United States Department of the Interior

FISH AND WILDLIFE SERVICE
Deepwater Horizon Gulf Restoration Office
341 Greeno Road North, Suite A
Fairhope, Alabama 36532

In Reply Refer To:
FWS/R4/DH NRDAR

Memorandum May 13, 2024

To: Memorandum to File

From: Michael Barron, Deepwater Horizon Gulf Restoration Office

Subject: Regulatory Compliance Determinations for the Alabama Trustee Implementation Group's Restoration Project: Lower Perdido Island Restoration

Under the Endangered Species Act (ESA) Section 7(a)(2), each Federal agency shall ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species, or destroy/adversely modify designated critical habitat. If a Federal agency determines that a Federal action will have no effect on ESA-listed species or designated critical habitat, then the Federal agency is not required to consult with the US Fish and Wildlife Service (USFWS) for purposes of ESA. This memo does not include any information or effects determinations for protected species under the jurisdiction of the National Marine Fisheries Service.

We have reviewed the project materials provided by the Alabama Trustee Implementation Group for the project: Lower Perdido Island Restoration. Compliance determinations are indicated in the chart below.

Project Title	Endangered Species Act	Marine Mammal Protection Act	Bald and Golden Eagle Protection Act	Migratory Bird Treaty Act	Coastal Barrier Resources Act
Lower Perdido Island Restoration	CEC	CEC	NT	NT	NA

NA – Not Applicable; NT – No Take; CEC – Covered by Existing Consultation

Should any project be modified in a way that could adversely impact species or habitats, this determination will be reevaluated as appropriate.

If you have questions or concerns regarding this action, please contact Michael Barron, Fish and Wildlife Biologist, at 251-421-7030 or michael_barron@fws.gov.

Attachments (2)

Attachment 1
Biological Evaluation Form
Deepwater Horizon Oil Spill Restoration
U.S. Fish and Wildlife Service & National Marine Fisheries Service

This Biological Evaluation (BE) form will be filled out by the Implementing Trustee and used by the U. S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) regulatory agencies. The form will provide information to initiate informal Section 7 consultations under the Endangered Species Act (ESA) and may be used to document a No Effect determination or to initiate pre-consultation technical assistance.

It is recommended that this form also be completed to inform and evaluate additional needs for compliance with the following authorities: Migratory Bird Treaty Act (MBTA), Marine Mammal Protection Act (MMPA), Coastal Barrier
Resources Act (CBRA), and Bald and Golden Eagle Protection Act (BGEPA). Section 106 of the National Historic Preservation Act (NHPA) review can be started by submitting this form to the online NHPA Submission Portal (https://www.fws.gov/doid/web/compliance-reviews).

Further information may be required beyond what is captured on this form. Note: if you need additional space for writing, please attach pages as needed.

For assistance, please contact the compliance liaisons
U.S Fish and Wildlife Service: Michael Barron at michael_barron@fws.gov
National Marine Fisheries Service (NMFS): Christy Fellas at christina.fellas@noaa.gov

A. Project Identification

Federal Action Agency (one or more):

USFWS ☐ NOAA ☒ Environmental Protection Agency (EPA) ☐ U.S. Department of Agriculture (USDA) ☐ Implementing Trustee(s): NOAA

Contact Name: Stella Wilson Phone: (850) 332-4169 Email: estelle.wilson@noaa.gov
Project Name: Lower Perdido Island Restoration
DIVER ID# Click to enter text Trustee Implementation Group (TIG): AL TIG
Restoration Plan # Click here to enter text
Name of Person Completing this Form: Katie Baltzer, Laurie Rounds Name of Project Lead: Stella Wilson.
Date Form Completed: April 25, 2024
Date Form Updated: Click here to enter text.

