beach
- requesting an explanation as to how the public can track the ongoing project on the FDOT website
- questioning how the study is being funded and if it is being federally funded
- many questions regarding the project schedule
- requesting that safety signs be placed on both the east and west side of the bridge

Comments during the Public Kick-off Meeting included the following:

- requesting that all residents of the island be consulted regarding how closing the bridge will affect traffic
- welcoming further information for the HOA to share with all residents
- questions as to why the bridge would not just be replaced or rebuilt
- suggesting all other vehicles aside from cars be prohibited from crossing the bridge

- requesting to maintain the bridge's integrity as much as possible
- requesting to keep the bridge the way it is
- asking whether there is a budget for the project
- asking about the cost spent by the City for FDOT inspections

All the comments received were taken into consideration in the development and refinement of the recommended project design.

On Wednesday, June 8, 2022, an Affected Parties Consultation (APC) meeting was held virtually from 3 p.m. to 4 p.m. using the GoToMeeting platform. Invitations to the meeting were emailed to APC members on May 9, 2022, by the FDOT Public Information Office. A project fact sheet was attached to the invitation email. The APC meeting was held to consult with affected parties on the potential alternatives to improve the existing Atlantic Isle Lagoon Bridge (Bridge No. 874218) and to allow the public the opportunity to comment. A total of 25 people joined online through the GoTo Webinar. Top concerns among attendees included: 1) the absence of a replacement alternative for the planters, 2) replicating the historic facade by reusing the limestone from the current bridge during replacement, 3) requests to rehabilitate the bridge as a pedestrian bridge, 4) whether the City and the residents would want the bridge to be designated as historic, and 5) if the PD&E moves forward, when would construction begin and what the cost would be. Additional comment made: FDOT is not interested in maintaining the original structure, but they are using it for vehicles. Each comment was evaluated and incorporated into the project to the extent feasible per FDOT's design and safety standards and other project environmental considerations. A certified public hearing transcript and the responses provided are included in the study's Comments and Coordination Report.

On Thursday, June 23, 2022, an Alternatives Public Workshop was held at 6 p.m. in a hybrid format. The hybrid meeting included two options for interested parties to attend, either in-person or virtual. The in-person option took place at the Sunny Isles Beach Gateway Center, which is approximately 0.25 mile from the Atlantic Isle community. The virtual option was held on the GoToWebinar platform. Meeting notifications were emailed to elected officials and agencies on May 27, 2022, by Cynthia Turcios from the FDOT Public Information Office. FDOT issued a Press Release on June 13, 2022, and an ad was placed in the Miami Herald on June 12, 2022. Additionally, the meeting was posted in the Florida Administrative Register on June 13, 2022, and advertised on the FDOT social media platforms on June 16 and 23. A project notification flyer was mailed to property owners within and near the project study area. A total of 17 people attended the meeting: 10 in person and 7 online. The Alternatives Public Workshop was held to show existing bridge deficiencies, existing roadway and bridge typical sections on Atlantic Avenue, initial alternatives considered, No-Action Alternative, and graphical representations of the proposed typical section, elevation view, and plan view for each of the Build Alternatives. A video of a rendering of the Preferred Alternative was also presented to give attendees an idea of what this alternative would look like in the community. Temporary TTC impact considerations, and alternative characteristics and impacts evaluation matrixes were also discussed as well as the natural resources, ROW considerations, physical environment, agency coordination, the cultural resources in the study area, and the alternative impact evaluation matrix. Comments made by attendees at the Alternatives Public Workshop included:

- concern for the condition of wooden rafters under the bridge
- a green heron that nests yearly on the northwest side of the bridge
- question whether the bridge will be navigable for vessels
- suggestion of a third alternative that would include adding a new travel lane or bridge for vehicles next to the existing bridge to bypass the existing bridge

On Tuesday, October 11, 2022, a Historic Preservation Board Meeting (APC) was held from 5:30 p.m. to 7 p.m. with the City of Sunny Isles Beach Historic Preservation Board. The meeting was held virtually using the GoToMeeting platform

with a total of 21 attendees. The purpose of the meeting was to discuss the alternatives considered, the No-Action Alternative, and the impacts from the temporary TTC, as well as the impact evaluation matrixes and the Preferred Alternative. Comments during the Historic Preservation Board Meeting included the following:

- requesting the reimplementaion of two-way traffic
- discussion of the potential impacts to private properties
- concerns about the pedestrian and bicyclist safety on the pathway adjacent to the road on the bridge
- request to further explain the significance of the park and lagoon
- suggestion for the existing bridge to become a pedestrian bridge, however others stated that it would be an inconvenience to some residents
- requesting specifics as to what FDOT is asking for

A second APC meeting was held on Friday, July 21, 2023, via Microsoft Teams to discuss adverse effects to the significant resources and the potential mitigation measures. There was a total of 22 attendees, who were given the opportunity to ask questions. Comments made during the question-and-answer session included questions as to whether there is an education component included in the mitigation measures, as well as if there had been communication with the City regarding its preferences.

Please refer to the project file for minutes, summaries, and materials from the public involvement conducted to date.

Date of Public Hearing:

Summary of Public Hearing

The Public Hearing is scheduled for March 21, 2024.

10. Commitments Summary

1. The USFWS and FWC *Standard Manatee Conditions for In-Water Work* will be utilized during construction.
2. The NMFS *Protected Species Construction Conditions*, NOAA Fisheries Southeast Regional Office will be utilized during construction.
3. The NMFS *Vessel Strike Avoidance Measures*, NOAA Fisheries Southeast Regional Office will be utilized during construction.
4. The most recent version of the USFWS *Standard Protection Measures for the Eastern Indigo Snake* will be utilized during construction.
5. If required, barge spudding and staging will be limited to areas outside of seagrass habitat and/or within the areas permitted for impacts.
6. No blasting or use of explosives will be used to demolish existing bridge structures. Noise and vibration work, such as pile driving, should be conducted in as few consecutive days as possible.
7. Mangrove impacts will be avoided via the use of tie-back methods.
8. A survey will be conducted for the Florida bonneted bat within the limits of construction activities. If any signs of the Florida bonneted bat are observed (e.g., tree cavities, new potential man-made roosting habitat), the FDOT is committed to coordinating with USFWS regarding the most updated relocation protocols for the Florida bonneted bat.
9. 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.
10. 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, FDOT commits to re-initiating consultation with the USFWS during the design and permitting phase to determine the appropriate survey methodology and to address USFWS regulations regarding the protection of the monarch butterfly.
11. Oysters from the pilings will be removed and relocated to an undisturbed area near the project area prior to construction.

11. Technical Materials

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

Sociocultural Data Report
Cultural Resources Assessment Survey (CRAS)
Section 106 Case Study Report
430029-2-22-01_Atlantic Isles WQIE_SSA_Package_01252024_Signed
Location Hydraulics Report
CSER
430029-2 Draft Preliminary Engineering Report

DRAFT

Attachments

Planning Consistency

Project Plan Consistency Documentation- STIP
Project Plan Consistency Documentation- TIP
Project Plan Consistency Documentation - 2045 LRTP

Social and Economic

Land Use Map

Cultural Resources

Section 106 Case Study Concurrence
SHPO Concurrence Letter

Natural Resources

Atlantic Isles FDEP Aquatic Preserve Letter_2023.12.18.docx
RE_ FDOT FM# 430029-2 Atlantic Isles at W of SR A1A (Bridge #874218) - Aquatic Preserves Letter
Species Consultation Keys
Other Supporting Documentation describing involvement with Aquatic Preserves

Planning Consistency Appendix

Contents:

Project Plan Consistency Documentation- STIP

Project Plan Consistency Documentation- TIP

Project Plan Consistency Documentation - 2045 LRTP

DRAFT



Florida Department of

TRANSPORTATION

[E-Updates](#) | [FL511](#) | [Site Map](#) | [Translate](#)



- [Home](#)
- [About FDOT](#)
- [Contact Us](#)
- [Maps & Data](#)
- [Offices](#)
- [Performance](#)
- [Projects](#)

Web Application

Federal Aid Management David Williams - Manager

STIP Project Detail and Summaries Online Report

**** Repayment Phases are not included in the Totals ****

Selection Criteria	
Approved STIP Financial Project: 430029 2 As Of: 7/1/2023	Detail Related Items Shown

HIGHWAYS							
Item Number: 430029 1		Project Description: ATLANTIC ISLE AT WEST OF SR A1A (BRIDGE# 874218)					
District: 06 County: MIAMI-DADE Type of Work: BRIDGE-REPAIR/REHABILITATION Project Length: 0.009MI							
		Fiscal Year					
Phase / Responsible Agency	<2024	2024	2025	2026	2027	>2027	All Years
PRELIMINARY ENGINEERING / MANAGED BY FDOT							
Fund Code:							
-TOTAL OUTSIDE YEARS	151,430						151,430
Item: 430029 1 Totals	151,430						151,430
Item Number: 430029 2		Project Description: ATLANTIC ISLE AT WEST OF SR A1A (BRIDGE# 874218)					
District: 06		County: MIAMI-DADE		Type of Work: BRIDGE REPLACEMENT		Project Length: 0.009MI	
Extra Description: PD&E STUDY TO FULLY EVALUATE THE ENVIRONMENTAL IMPACTS OF REPLACING THE HISTORICAL ATLANTIC ISLES LAGOON BRIDGE.							
		Fiscal Year					
Phase / Responsible Agency	<2024	2024	2025	2026	2027	>2027	All Years
P D & E / MANAGED BY FDOT							
Fund Code:							
ACBZ-ADVANCE CONSTRUCTION (BRTZ)	581,154	314					581,468
PRELIMINARY ENGINEERING / MANAGED BY FDOT							
Fund Code:							
GFBZ-GENERAL FUND BRIDGE OFF-SYSTEM		747,518					747,518