B. Project Phase

Please choose the box which best describes the project status, as proposed in this BE form, check

ALL that apply:

Construction/Implementation ☒ Planning/Conceptual ☐ Engineering & Design ☐

If "Engineering & Design" was selected, please describe the level of design that has been completed and is available for review:

NA

C. Project Location

I. State and County/Parish of action area

Baldwin County, AL

II. Latitude/Longitude for action area (Decimal degrees and datum [e.g., 27.71622°N, 80.25174°W NAD83)

[online conversion: https://www.fcc.gov/encyclopedia/degrees-minutes-seconds-tofrom-decimal-degrees]

Robinson Island: Latitude 30.285587°, Longitude -87.551137°

Walker Island: 30°17'14.5"N, 87°32'25.0"W

III. Maps, Drawings, and GIS Data

Please insert any maps, aerial photographs, or design drawings here or attach to the end of this BE form. GIS files are required and should be added to the same Sharepoint folder location as the BE form. Examples of such supporting documentation include, but are not limited to:

- Plan view of design drawings
- Aerial images of project action area and surrounding area, showing state or regional scale
- Map of project area with elements proposed (polygons showing proposed construction elements)
- Map of action area with critical habitat units or sensitive habitats overlayed
- GIS Files to include ARCGIS, KMZ, CAD, or other GIS files are required (WGS 84) for projects with a field component; all files should be polygons and not polylines

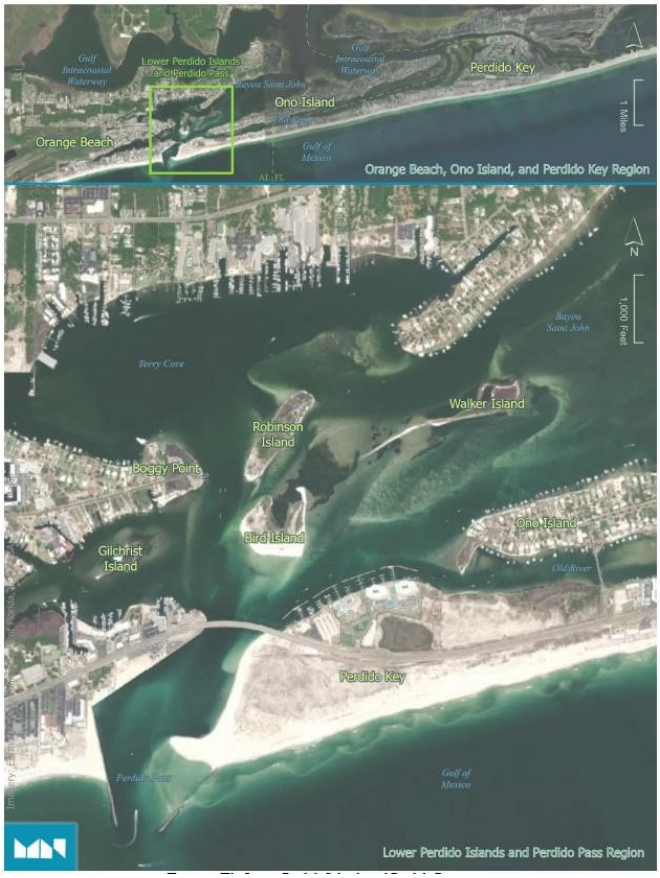


Figure 1. Vicinity map of project area. Restoration work will take place on and around Robinson and Walker Islands.

Figure 2. Project area map showing restoration work at Robinson and Walker Islands and two borrow areas to the north.

See additional maps of project elements and plan view of design drawings at the end of the BE form.

D. Existing Compliance Documentation

National Environmental Policy Act (NEPA) Documents

Are there any **existing** draft or final NEPA analyses (not PDARP/PEIS) that cover all or part of this project?

YES☐ NO☒

Examples:

-TIG Restoration Plan/Environmental Assessment or Environmental Impact Statement (draft or final)

-U.S. Army Corps of Engineers (USACE) programmatic NEPA analysis

-USACE Clean Water Act individual permit for the project

-NEPA analysis provided by a federal agency that gave approval, funding or authorization

A NEPA analysis is currently in progress via the AL TIG Draft Restoration Plan 4, which is expected to be published on June 11, 2024 and finalized in October 2024.

Permits

Have any federal permits been obtained for this project, if so which ones and what is the permit number(s)?

YES☒ NO☐ Permit Number and Type: SAM-2022-00826-JCC, U.S. Army Corps of Engineers

Have any federal permits been applied for but not yet obtained, if so which ones and what is the permit number(s)?

YES☐ NO☒ Permit Number and Type: Click here to enter text.

If yes to any question above, please provide details in the text box (i.e. link to/name of the NEPA document, year, lead federal agency, Point of Contact, copy of the permit or permit application, etc.). This is needed to check for consistency of the project scope across different sources and to facilitate the NEPA analysis. If you do not have a link, email the documents to the TIG representative for the Trustee designated as lead federal agency for the restoration plan. Any documentation or information provided will help move the project forward.