	LF-LOCAL FUNDS			240,173						240,173
Phase: PRELIMINARY ENGINEERING Totals				987,691						987,691
RIGHT OF WAY / MANAGED BY FDOT										
Fund Code:	GFBR-GEN FUND BRIDGE REPAIR/REPLACE			158,166						158,166
	LF-LOCAL FUNDS			47,389						47,389
Phase: RIGHT OF WAY Totals				205,555						205,555
CONSTRUCTION / MANAGED BY FDOT										
Fund Code:	GFBZ-GENERAL FUND BRIDGE OFF-SYSTEM								1,790,941	1,790,941
	LF-LOCAL FUNDS								587,322	587,322
Phase: CONSTRUCTION Totals									2,378,263	2,378,263
Item: 430029 2 Totals		581,154	988,005	205,555					2,378,263	4,152,977
Project Totals		732,584	988,005	205,555					2,378,263	4,304,407
Grand Total		732,584	988,005	205,555					2,378,263	4,304,407

This site is maintained by the Office of Work Program and Budget, located at 605 Suwannee Street, MS 21, Tallahassee, Florida 32399.

For additional information please e-mail questions or comments to:
 Federal Aid Management
 David Williams: David.Williams@dot.state.fl.us Or call 850-414-4564

[Reload STIP Selection Page](#)

Office Home: [Office of Work Program](#)

-
-
-
-
-
-

- [Contact Us](#)
- [Employment](#)
- [MyFlorida.com](#)
- [Performance](#)
- [Statement of Agency](#)
- [Web Policies & Notices](#)



© 1996-2019 Florida Department of Transportation

Florida Department of Transportation

Consistent, Predictable, Repeatable



HIGHWAYS

TPO Project No: **DT4300292**
 LRTP Ref: 06-10
 County: MIAMI-DADE
 Roadway ID: 87674513
 Lanes Exist: 1
 Lanes Improved: 1
 Lanes Added:
 Project Length: 0.009
 District: 6

Project Description: **ATLANTIC ISLE AT W OF SR A1A (BRIDGE #874218)**

Type of Work: **BRIDGE REPLACEMENT** SIS or Non-SIS: **No**

Extra Description:

		Proposed Funding (in \$000s)							
PHASE :	Funding Source	<2024	2023 - 2024	2024 - 2025	2025 - 2026	2026 - 2027	2027 - 2028	>2028	All Years
	GFBZ	0	748	0	0	0	0	0	748
	LF	0	240	0	0	0	0	0	240
PRELIMINARY ENGINEERING	Total	0	988	0	0	0	0	0	988
	GFBZ	0	0	158	0	0	0	0	158
	LF	0	0	47	0	0	0	0	47
RIGHT OF WAY	Total	0	0	205	0	0	0	0	205
	ACBZ	575	0	0	0	0	0	0	575
PROJECT DEVELOPMENT AND ENVIRONMENTAL	Total	575	0	0	0	0	0	0	575
	GFBZ	0	0	0	0	0	1,791	0	1,791
	LF	0	0	0	0	0	587	0	587
CONSTRUCTION	Total	0	0	0	0	0	2,378	0	2,378

RESPONSIBLE AGENCY: **FDOT**

Item Number: **430029** Item Segment **TOTAL ALL Years ALL Phases:** **\$4,146**
 Item **TOTAL ALL Years ALL Phases ALL Segments:** **\$4,297**

TPO Project No: **DT4301613**
 LRTP Ref: 06-09
 County: DIST/ST-WIDE
 Roadway ID:
 Lanes Exist:
 Lanes Improved:
 Lanes Added:
 Project Length:
 District: 6

Project Description: **CONSTRUCTION FINAL ESTIMATES CONTRACT SUPPORT**

Type of Work: **INSPECT CONSTRUCTION PROJS.** SIS or Non-SIS: **No**

Extra Description:

		Proposed Funding (in \$000s)							
PHASE :	Funding Source	<2024	2023 - 2024	2024 - 2025	2025 - 2026	2026 - 2027	2027 - 2028	>2028	All Years
		191	0	0	0	0	0	0	191
CONSTRUCTION	Total	191	0	0	0	0	0	0	191

RESPONSIBLE AGENCY: **FDOT**

Item Number: **430161** Item Segment **TOTAL ALL Years ALL Phases:** **\$191**
 Item **TOTAL ALL Years ALL Phases ALL Segments:** **\$2,971**

AVAILABLE REVENUE FOR NEW CAPITAL & NEW O&M

The financial analysis provides the projected available revenue by agency for 21 years beyond the TIP. Some revenues are already programmed or allocated to specific programs. The operating and maintenance cost for county roads must be covered by the projected revenue and therefore, subtracted from the forecast revenues. The operating and maintenance cost for the existing transit system is accounted for in the Proforma and are reflected in the Contributions to the SMART Plan. The Miami-Dade TPO is dedicating \$30 million a year towards the SMART Plan. Since these funds are reflected in the Proforma and in turn the Contributions to the SMART Plan, they are deducted from the available TMA/SU funds. **Table 6-4** is a summary of the projected revenue available (forecast revenues minus committed revenues) for new capital projects and new O&M and shown by allocation source.

TABLE 6-4: AVAILABLE REVENUE FOR NEW CAPITAL AND NEW O&M

SOURCE	PRIORITY I FY 2025 SUBTOTAL	PRIORITY II FY 2026-2030 SUBTOTAL	PRIORITY III FY 2031-2035 SUBTOTAL	PRIORITY IV FY 2036-2045 SUBTOTAL	21 YEAR TOTAL
REVENUES FOR NEW CAPITAL AND NEW O&M					
Other Roads, Construction, and ROW	\$112.62	\$741.77	\$819.82	\$1,922.24	\$3,596.45
Transit	\$56.68	\$356.64	\$391.03	\$818.41	\$1,622.76
FTE	\$0.00	\$331.90	\$676.26	\$1,865.90	\$2,874.06
MDX	\$166.15	\$145.19	\$279.44	\$355.11	\$945.88
TMA/SU Funds	\$5.79	\$28.93	\$28.93	\$57.85	\$121.50
Transportation Alternatives (TALU)	\$0.65	\$3.24	\$3.24	\$6.49	\$13.62
DTPW - Roads	\$68.13	\$341.49	\$320.05	\$548.26	\$1,277.93
DTPW: Contributions to the SMART Plan (PTP)	\$58.81	\$507.18	\$728.33	\$2,156.83	\$3,451.15
SUBTOTAL	\$468.84	\$2,456.33	\$3,247.10	\$7,731.09	\$13,903.36
SIS HIGHWAYS CONSTRUCTION & ROW	\$360.83	\$1,703.34	\$563.40	\$2,114.80	\$4,742.37
SET ASIDES					
Bike/Ped Set Aside	\$5.01	\$25.03	\$25.03	\$50.07	\$105.14
2045 Congestion Management Set Aside	\$9.59	\$58.72	\$63.95	\$-	\$132.26
2045 Freight Set Aside	\$8.46	\$52.73	\$57.23	\$124.62	\$243.04
SUBTOTAL	\$23.06	\$136.48	\$146.21	\$174.69	\$480.44
ILLUSTRATIVE PROJECTS					
Transportation Alternatives Funds (TALT) Districtwide	\$3.11	\$15.54	\$15.54	\$31.07	\$65.26
Districtwide TRIP Funds	\$3.74	\$27.93	\$31.06	\$63.65	\$126.38
SUBTOTAL FOR ILLUSTRATIVE PROJECTS	\$6.85	\$43.47	\$46.60	\$94.72	\$191.64
TOTAL AVAILABLE COSTS	\$859.58	\$4,339.62	\$4,003.31	\$10,115.30	\$19,317.81

Note: Totals may not add due to rounding.

Social and Economic Appendix

Contents:

Land Use Map

DRAFT



Florida Department of Transportation
 District VI
 1000 NW 111th Avenue
 Miami, FL 33172-5800

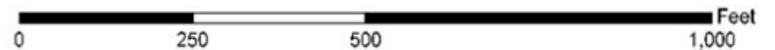
Land Use Map

FM 430029-2-22-01
 Atlantic Isle Bridge No. 874218 West of SR-A1A
 Miami-Dade County, FL
 Section: 14, Township: 52S, Range: 42E

Legend

FLUCCS - Description

-  1210 - Single Family Unit
-  1330 - Multiple Dwelling Units
-  1400 - Commercial and Services
-  5120 - Canals
-  5200 - Bays and Estuaries



Cultural Resources Appendix

Contents:

Section 106 Case Study Concurrence

SHPO Concurrence Letter

DRAFT



Florida Department of Transportation

RON DESANTIS
GOVERNOR

1000 NW 111 Avenue
Miami, FL 33172

JARED W. PERDUE, P.E.
SECRETARY

May 4, 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: Ms. Marsha Welch, Transportation Compliance Review Program

Re: Section 106 Determination of Effects Case Study Report for the Atlantic Isle at West Bridge (FDOT) Bridge No. 874218) Project Development and Environment (PD&E) Study in the City of Sunny Isles Beach, Miami-Dade County, Florida (Financial Project ID [FPID] No. 430029-2-21-01)

Dear Ms. Lotane,

At the request of the Florida Department of Transportation (FDOT) District 6, Janus Research prepared the Section 106 Determination of Effects Case Study Report for the Atlantic Isle at West Bridge (FDOT Bridge No. 874218) Project Development and Environment (PD&E) Study in the City of Sunny Isles Beach, Miami-Dade County, Florida (Financial Project ID [FPID] No. 430029-2-21-01). 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 project to the National Register of Historic Places (National Register) eligible resources identified during the *Cultural Resources Assessment Survey (CRAS) for the Atlantic Isle at West Bridge* (Janus Research 2022).