Corps permit
Permit Number: SAM-2022-00826-JCC
Name of Permittee: City of Orange Beach, Attention: Mr. Phillip West and Ms. Nicole Woerner Date of Issuance: February 20, 2024
Lead Federal Agency: U.S. Army Corps of Engineers, Mobile District
Point of Contact: Jessica Comeaux, TREC Team Lead/Mobile District Liaison, Jessica.C.Comeaux@usace.army.mil

Permit Modification: modification to SAM-2022-00826-JCC
Name of Permittee: City of Orange Beach, Attention: Mr. Phillip West and Ms. Nicole Woerner
Date submitted: April 2, 2024 (currently in review)
Lead Federal Agency: U.S. Army Corps of Engineers, Mobile District
Point of Contact: Jessica Comeaux, TREC Team Lead/Mobile District Liaison, Jessica.C.Comeaux@usace.army.mil Description of Modification:

Requested changes to area/volume for Corps permit modification currently under review. The changes in the table below account for additional material to be dredged, a small increase in placement for the revetment and an increase to marsh creation to complete the project goals described in the original permit for Walker Island and Robinson Island remain the same.

Feature	Metric (Unit)	Permitted Design	Permit Modification	Difference
Borrow Area A	Area (AC)	5	9	4
	Volume (CY)	56,600	92,700	36,100

Borrow Area B	Area (AC)	17	20	3
	Volume (CY)	251,700	307,000	55,300
Robinson Island Revetment	Area (AC)	0.11	0.14	0.03
	Volume (CY)	925	1,370	445
Robinson Island Marsh Creation (adjacent to revetment)	Area (AC) Volume (CY)	0.09 8,900	0.12 11,900	0.03 3,000

NEPA analysis

The NEPA analysis for this restoration project will be included in the draft AL TIG RP4 and a NOAA NEPA analysis (Robinson Island portion). The draft AL TIG RP4 is expected to be published in June 2024.

E. Description of Action Area

Provide a description of the existing environment (e.g., topography, vegetation type, soil type, substrate type, water quality, water depth, tidal/riverine/estuarine, hydrology and drainage patterns, current flow and direction), and land uses (e.g., public, residential, commercial, industrial, agricultural). Describe all areas that may be directly or indirectly affected by the action. If critical habitat (CH) is not designated in the area, then describe any suitable habitat in the area.

a. Waterbody & Wetlands

If applicable. Name the body of water, including wetlands (freshwater or estuarine), on which the project is located. If applicable, please describe water quality, depth, hydrology, current flow, and direction of flow.

The project area includes the Lower Perdido Islands and surrounding waters within Perdido Bay. Perdido Bay is a generally shallow, estuarine bay that is bisected by the Alabama-Florida state line and is approximately 28 square miles in area. The bay primarily drains freshwater from the Perdido River and empties into the Gulf of Mexico through Perdido Pass. The Perdido Pass drives the local currents through tidal exchange and is located just south of the project area. The habitats of the estuarine system consist of emergent marsh, unconsolidated sandy shorelines, and forested/scrub-shrub uplands, as well as adjacent submerged aquatic vegetation (SAV), soft bottom benthic, and open water habitat. Data collected at the site show that the tidal range for the project site ranged from a minimum of -0.33 ft North American Vertical Datum of 1988 (NAVD88) to a maximum of +2.62 ft NAVD88. Excluding one large wave event which occurred during the sampling period, wave conditions were generally below 3.3 ft.

The Mobile District USACE maintains the Perdido Pass Navigation Project, just south of the project site via dredging of the authorized channels. USACE dredging records indicate that

dredged sediment is largely composed of medium grain sand with a small quantity of fine sands and silt (USACE, 2019).

Two borrow areas for dredging are the shoal to the north of Robinson Island and the shoal to the northeast of Walker Island. Use of sediment from within the littoral system for placement back into the same system would result in an internal redistribution of sediment. This approach does not result in a deficit to the natural sediment budget. The sediment sources are referred to as Borrow Area A and Borrow Area B (Figure 2). Geotechnical investigations were performed by Geotechnical Engineering Testing, Inc. (GET) in October 2023 for the two borrow areas. Two borings in Borrow area A were predominantly composed of clayey materials below a boring depth of approximately 11 ft. A thin layer (less than 10 ft) of sandy material topped the clay in these borings. All other borings were found to be predominantly sandy material with some fines present. Water depths at boring locations ranged from 1.7' to 8.6' adjusted to EL. = 0'.