The CRAS resulted in the identification of the previously recorded Atlantic Island Bridge (8DA6433) which was documented in 2016 and determined eligible for listing in the National Register by the State Historic Preservation Officer (SHPO) on August 23, 2016 under Criteria A and C in the areas of Community Planning and Development and Architecture for its association with the development of the Atlantic Island subdivision and Sunny Isles Beach, as well as its unique design. The Atlantic Island Resource Group (8DA19241), a designed landscape, was determined eligible for listing in the National Register under Criteria A and C in the areas of Community Planning and Development and Landscape Architecture. The two landscape features, the Lake of the Isles

www.fdot.gov

(8DA15824) and Atlantic Island Park (8DA15825), are a contributing part of the resource group, along with the previously recorded National Register-eligible Atlantic Island Bridge (8DA6433). The SHPO concurred with the findings of the CRAS in a letter signed on February 4, 2022.

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 these National Register-eligible properties. The Criteria of Adverse Effect, as defined in 36 CFR Part 800.5, were applied to the significant historic properties to determine project effects on each of the eligible historic properties. In consideration of available project information, the Preferred Alternative, Build Alternative #2, will have an adverse effect on the Atlantic Island Bridge (8DA6433) since it will be removed. With the removal of the bridge, the Atlantic Island Resource Group (8DA19241) will also be adversely impacted. The Preferred Alternative will have no adverse effect on the Lake of the Isles (8DA15824), and Atlantic Island Park (8DA15825). The Preferred Alternative incorporates a new low-profile bridge with a structural arch and non-structural oolitic limestone along the exterior faces to acknowledge the form and aesthetics of the existing bridge.

Affected parties' consultation during the Section 106 process among FDOT, SHPO, interested parties, and the public took place at meetings with project stakeholders in June 2022 and October 2022. Further consultation will take place in order to develop mitigation and a Memorandum of Agreement (MOA).

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:

D3427C9EEE844D5...

Victoria Vogt, M.S.
Environmental Specialist III

www.fdot.gov

<p>The Florida State Historic Preservation Officer finds the attached Section 106 Determination of Effects Case Study Report complete and sufficient and <input checked="" type="checkbox"/> concurs/ <input type="checkbox"/> does not concur with the recommendations and findings provided in this cover letter for SHPO/FDHR Project File Number <u>2022-0518B</u> Or, the SHPO finds the attached document contains insufficient information.</p>	
<p>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 <i>de minimis</i> Section 4(f) finding at its discretion for the use of land from the historic property.</p>	
<p>SHPO Comments:</p>	
<p><i>Kelly A Chase</i> <i>for</i></p>	
<p><i>5.12.2023</i></p>	
<p>Alissa S. Lotane, Director, and State Historic Preservation Officer Florida Division of Historical Resources</p>	<p>[DATE]</p>



Florida Department of Transportation

RON DESANTIS
GOVERNOR

1000 NW 111th Avenue
Miami, FL 33172-5800

KEVIN J. THIBAUT, P.E.
SECRETARY

January 27, 2022

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

Attn: Ms. Marsha Welch, Transportation Compliance Review Program

Re: Cultural Resource Assessment Survey for the Atlantic Isle at West Bridge (FDOT Bridge No. 874218) Project Development and Environment (PD&E) Study in the city of Sunny Isles Beach, Miami-Dade County, Florida (Financial Project ID [FPID] No. 430029-2-21-01)

Dear Dr. Parsons,

At the request of the Florida Department of Transportation (FDOT) District 6, Janus Research conducted the Cultural Resource Assessment Survey (CRAS) for the Atlantic Isle at West Bridge (FDOT Bridge No. 874218) Project Development and Environment (PD&E) Study in the city of Sunny Isles Beach, Miami-Dade County, Florida (Financial Project ID [FPID] No. 430029-2-21-01). 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. The current survey is being conducted for the PD&E Study to address a permanent solution for the Atlantic Isle Bridge (FDOT Bridge No. 874218), also known as the Atlantic Island Bridge (Florida Master Site File [FMSF] No. 8DA6433).

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

Improve Safety, Enhance Mobility, Inspire Innovation

www.fdot.gov

Timothy A. Parsons, Ph.D.

January 27, 2022

Page 2

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 Chapter 267, Florida Statutes (F.S.); and the standards embodied in the Florida Division of Historical Resources' (FDHR) 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 Project Development and Environment Manual. 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).

No previously recorded archaeological sites were located within the APE, nor within a one-mile buffer encompassing the APE. Subsurface testing within the corridor was not possible or necessary within the APE due to the artificial nature of the island landform and the ubiquity of paved roadway, buried utilities, and hardscaping. The desktop analysis and pedestrian survey determined that the archaeological APE exhibits a low potential for containing intact archaeological sites. No Miami-Dade County-designated archaeological sites or zones are located within the APE

The historic resources survey resulted in the identification of 12 historic resources within the historic resources APE, one of which was previously recorded. The previously recorded Atlantic Island Bridge (8DA6433) was documented in 2016 and determined eligible for listing in the National Register by the SHPO on August 23, 2016 under Criteria A and C in the areas of Community Planning and Development and Architecture for its association with the development of the Atlantic Island subdivision and Sunny Isles Beach, as well as its unique design. No changes to the bridge were observed since it was last recorded and the FMSF form was not updated during the current survey.

The 11 newly recorded historic resources include eight historic buildings (8DA15822-8DA15823, 8DA19157-8DA19162), two historic designed landscape features (8DA15824-8DA15825), and one historic designed landscape (8DA19241). The Atlantic Island Resource Group (8DA19241), a designed landscape, is considered eligible for listing in the National Register under Criteria A and C in the areas of Community Planning and Development and Landscape Architecture. The two landscape features, the Lake of the Isles (8DA15824) and Atlantic Island Park (8DA15825), are considered a contributing part of the resource group, along with the previously recorded National Register-eligible Atlantic Island Bridge (8DA6433).

The eight newly recorded historic buildings (8DA15822-8DA15823, 8DA19157-8DA19162) exhibit common architectural styles and design types found in South Florida. Many of the structures feature alterations or modifications which diminish their historic physical integrity including replaced windows, doors, or exterior material, the addition of non-historic exterior ornament, or additions to the historic structure.

Timothy A. Parsons, Ph.D.

January 27, 2022

Page 3

Research conducted during this study did not identify known associations with significant people or historical events.

Analysis of aerial photographs revealed that the area surrounding the project APE was not largely developed until the 1960s, with more than half of the lots in the subdivision containing the APE remaining undeveloped by 1968. While every lot within the subdivision is now developed, this construction mainly occurred after the early 1970s. Furthermore, a later wave of development in the 1990s and 2000s resulted in several adjacent historic parcels with large additions which have altered the appearance of any historic buildings or contain modern buildings constructed as infill. Based on field observations, it does not appear that there are any potential residential historic districts that may contain any of the buildings within the APE at this time. Therefore, these eight newly recorded historic resources are considered ineligible for listing in the National Register, either individually or as part of a historic district.

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 me at Steven.james@dot.state.fl.us or (305) 470-5221.

Sincerely,

Steven Craig James, RLA
District Environmental Manager

DocuSigned by:
Steven James
44A2F58851B5476...

Timothy A. Parsons, Ph.D.

January 27, 2022

Page 4

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 2022-518. Or, the SHPO finds the attached document contains _____ insufficient information.

In accordance with the Programmatic Agreement among the ACHP, 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 FDOT may approve the project as de minimis use under Section 4(f) under 23 CFR 774.

SHPO Comments:

Kelly L. Chase
Digitally signed by Kelly L. Chase
DN: cn=Kelly L. Chase, o, ou,
email=kelly.chase@dos.myflorida.com, c=US
Date: 2022.02.04 13:07:35 -0500

2/4/2022

Timothy A. Parsons, Director, and
State Historic Preservation Officer
Florida Division of Historical Resources

[DATE]

Natural Resources Appendix

Contents:

Atlantic Isles FDEP Aquatic Preserve Letter_2023.12.18.docx

RE_ FDOT FM# 430029-2 Atlantic Isles at W of SR A1A (Bridge #874218) - Aquatic Preserves Letter

Species Consultation Keys

Other Supporting Documentation describing involvement with Aquatic Preserves

DRAFT



Florida Department of Transportation

RON DESANTIS
GOVERNOR

1000 N.W. 111 Avenue
Miami, Florida 33172

JARED W. PERDUE, P.E.
SECRETARY

December 18, 2023

Alex Reed
Director, Office of Resilience and Coastal Protection
Florida Department of Environmental Protection
3900 Commonwealth Boulevard
Mail Station 235
Tallahassee, FL 32399-3000

**SUBJECT: Request for Aquatic Preserve & Outstanding Florida Water
Concurrence**

Project Name: Atlantic Isle at West of SR A1A (Bridge No. 874218)

FM#: 430029-1-22-01

ETDM#: 14413

County: Miami-Dade

Dear Mr. Reed,

The Florida Department of Transportation (FDOT), District Six, is conducting a Project Development and Environment (PD&E) Study to address the deficiencies of the existing Atlantic Isle Bridge (Bridge No. 874218). The Atlantic Isle Bridge is a historic bridge located on Atlantic Island just west of State Road (SR) A1A (Collins Avenue), within the City of Sunny Isles Beach in Miami-Dade County, Florida. The limits of the proposed project encompass the bridge (along Atlantic Avenue) and approaches for a distance of approximately 0.009 mile. The replacement of the bridge involves six drilled shafts and temporary sheet piles that will be installed within the water column, and all other work such as removal of the existing bridge will occur from the upland. The Atlantic Isle Bridge lies within the limits of the Biscayne Bay Aquatic Preserve, an Outstanding Florida Water (OFW). Please see attached **Figure 1** showing project location and boundaries of the aquatic preserve and OFW.

The Preferred Alternative involves replacing the entire bridge to address the structural and functional deficiencies of the existing superstructure and substructure to enhance

Alex Reed

December 18, 2023

Page 2

operations and remove load restrictions. This would require demolition of the existing bridge and replacement of the bridge at the same location to minimize overall environmental impacts. The proposed bridge typical section would be approximately 27 feet wide to accommodate one 10-foot-wide travel lane, one 8-foot-wide shared use path, 3-foot-wide shoulders, and concrete traffic railings on both sides. A raised sidewalk would separate pedestrians from vehicular traffic.

In September 2016, FDOT finalized the *Atlantic Isle Lagoon Bridge Proof of Concept Report*, which summarized a feasibility study to identify bridge rehabilitation alternatives that could preserve the service life of the bridge. The *Proof of Concept Report* documented the evaluation of several alternatives to rehabilitate the bridge, which included reusing the existing concrete arch, replacing the existing arch with a new cast-in-place (CIP) reinforced concrete arch, reconstructing the existing bridge with a new precast concrete structure, and preserving the existing bridge with minor repairs but without any bridge rehabilitation. Subsequently, FDOT prepared the *Atlantic Isle Bridge Rehabilitation Technical Memorandum* in May 2018 to address a rehabilitation option for the bridge. FDOT then prepared rehabilitation design plans based on the recommendation to reuse the existing concrete arch. The location of foundations was coordinated with the FDOT District 6 geotechnical and maintenance staff. Results from borings and excavations at the bridge approaches were not conclusive, and excavation of both approaches was required to complete the rehabilitation design plans. Because excavation of the bridge approaches could have an adverse effect on the bridge, FDOT discontinued the bridge rehabilitation design until further study of a range of alternatives could be analyzed for environmental effects. Subsequently, FDOT initiated this PD&E Study in September 2020 to fully evaluate impacts of all feasible alternatives. Prior to the initiation of this PD&E Study, an Advance Notification Package was distributed on October 23, 2019. The Efficient Transportation Decision Making (ETDM) Programming Screen (Project No. 14413) was completed in February 2020. The project's class of action is a Type 2 Categorical Exclusion.

During the ETDM Programming Screen, the Florida Department of Environmental Protection (FDEP) assigned a DOE of *Minimal* to the topic of Water Quality and Quantity. The US Environmental Protection Agency (EPA) assigned a DOE of *Moderate* to Special Designations. The South Florida Water Management District (SFWMD) assigned a DOE of *Minimal* to Special Designations. The overall DOE for Water Quality and Quantity was *Minimal*. Comments were provided by SFWMD, the FDEP, and USEPA under the Water Quality and Quantity section. Biscayne Bay is designated as an aquatic preserve and OFW under Rules 18-18 and 62-302.700(9), Florida Administrative Code. FDEP noted that any increase in stormwater runoff from the new bridge spans would be of concern and recommended that the study include an evaluation of existing bridge/causeway

Alex Reed

December 18, 2023

Page 3

stormwater treatment adequacy and details on the future stormwater treatment facilities. Retrofitting of stormwater conveyance systems would help reduce impacts to water quality. SFWMD stated that this project will be required to meet the criteria of the Environmental Resource Permit Applicant's Handbook, Volume II with respect to water quality and quantity.

In accordance with the FDOT PD&E Manual, the environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by FDOT pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022, and executed by Federal Highway Administration (FHWA) and FDOT.

As part of the PD&E process, an evaluation of existing stormwater treatment adequacy and improvements to handle increased impervious surface area was completed for the Preferred Alternative. The existing roadway drainage consists generally of curb and gutter with valley gutter inlets and pipes that collect and convey the stormwater runoff. The existing bridge typical section allows for stormwater runoff from the bridge to sheet flow to Atlantic Avenue on each side of the bridge. The bridge has a crest vertical curve that conveys water to either end, then to the nearest curb inlet on Atlantic Avenue. After being collected by curb inlets, stormwater from the bridge drains directly into the Intracoastal Waterway after being treated. Prior to discharge into the Intracoastal Waterway, stormwater runoff collected is conveyed toward an existing pollution control device (Contech Vortechs Stormwater Treatment Model 5000). The treated runoff ultimately discharges into the Intracoastal Waterway via a 24-inch-diameter corrugated metal pipe.

Water treatment and discharge attenuation is proposed. However, according to SFWMD, water treatment for this project would be required just for the additional impervious area for this project. The existing drainage configuration will stay the same for the proposed condition; however, new drainage structures are anticipated to avoid any runoff encroachment beyond the maximum allowable spread. The proposed collection and conveyance drainage systems will be adequate to meet FDOT spread criteria and to contain the stormwater runoff within the warning stages (grate elevation) of structure nodes for the 10-year storms. No riprap is needed around the embankment under the proposed bridge according to scour analysis. A widening is recommended along Atlantic Avenue during temporary traffic control to accommodate traffic and temporary relocation of drainage structures to collect the runoff. This would not adversely affect the existing drainage condition. Based on the evaluation of the existing drainage condition, the stormwater management facilities required to meet DRER criteria can be accommodated within the existing ROW. It is therefore anticipated that no permanent adverse effects will occur to the water quality within the aquatic preserve as a result of the project.

Alex Reed

December 18, 2023

Page 4

During construction, the contractor will comply with all provisions in the most recent version of the *FDOT Standards Specifications for Road and Bridge Construction*. Best Management Practices (BMPs) including a National Pollutant Discharge Elimination System (NPDES) Stormwater Management Plan, erosion control measures, and turbidity controls, will be employed to avoid and minimize any temporary impacts to water quality. FDOT is reviewing the opportunity to minimize impacts to natural resources by working with the regulatory agencies to develop avoidance and minimization measure such as: 1) Oysters from the pilings will be removed and relocated to an undisturbed area near the project area prior to construction; 2) If required, barge spudding and staging will be limited to areas outside of seagrass habitat and/or within the areas permitted for impacts.

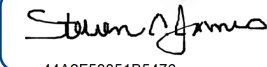
Following completion of this PD&E Study, coordination with environmental regulatory agencies will continue through the final design phase and permitting process. The following permits are anticipated to be required for the project:

- US Army Corps of Engineers (USACE) Section 404/Section 10 Department of the Army Permit
- SFWMD Environmental Resource Permit
- Miami-Dade County Department of Regulatory and Economic Resources (DRER) Class I and Class II Permits
- Sovereign Submerged Lands (SSL) Easement

As the overall stormwater system improvements will benefit water quality in the aquatic preserve and OFW, and only temporary impacts to water quality may occur during construction which will be minimized with the implementation of BMPs, FDOT is requesting your concurrence that no adverse impacts to the Biscayne Bay Aquatic Preserve or OFW are anticipated as a result of the proposed project. We kindly request that you provide a response within 30 days of receiving this letter. If you have any questions, please contact me at (305) 470-5221 or steven.james@dot.state.fl.us, or Victoria Vogt, at (305) 470-5231 or victoria.vogt@dot.state.fl.us. Thank you for your assistance with this project.

Sincerely,

DocuSigned by:



44A2F58851B5476...

Steven Craig James, RLA
Environmental Manager

Alex Reed

December 18, 2023

Page 5

Attachments

Figure 1: Aquatic Preserve and OFW Map

CC: Dat Huynh, PE - FDOT

Victoria Vogt - FDOT

Joy Castro - Stantec

DRAFT



Figure 1: Aquatic Preserve and OFW Map

From: [Reed, Alex](#)
To: [Vogt, Victoria](#)
Cc: [Huynh, Dat](#); [James, Steven C.](#); [Taveras, Kimberly](#); [Ross, Colleen/ORL](#); [Castro, Joy](#)
Subject: RE: FDOT FM# 430029-2 Atlantic Isles at W of SR A1A (Bridge #874218) - Aquatic Preserves Letter
Date: Tuesday, January 16, 2024 3:07:18 PM
Attachments: [image001.png](#)

You don't often get email from alex.reed@floridadep.gov. [Learn why this is important](#)

Understood. Thank you!