Emergent marsh habitats on Walker and Robinson islands include salt marsh plants that are intertidal and dominated by *Spartina* and *Juncus* species. These marsh habitats are extremely productive and provide nursery habitat for fish and crustaceans, as well as foraging habitat for a variety of birds including herons, egrets, rails, and willets. The marsh area on Walker Island has been relatively stable over the past 20 years, with some declines in acreage in the past 5 years, likely due to human disturbance and significant storm events that inundated the island.

Estuarine soft bottom habitat is found within the project area. Soft bottom habitats support a diverse assemblage of organisms living within or on the sediment. Several managed species utilize estuarine soft bottom habitat in the project area for burrowing and foraging.

Water column habitat is also found extensively within the project area. Water column habitat supports photosynthesizing organisms such as phytoplankton. Currents and tides are important driving factors for movement of organisms, organic matter, and nutrients within this habitat zone.

Does the project area include a river or estuary?

YES☒ NO☐

If yes, please approximate the navigable distance from the project location to the marine environment.

The project would be constructed in water located in Perdido Bay on Walker Island and Robinson Island. The Perdido Bay connects with the Gulf of Mexico by way of Perdido Pass.

b. Existing Structures

If applicable. Describe the current and historical structures found in the action area (e.g., buildings, parking lots, docks, seawalls, groynes, jetties, marina). If known, please provide the years of construction.

A timber retaining wall was constructed in 2007 on the northeast side of Robinson Island and the structure remains in place to this day. A small rock breakwater was installed on Robinson Island in 2013. Based on the historical aerial imagery it is estimated that the shoreline eroded approximately 65 ft on the northeast side of the island before installation of the retaining wall in 2007 and approximately 110 ft on the north side of the island before installation of the rock riprap breakwater in 2013.

No land cover or development exists within the project area, but the adjacent bay shorelines are heavily developed for residential and commercial use. The Perdido area is known for tourism and recreational value and attracts a great number of visitors each year. The frequent use of the project area by large numbers of visitors has contributed to its decline and erosion, as has severe storm activity.

c. Seagrasses & Other Marine Vegetation

If applicable. Describe seagrasses found in action area. If a benthic survey was done, provide the date it was completed and a copy of the report. Estimate the species area of coverage and density. Attach a separate map showing the location of the seagrasses in the action area.

The habitats of the estuarine system consist of emergent marsh, unconsolidated sandy shorelines, and forested/scrubshrub uplands, as well as adjacent submerged aquatic vegetation (SAV), soft bottom benthic, and open water habitat. Submerged habitats in the Lower Perdido Islands area consist primarily of sandy, soft bottoms with SAV beds interspersed. The beds are dominated by shoal grass (*Halodule wrightii*) with some scattered patches of widgeon grass (*Ruppia maritima*). These SAV beds are important nursery habitat for numerous estuarine and marine species providing food and protection from predators (Byron and Heck, 2019). A high volume of recreational activity in the project area has resulted in damage to SAV beds. Boating activity can lead to propeller scars which recover slowly and stress SAV resources. The SAV beds around the Lower Perdido Islands have been monitored for spatial extent for the last 20 years. In 2002, 2009, 2015, and 2019 SAV was surveyed along the entire Alabama coastline as part of a mapping effort for the Mobile Bay National Estuary Program (Figure below) (Barry A. Vittor and Associates, 2004; 2009; 2016; 2020). While
SAV has declined substantially across much of the northern Gulf of Mexico, the Lower Perdido Islands have shown a steady expansion of SAV over time.