Alex

From: Vogt, Victoria <Victoria.Vogt@dot.state.fl.us>
Sent: Tuesday, January 16, 2024 2:17 PM
To: Reed, Alex <Alex.Reed@FloridaDEP.gov>
Cc: Huynh, Dat <Dat.Huynh@dot.state.fl.us>; James, Steven C. <Steven.James@dot.state.fl.us>; Taveras, Kimberly <Kimberly.Taveras@dot.state.fl.us>; Ross, Colleen/ORL <Colleen.Ross@jacobs.com>; Castro, Joy <Joy.Castro@stantec.com>
Subject: RE: FDOT FM# 430029-2 Atlantic Isles at W of SR A1A (Bridge #874218) - Aquatic Preserves Letter

EXTERNAL MESSAGE

This email originated outside of DEP. Please use caution when opening attachments, clicking links, or responding to this email.

Hi Mr. Reed,

Thank you for your review and comment. It is a standard practice for FDOT to follow our Standard Specifications for Road and Bridge Construction which comply with the turbidity requirements of an Outstanding Florida Water (OFW), thus requiring turbidity levels not to exceed 0 NTUs above background levels. Regarding cultural resources, our team will follow the Section 106 process working with the State Historic Preservation Officer (SHPO) and the local community, as well as the local historic preservation board, to discuss various mitigation strategies to memorialize the historic significance of the structure. This includes, but is not limited to, a small plaque or engraving. Such mitigation strategies will be outlined in a Memorandum of Agreement between the FDOT and the SHPO.

Best,

Victoria Vogt, M.S., FCCM
District Cultural Resources Coordinator/
Environmental Supervisor

Planning and Environmental Management Office
Florida Department of Transportation - District 6
Adam Leigh Cann Building
1000 NW 111th Avenue, Room 6111

Miami, Florida 33172

Phone: (305) 470-5420; Fax: (305) 470-5205

E-mail: Victoria.Vogt@dot.state.fl.us

From: Reed, Alex <Alex.Reed@FloridaDEP.gov>

Sent: Friday, January 12, 2024 1:24 PM

To: Vogt, Victoria <Victoria.Vogt@dot.state.fl.us>

Cc: Huynh, Dat <Dat.Huynh@dot.state.fl.us>; James, Steven C. <Steven.James@dot.state.fl.us>;
Ross, Colleen/ORL <Colleen.Ross@jacobs.com>; Castro, Joy <Joy.Castro@stantec.com>

Subject: RE: FDOT FM# 430029-2 Atlantic Isles at W of SR A1A (Bridge #874218) - Aquatic Preserves Letter

EXTERNAL SENDER: Use caution with links and attachments.

Victoria,

Our AP staff have reviewed the project. Our only concern would be turbidity created from construction of the new bridge. The project proposes to use best management practices, but we wanted to remind you that turbidity has a "0 NTU above background" limit in Biscayne Bay Aquatic Preserve.

As a side note, acknowledging cultural resources in the APs is part of our management plan. It would be ideal to distinguish to historical significance of the original bridge with a small plaque or engraving, if you rebuild entirely.

Thank you for the opportunity to comment.

Alex



Alex Reed

Director, Office of Resilience and Coastal Protection
Florida Department of Environmental Protection

alex.reed@FloridaDEP.gov

Office: 850.245.2101

Mobile: 850.284.4131

<https://floridadep.gov/rcp>

From: Vogt, Victoria <Victoria.Vogt@dot.state.fl.us>
Sent: Tuesday, December 19, 2023 4:38 PM
To: Reed, Alex <Alex.Reed@FloridaDEP.gov>
Cc: Huynh, Dat <Dat.Huynh@dot.state.fl.us>; James, Steven C. <Steven.James@dot.state.fl.us>; Ross, Colleen/ORL <Colleen.Ross@jacobs.com>; Castro, Joy <Joy.Castro@stantec.com>
Subject: FDOT FM# 430029-2 Atlantic Isles at W of SR A1A (Bridge #874218) - Aquatic Preserves Letter
Importance: High

EXTERNAL MESSAGE

This email originated outside of DEP. Please use caution when opening attachments, clicking links, or responding to this email.

Good Afternoon,

On behalf of the Florida Department of Transportation (FDOT) District 6, please find attached the Aquatic Preserves Letter related to the Atlantic Isles Project Development & Environment (PD&E) Study located within the limits of the Biscayne Bay Aquatic Preserve, an Outstanding Florida Water (OFW).

FDOT is kindly requesting your concurrence that no adverse impacts to the Biscayne Bay Aquatic Preserve or OFW are anticipated as a result of the proposed project. We kindly request that you provide a response by **Friday, January 19, 2024**. Feel free to reach out with any further questions.

Best,

Victoria Vogt, M.S., FCCM

District Cultural Resources Coordinator/
Environmental Supervisor

Planning and Environmental Management Office
Florida Department of Transportation - District 6
Adam Leigh Cann Building
1000 NW 111th Avenue, Room 6111
Miami, Florida 33172

Phone: (305) 470-5420; Fax: (305) 470-5205
E-mail: Victoria.Vogt@dot.state.fl.us



Caution: This email originated from outside of Stantec. Please take extra precaution.

Attention: Ce courriel provient de l'extérieur de Stantec. Veuillez prendre des précautions supplémentaires.

Atención: Este correo electrónico proviene de fuera de Stantec. Por favor, tome precauciones adicionales.

DRAFT



United States Department of the Interior



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

August 1, 2017

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

Subject: Consultation Key for the Eastern Indigo Snake – Revised

Dear Mr. Kinard:

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

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

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

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

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

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

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

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

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

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

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

Scope of the Key

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

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

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

Habitat

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

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

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

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

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

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

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

Minimization Measures

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

Determinations

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

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

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

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

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

- A. Project is not located in open water or salt marsh.....go to B
 Project is located solely in open water or salt marsh.....**no effect**

- B. Permit will be conditioned for use of the Service's most current guidance for Standard Protection Measures For The Eastern Indigo Snake (currently 2013) during site preparation and project construction.....go to C
 Permit will not be conditioned as above for the eastern indigo snake, or it is not known whether an applicant intends to use these measures and consultation with the Service is requested.....**may affect**

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

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

- E. Any permit will be conditioned such that all gopher tortoise burrows, active or inactive, will be excavated prior to site manipulation in the vicinity of the burrow¹. If an eastern indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Any permit will also be conditioned such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an eastern indigo snake, no work will commence until the snake has vacated the vicinity of proposed work.....NLAA²
 Permit will not be conditioned as outlined above.....**may affect**

End Key

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

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

Donnie Kinard

Page 7

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)

LITERATURE CITED

- Enge K. M. 2017. Personal communication. Email from Kevin Enge, Florida Fish and Wildlife Conservation Commission, Gainesville, Florida to Steve Mortellaro, U.S. Fish and Wildlife Service, Vero Beach, Florida, July 5, 2017. Locations of Eastern Indigo Snake (*Drymarchon couperi*).
- Enge K. M. and M. J. Endries. 2009. Status of the Eastern Indigo Snake (*Drymarchon couperi*) in Florida. Southeast Partners in Amphibian and Reptile Conservation Meeting.
- Landers, J. L. and D.W. Speake. 1980. Management Needs of Sandhill Reptiles in Southern Georgia. Proceedings Annual Conference of Southeastern Association of Fish and Wildlife Agencies. 34: 515-529.
- Layne, J.N., and T.M. Steiner. 1996. Eastern indigo snake (*Drymarchon corais couperi*): summary of research conducted on Archbold Biological Station. Report prepared under Order 43910-6-0134 to the U.S. Fish and Wildlife Service; Jackson, Mississippi.
- Lawler, H.E. 1977. The status of *Drymarchon corais couperi* (Holbrook), the eastern indigo snake, in the southeastern U.S.A. *Herpetological Review* 8(3):76-79.
- Means, D. B. 2006. Vertebrate faunal diversity of longleaf pine ecosystems. In *The Longleaf Pine Ecosystem* pp. 157-213. Springer New York.
- Molar, P.E. 1985a. Distribution of the eastern indigo snake, *Drymarchon corais couperi*, in Florida. *Herpetological Review* 16(2):37-38.
- Moler, P.E. 1985b. Home range and seasonal activity of the eastern indigo snake, *Drymarchon corais couperi*, in northern Florida. Final performance report, Study E-1-06, III-A-5. Florida Game and Fresh Water Fish Commission; Tallahassee, Florida.
- Steiner, T.M., O.L. Bass, Jr., and J.A. Kushlan. 1983. Status of the eastern indigo snake in Southern Florida National Parks and vicinity. South Florida Research Center Report SFRC-83-01, Everglades National Park; Homestead, Florida.
- U.S. Fish and Wildlife Service (Service). 1999. South Florida multi-species recovery plan. 23 pp.
- U.S. Fish and Wildlife Service (Service). 2013. Standard Protection Measures for the Eastern Indigo Snake. August 12, 2013. U.S. Fish and Wildlife Service, South Florida Ecological Services Office; Vero Beach, Florida.
- Wilson, L.D. and L. Porras. 1983. The ecological impact of man on the south Florida herpetofauna. *University of Kansas Museum of Natural History Special Publication* 9:1-89.
- Zeigler, M. 2006. Personal communication. Citrus grove operations manager. Meeting with the U.S. Fish and Wildlife Service on August 1, 2006. Agricultural Resource Management; Vero Beach, Florida.



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.