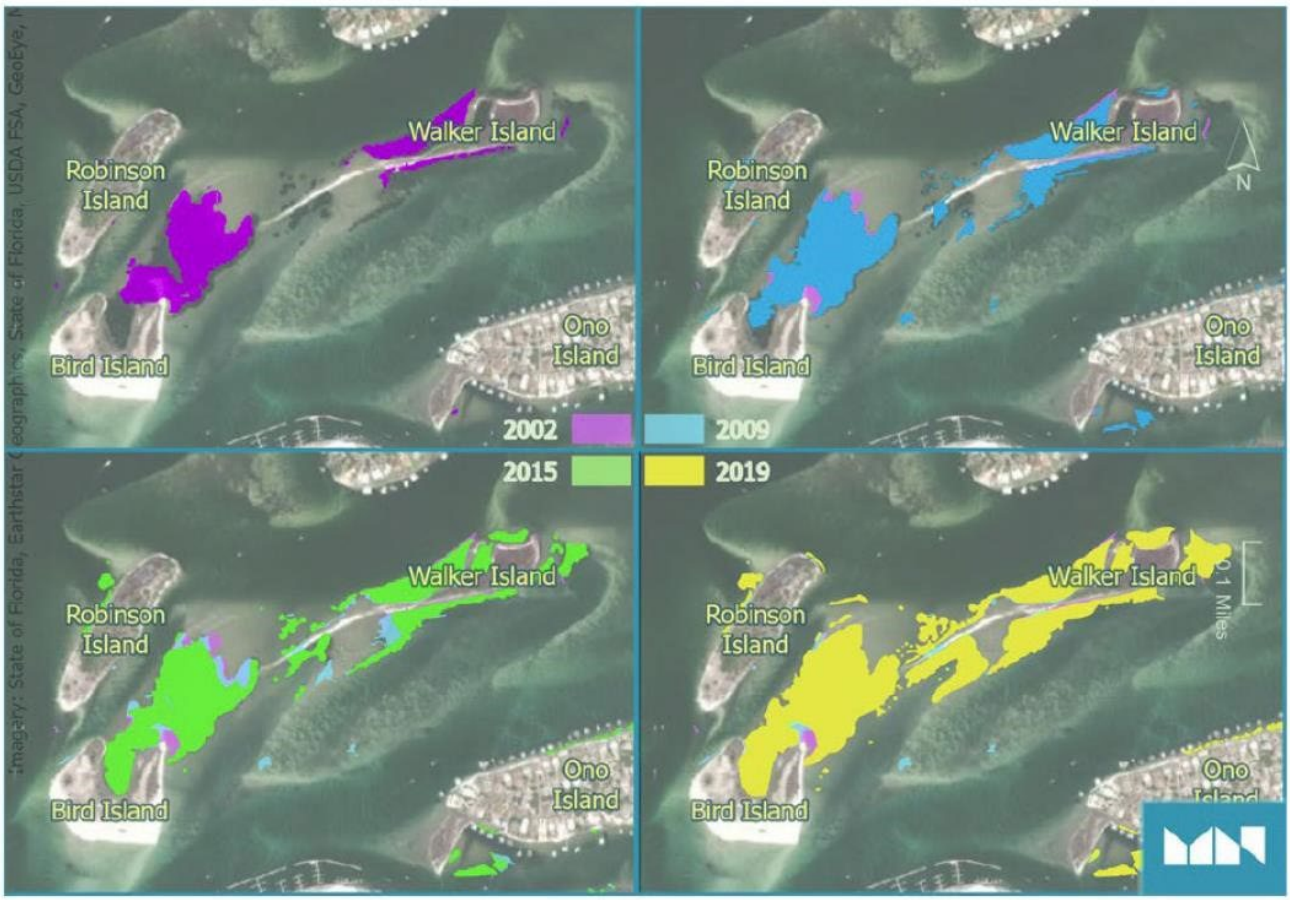


Figure 3: Changes in seagrass coverage around the Lower Perdido Islands from 2002 to 2019 (Source: Barry A. Vittor and Associates, 2004; 2009; 2016; 2020)

On April 18, 2024, scientists from the Dauphin Island Sea Lab (DISL), in consultation with TNC and CSA, Inc. scientists, carried out baseline surveys to document immediate pre-restoration conditions and collect information on the SAV present at the proposed mitigation, donor, and reference sites. Water quality data, depths, sediment types and estimates of areal extent of the mitigation site, as well as the modest amount of SAV present there, indicate that conditions remain appropriate for the transplanting to proceed. In addition, the two reference areas and the donor site remain as described in the 2023 EFH assessment. In-water transects at the donor site showed healthy shoalgrass populations for some 60-70 m offshore of the unvegetated shoreline. Therefore, conditions at the mitigation site remain appropriate for SAV transplantation, as described in the EFH assessment. In addition, the reference and donor sites also remain as described in 2023 and are suitable for the functions described in the EFH assessment.