Donald W. Kinard

Page 2

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.

Donald W. Kinard

Page 3

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 reinstate 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
Florida¹
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 structure³ 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 Maps⁴); [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 Maps⁴) D
 - Project is not located in an Important Manatee Area (IMA) (see Glossary and accompanying Maps⁴) 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 new⁵ 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 new⁵ 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 Map⁴) *May affect*
 - Project is not located in the Braden River Area of Inadequate Protection (Manatee County) (see Glossary and accompanying AIP Map⁴)..... 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, DESOTO⁷, FLAGLER, GLADES, HENDRY, HILLSBOROUGH, LEVY, MANATEE, MONROE⁷, PASCO⁷, 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 vegetation⁸, emergent vegetation or mangrove will have beneficial, insignificant, discountable⁹ or no effects on the manatee¹⁰ O

Project impacts to submerged aquatic vegetation⁸, emergent vegetation or mangrove may adversely affect the manatee¹⁰ *May affect*

O. Project proponent **elects** to follow standard manatee conditions for in-water work¹¹ and requirements, as appropriate for the proposed activity, prescribed on the maps⁴ P

Project proponent **does not elect** to follow standard manatee conditions for in-water work¹¹ and appropriate requirements prescribed on the maps⁴ *May affect*

P. If project is for a new or expanding⁵ 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 appropriate¹² and no further consultation with the Service is necessary.

If project is for a new or expanding⁵ 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 appropriate¹² 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 appropriate¹² 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 new⁵ multi-slip facility, residential dock facility, shoreline stabilization, or dredging, and does not provide new⁵ access for watercraft or

improve an existing access to allow increased watercraft usage, the determination of “*May affect, not likely to adversely affect*” is appropriate¹² 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 appropriate¹¹ 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 (*Juncus 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 any 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.

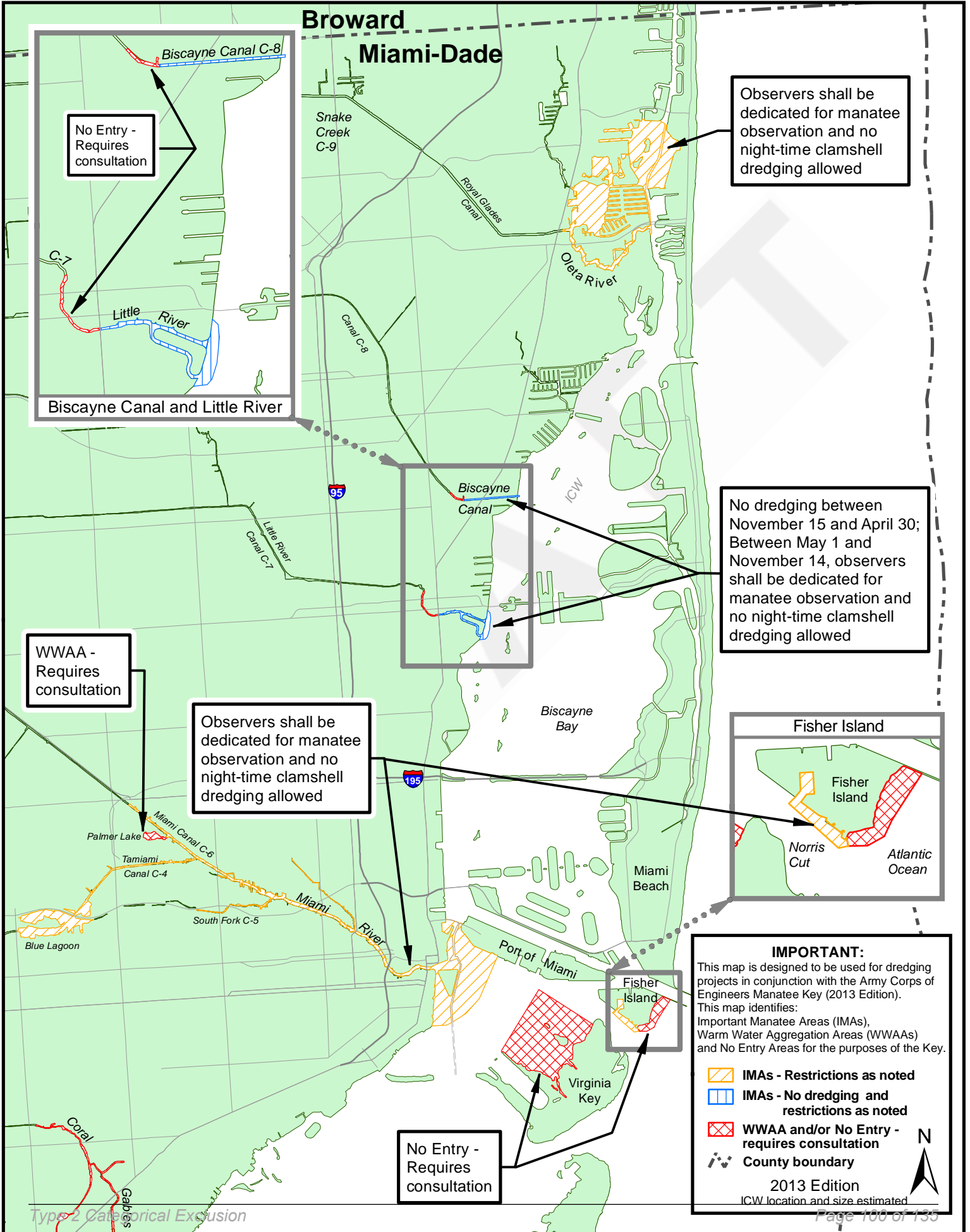
Submerged aquatic vegetation (SAV) – Rooted, submerged, aquatic plants such as, but not limited to, shoal grass (*Halodule wrightii*), paddle grass (*Halophila decipiens*), star grass (*Halophila engelmanni*), Johnson's seagrass (*Halophila johnsonii*), sago pondweed (*Potamogeton pectinatus*), clasping-leaved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

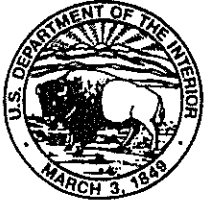
Warm Water Aggregation Areas (WWAAs) and No Entry Areas – Areas within certain counties where increased densities of manatees occur due to the proximity of artificial or natural warm water discharges or springs and are considered necessary for survival. Some of these areas may be federally-designated 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 - North





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



Donnie Kinard

Page 2

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 determination¹. This Key is subject to revisitation as the Corps and Service deem necessary.

The Key is as follows:

- A. Project within 0.76 km (0.47 mile)² of an active colony site³ "may affect"⁴
 - Project impacts Suitable Foraging Habitat (SFH)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”.
- 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 hydroperiod⁷ 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 guidance⁸..... *NLAA*¹”
- Project not as above..... “*may affect*⁴”
- E. Project provides SFH compensation in accordance with the CWA section 404(b)(1) guidelines and is not contrary to the HMG; habitat compensation is within the appropriate CFA or within the service area of a Service-approved mitigation bank; and habitat compensation replaces foraging value, consisting of wetland enhancement or restoration matching the hydroperiod⁷ of the wetlands affected, and provides foraging value similar

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.

Donnie Kinard

Page 5

to, or higher than, that of impacted wetlands. See Enclosure 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance⁸ "NLAA¹"

Project does not satisfy these elements "may affect⁴"

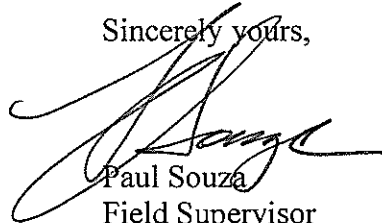
This Key does not apply to Comprehensive Everglades Restoration Plan projects, as they will require project-specific consultations with the Service.

Monitoring and Reporting Effects

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

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

Sincerely yours,



Paul Souza
Field Supervisor
South Florida Ecological Services Office

Enclosures

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

Donnie Kinard

Page 6

LITERATURE CITED

- Ceilley, D.W. and S.A. Bortone. 2000. A survey of freshwater fishes in the hydric flatwoods of flint pen strand, Lee County, Florida. Proceedings of the 27th Annual Conference on Ecosystems Restoration and Creation, 70-91. Hillsborough Community College; Hillsborough County, Florida.
- Flemming, D.M., W.F. Wolff, and D.L. DeAngelis. 1994. Importance of landscape heterogeneity to wood storks. Florida Everglades Management 18: 743-757.
- Kahl, M.P., Jr. 1964. Food ecology of the wood stork (*Mycteria americana*) in Florida. Ecological Monographs 34:97-117.
- Ogden, J.C. 1991. Nesting by wood storks in natural, altered, and artificial wetlands in central and northern Florida. Colonial Waterbirds 14:39-45.
- Ogden, J.C., J.A. Kushlan, and J.T. Tilmant. 1976. Prey selectivity by the wood stork. Condor 78(3):324-330.
- Ogden, J.C. 1996. Wood Stork in J.A. Rodgers, H. Kale II, and H.T. Smith, eds. Rare and endangered biota of Florida. University Press of Florida; Gainesville, Florida.
- Rodgers, J.A. Jr., A.S. Wenner, and S.T. Schwikert. 1987. Population dynamics of wood storks in northern and central Florida, USA. Colonial Waterbirds 10:151-156.
- Rodgers, J.A., Jr., S.T. Schwikert, and A. Shapiro-Wenner. 1996. Nesting habitat of wood storks in north and central Florida, USA. Colonial Waterbirds 19:1-21.
- U.S. Fish and Wildlife Service. 1990. Habitat management guidelines for the wood stork in the southeast region. Prepared by John C. Ogden for the Southeast Region U.S. Fish and Wildlife Service; Atlanta, Georgia.
- U.S. Fish and Wildlife Service. 1999. South Florida multi-species recovery plan. Fish and Wildlife Service; Atlanta, Georgia. Available from: <http://verobeach.fws.gov/Programs/Recovery/vbms5.html>.

HABITAT MANAGEMENT GUIDELINES FOR THE WOOD STORK IN THE SOUTHEAST REGION



**HABITAT MANAGEMENT GUIDELINES
FOR THE WOOD STORK IN THE
SOUTHEAST REGION**

Prepared by

John C. Ogden
Acting Program Manager
Wildlife Research
Everglades National Park

for the

Southeast Region
U.S. Fish and Wildlife Service

Cover design by
Florida Power & Light Company
Miami, Florida

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 maintain 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 degradation 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 out 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.**

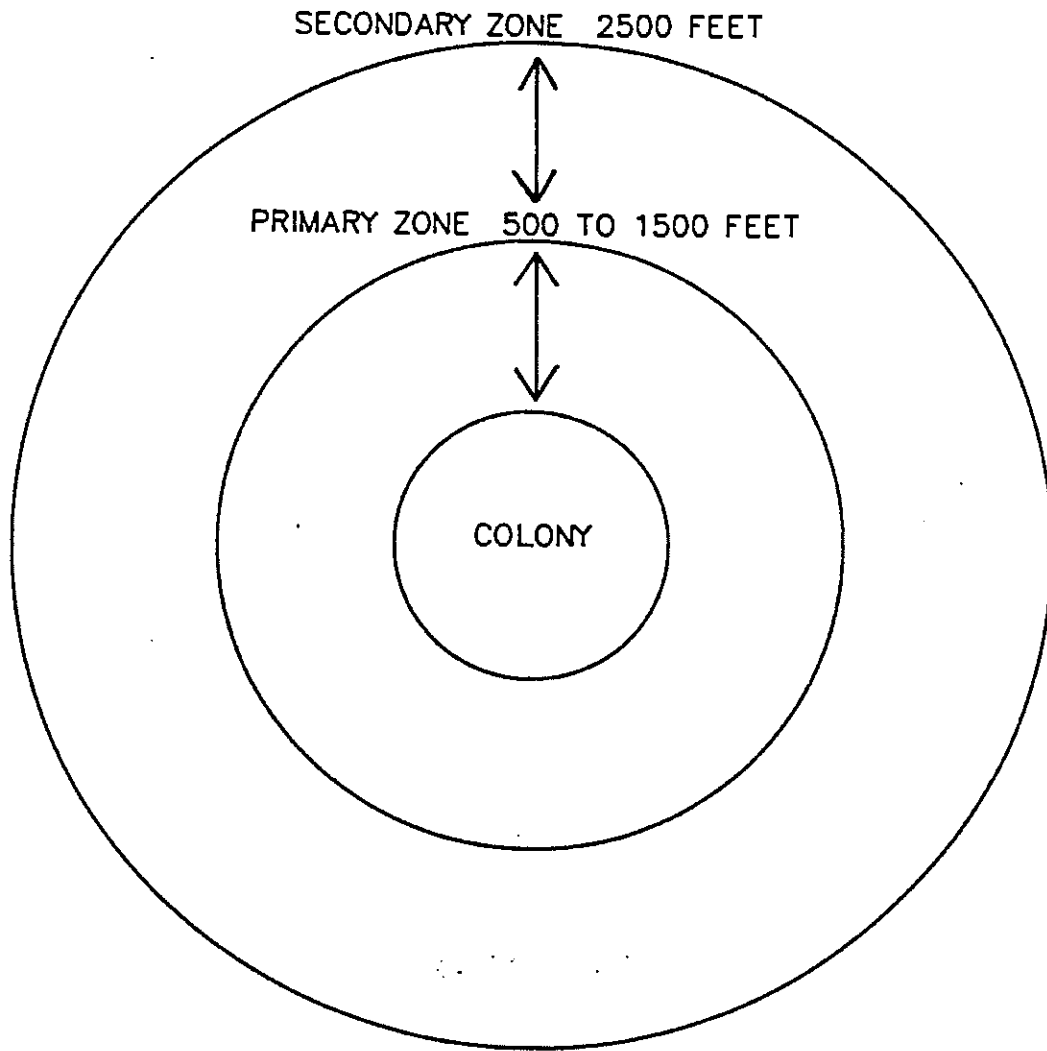
To the maximum extent possible, feeding sites should be protected by adherence to the following protection zones and guidelines:

- 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



- (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 transmission 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; "

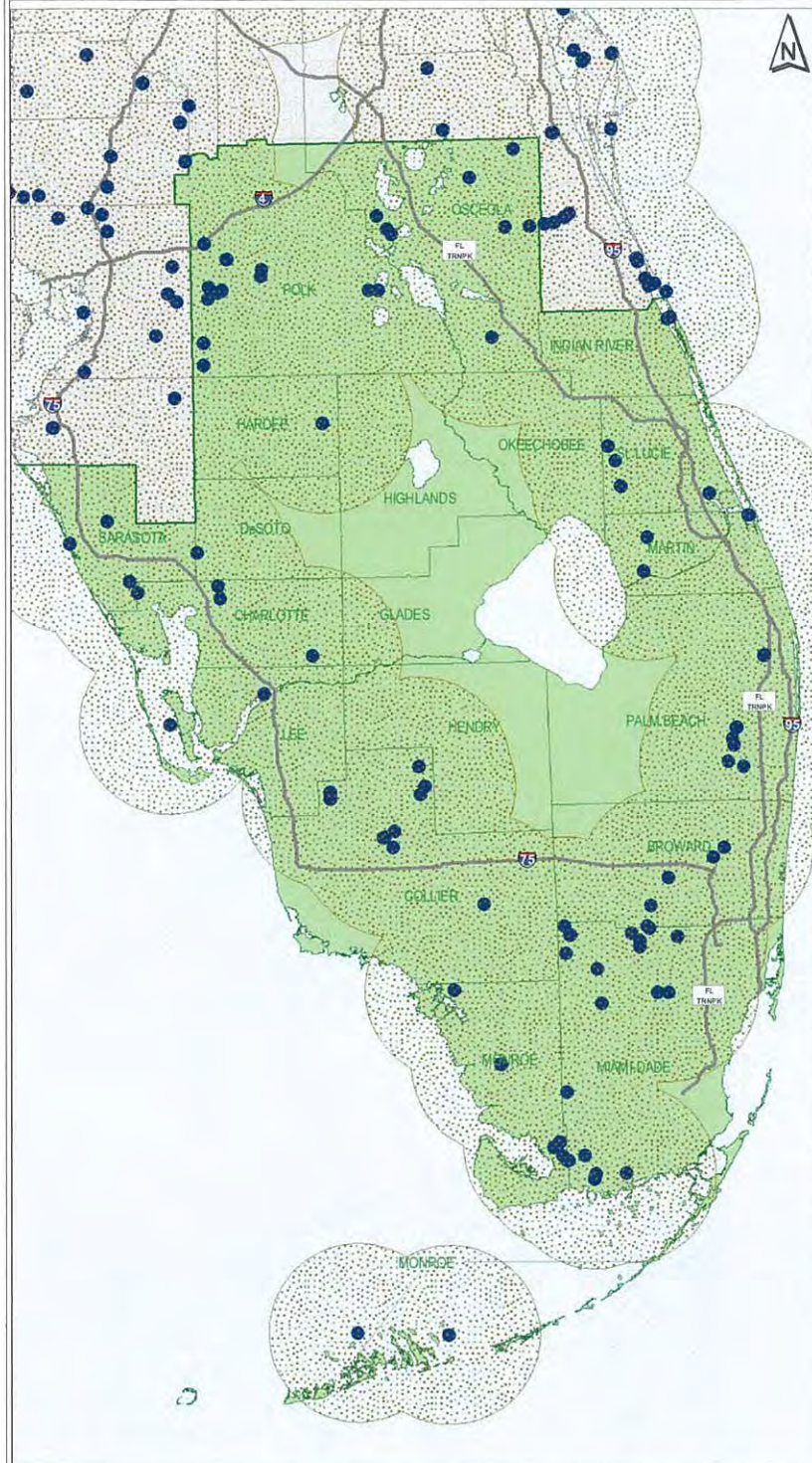
Section 27-3-22 states, in part, "It shall be unlawful for any person to hunt, trap, take, possess, sell, purchase, ship, or transport any hawk, eagle, owl, or any other bird or any part, nest, or egg thereof..."

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

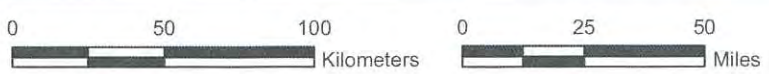


**Nesting Colonies
Core Foraging Areas**
1999 to 2005

- Colony Location
- Core Foraging Area
- South Florida Service Area



Produced by:
South Florida Ecological Services Office
<http://verobeach.fws.gov>
Phone: 772.562.3909



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/m²) 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 Dalrymple'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 ($12 \times 132 = 1,584$). 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 ($12 \times 132 = 1,584$). The resultant is 0.6389 or 64 percent ($11 \times 92 = 1012 / 1584 \times 100 = 63.89$).