Updated areal imagery collected in these surveys indicates that impacts to SAV are less than originally described with 0.69 acres of impacted SAV compared to 0.97 acres of impacted SAV as previously estimated. This difference is due to higher resolution imagery allowing for more accurate determination of SAV presence within the areas of impact. While this would reduce the minimum acreage of SAV required to offset impacts to essential fish

habitat from 1.94 acres to 1.38 acres using a 2:1 mitigation ratio, the original extent of 2.09 acres at the mitigation site will be maintained through transplanting activities. Planting an area larger than the minimum requirement will provide a buffer in the event of unforeseen impacts to the mitigation site.

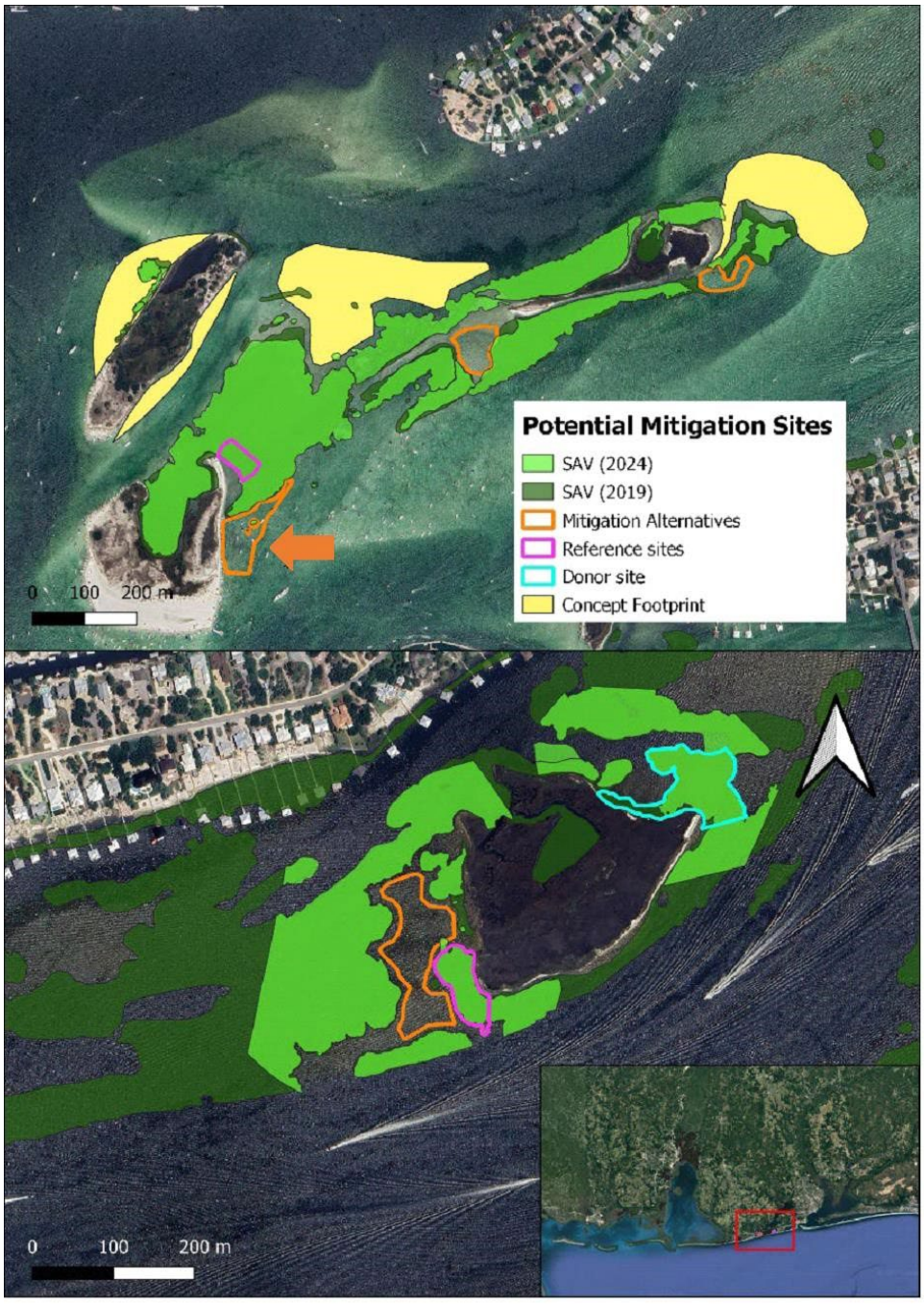


Figure 4: Project location with potential mitigation sites, reference sites, donor site, impacted SAV, and project footprints. Arrow identifies the preferred alternative selected in the EFH Compensatory Mitigation Plan for Submerged Aquatic Vegetation.

d. Mangroves

If applicable. Describe the mangroves found in action area. Indicate the species found (red, black, white), the species area of coverage in square footage and linear footage along project shoreline. Attach a separate map showing the location of the mangroves in the action area.