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 than 120 days of the year average ± 4 fish/m²; whereas, those flooded for more than 340 days of the year average ± 25 fish/m² (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 hydroperiod. 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/m² 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/m². In these studies, the data was provided in g/m² dry-weight and was converted to g/m² 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/m² 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/m² and to be composed of 25 fish/m². 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/m², with an average weight of 0.26 grams per fish, the biomass of a Class 3 hydroperiod would be 2.3 grams/m² (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	<i>Centrarchidae</i>	14	44
Yellow bullhead	<i>Italurus natalis</i>	2	12
Marsh killifish	<i>Fundulus confluentus</i>	18	11
Flagfish	<i>Jordenella floridae</i>	32	7
Sailfin molly	<i>Poecilia latipinna</i>	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).

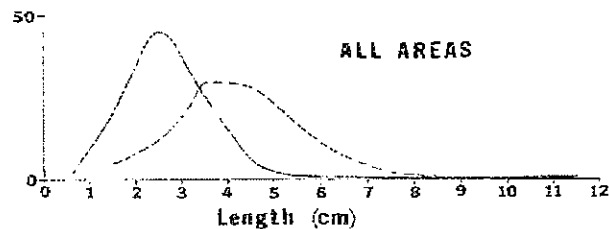


FIGURE 4. Length frequency distribution of fish available to and consumed by Wood Storks in different habitats.

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/m² 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' ichthyofauna 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/m² 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/m², 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/m² sample. Using this approach summed over all species in long hydroperiod wetlands, only 3.685 g/m² of the 6.5 g/m² 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/m² 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/m² 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/m² for long hydroperiod wetlands ($3.685 + 2.97 = 6.655 / 2 = 3.33$). This proportion of available fish prey of a suitable size ($3.33 \text{ g/m}^2 / 6.5 \text{ g/m}^2 = 0.51$ 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/m², adjusted by 51 percent for appropriate size and species composition, provides an available biomass of 1.196 grams/m². 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 hydroperiod wetlands. The Service is aware of these questions and is examining alternative ways to assess these concerns. However, until further 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 [$0.25 \times 0.325 = 0.08$]) (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 $(5 * 4,047 * 0.39 \text{ (Table 10)} * 0.37 \text{ (Table 3)}) = 2,919.9 \text{ grams or } 2.92 \text{ kg}$

In the example provided, the 5 acres of wetlands, converted to square-meters (1 acre = 4,047 m²) would provide 2.9 kg of biomass ($5 * 4,047 * 0.39 \text{ (Table 10)} * 0.37 \text{ (Table 3)} = 2,919.9 \text{ grams or } 2.9 \text{ kg}$), 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: $(3 * 4,047 * 0.39 \text{ (Table 10)} * 0.37 \text{ (Table 3)}) = 1,751.95 \text{ grams or } 1.75 \text{ kg}$

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

Net increase: $4.74 \text{ kg} - 1.75 \text{ kg} = 2.98 \text{ kg Compensation Site}$

Project Site Balance $2.98 \text{ kg} - 2.92 \text{ kg} = 0.07 \text{ kg}$

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 ($3 * 4,047 * 0.39 \text{ (Table 10)} * 0.37 \text{ (Table 3)} = 1,751.95 \text{ grams or } 1.75 \text{ kg}$) and following restoration provides 4.74 kg ($3 * 4,047 * 0.39 \text{ (Table 10)} * 1 \text{ (Table 3)} = 4,734.99 \text{ grams or } 4.74 \text{ kg}$), 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/m² instead of a class 3 hydroperiod with a 0.39 grams/m² [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.

LITERATURE CITED

- Browder, J.S. 1984. Wood stork feeding areas in southwest Florida. *Florida Field Naturalist* 12:81-96.
- Carlson, J.E., and M.J. Duever. 1979. Seasonal fish population fluctuation in south Florida swamps. *Proceedings of Annual Conference of Southeastern Association of Fish and Wildlife Agencies* 31:603-611.
- Chick, J. H., C. R. Ruetz III, and J. C. Trexler. 2004. Spatial Scale and abundance patterns of large fish communities in freshwater marshes of the Florida Everglades. *Wetlands*. 24 (3):652-644. *American Journal of Fisheries Management* 19: 957-967.
- Chick, J. H., S. Coyns, and J. C. Trexler. 1999. Effectiveness of airboat electrofishing for sampling fishes in shallow, vegetated habitats. *North American Journal of Fisheries Management* 19: 957-967.
- Coulter, M.C. 1987. Foraging and breeding ecology of wood storks in east-central Georgia. Pages 21-27 in *Proceedings of the Third Southeastern Nongame and Endangered Wildlife Symposium* (R.R. Odom, K.A. Riddleberger, and J.C. Ozier, eds.). Georgia Department of Natural Resources, Atlanta, Georgia.
- Coulter, M.C., and A.L. Bryan, Jr. 1993. Foraging ecology of wood storks (*Mycteria americana*) in east-central Georgia: I. Characteristics of foraging sites. *Colonial Waterbirds* 16(1):59-70.
- Coulter, M.C., J.A. Rodgers, J.C. Ogden, and F.C. Depkin. 1999. Wood stork (*Mycteria americana*). *The Birds of North America*, Issue No. 409 (A. Poole, ed.). Cornell Lab of Ornithology, Ithaca, New York.
- Fleming, D.M., W.F. Wolff, and D.L. DeAngelis. 1994. Importance of landscape heterogeneity to wood storks in Florida Everglades. *Environmental Management* 18(5):743-757.
- Gawlik, D.E. 2002. The effects of prey availability on the numerical response of wading birds. *Ecological Monographs* 72(3):329-346.
- Kushlan, J.A., S.A. Voorhees, W.F. Loftus, and P.C. Frohring. 1986. Length, mass and caloric relationships of Everglades animals. *Florida Scientist* 49(2):65-79.
- Loftus, W.F., and A.M. Eklund. 1994. Long-term dynamics of an Everglades small-fish assemblage. Pages 461-484 in *Everglades: the ecosystem and its restoration* (S.M. Davis and J.C. Ogden, eds.). St. Lucie Press, Delray, Florida.
- O'Hare, N.K., and G.H. Dalrymple. 1997. Wildlife in southern Everglades invaded by melaleuca (*Melaleuca quinquenervia*). *Bulletin of the Florida Museum of Natural History* 41(1):1-68. University of Florida, Gainesville, Florida.

- Ogden, J.C., J.A. Kushlan, and J.T. Tilmant. 1976. Prey selectivity by the wood stork. *The Condor* 78(3):324-330.
- Ogden, J.C., J.A. Kushlan, and J.T. Tilmant. 1978. The food habits and nesting success of wood storks in Everglades National Park in 1974. U.S. Department of the Interior, National Park Service, Natural Resources Report No. 16.
- Trexler, J. C., and C. W. Goss. 2009. Aquatic Fauna as Indicators for Everglades Restoration: Applying Dynamic Targets in Assessments. *Ecological Indicators*. Vol 9: 108-119.
- Trexler, J.C., W.F. Loftus, F. Jordan, J.H. Chick, K.L. Kandl, T.C. McElroy, and O.L. Bass. 2002. Ecological scale and its implications for freshwater fishes in the Florida Everglades. Pages 153-182 in *The Everglades, Florida Bay, and Coral Reefs of the Florida Keys: An ecosystem sourcebook* (J.W. Porter and K.G. Porter, eds.). CRC Press, Boca Raton, Florida.
- Turner, A., and J. C. Trexler. 1997. Sampling invertebrates from the Florida Everglades: a comparison of alternative methods. *Journal of the North American Benthological Society* 16:694-709
- Turner, A.W., J.C. Trexler, C.F. Jordan, S.J. Slack, P. Geddes, J.H. Chick, and W.F. Loftus. 1999. Targeting ecosystem features for conservation: standing crops in the Florida Everglades. *Conservation Biology* 13(4):898-911.
- U.S. Fish and Wildlife Service. 2006. August 31, 2006, Lake Belt Mining Region of Miami-Dade County Biological Opinion. South Florida Ecological Services Office; Vero Beach, Florida
- U.S. Fish and Wildlife Service. 2009. February 12, 2009, Fort Myers Mine No 2 Biological Opinion. South Florida Ecological Services Office, Vero Beach, Florida.
<http://www.fws.gov/filedownloads/ftp%5verobeach>



ATLANTIC ISLE AT WEST OF SR A1A (BRIDGE# 874218) / 430029-2-21-01

Biscayne Bay



Oceania Park

Collins Ave
Collins Ave

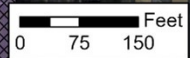
Atlantic Isle

Atlantic Isle

Atlantic Isle

Intracoastal Park

Poinciana Dr



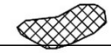
Florida Department of Transportation
District VI
Type I Categorical Exclusion
1000 NW 111th Avenue
Miami, FL 33172-5800

Aquatic Preserve and OFW Map

FM 430029-2-22-01
Atlantic Isle Bridge No. 874218 West of SR-A1A
Miami-Dade County, FL
Section: 14, Township: 52S, Range: 42E



Study Area



Outstanding Florida Water (OFW)



Page 135 of 135
Biscayne Bay Aquatic Preserve