N/A

e. Corals

If applicable. Describe the corals found in action area. If a benthic survey was done, provide the date it was completed and a copy of the report. Estimate the species area of coverage and density. Attach a separate map showing the location of the corals in the action area.

N/A

f. Uplands

If applicable. Describe the current terrestrial habitat in which the project is located (e.g. pasture, forest, meadows, beach and dune habitats, etc.).

Beach and dune, scrub-shrub, and other upland habitats are located within the project area.

g. Soils and Sediments

If applicable. Indicate topography, soil type, substrate type.

Local sediment sources will be used as borrow areas for placement material in subtidal and intertidal waters. To evaluate sediment sources, historic aerial imagery was reviewed to identify sizeable and consistent deposits of sediment around the Lower Perdido Islands. Sediment sources greater than 35 acres were regarded as sizeable and consistent sources were those that have been visibly apparent for 20+ years. Two borrow areas are permitted at the locations indicated in Figure 2 and drawings at the end of this form.

The two borrow areas will be used to obtain approximately 399,700 cubic yards of material for construction. Borrow area A (9 acres) will be dredged to an elevation of -11 feet NAVD88 and Borrow Area B (20 acres) will be dredged to an elevation of -15 feet NADV88. Geotechnical investigations were performed by Geotechnical Engineering Testing, Inc. (GET) in October 2023. Geotechnical investigations were used to evaluate subsurface soil conditions in the borrow areas to inform the design of the borrow areas and placement areas. A total of ten (10) soil borings were collected in the borrow areas. The soil borings were drilled to depths of approximately 16 to 45 feet below the existing bottom surface. Four (4) soil test borings were completed in Borrow Area A (B-1 through B-4) and six (6) were completed in Borrow Area B (B-5 through B-10). Representative samples from the soil borings were collected for laboratory analysis. Classification tests were performed to determine the soil properties including index properties and grain size. Borings B-1 and B-2 were predominantly composed of clayey materials below a boring depth of approximately 11 ft. A thin layer (less than 10 ft) of sandy material topped the clay in these borings. All other borings were found to be predominantly sandy material with some fines present.

h. Land Use

If applicable. Indicate existing or previous land use activities (agriculture, dredge disposal, etc).

Land use within the project area consists primarily of recreational activities.

i. Marine Mammals

Please select the following marine mammals that could be present within the project area:

Dolphins YES☒ NO☐
Whales YES☐ NO☒
Manatees YES☒ NO☐

If applicable. Indicate and describe the species found in the action area. Use NMFS' Stock Assessment Reports for more information, see http://www.nmfs.noaa.gov/pr/sars/region.htm

Common bottlenose dolphins are distributed throughout the bays, sounds and estuaries of the Gulf of Mexico. The project area is in the vicinity of the Perdido Bay stock of bottlenose dolphins. Therefore, marine mammals could be present in the project area.

West Indian manatees can be found in coastal and riverine areas of North America. They are found in open marine waters, bays, and rivers with submerged aquatic beds or floating vegetation. In Florida alone, there are four relatively distinct regional management units. Perdido Bay falls within the Northwest unit. West Indian manatees could be present in the action area.

F. Project Description

I. *Describe the Proposed Action/Project Objectives: What are you trying to accomplish and how with this project? Describe in detail the construction equipment and methods** needed; long term vs. short term impacts; duration of short term impacts; dust, erosion, and sedimentation controls; restoration areas; if the project is growth-inducing or facilitates growth; whether the project is part of a larger project or plan; and what permits will need to be obtained.*

Attach a separate map showing project footprint, avoidance areas, construction accesses, staging/laydown areas.

***If construction involves overwater structures, pilings and sheetpiles, boat slips, boat ramps, shoreline armoring, dredging, blasting, artificial reefs or fishery activities, list the method here, but complete the next section(s) in detail.*

The purpose of the Lower Perdido Islands Restoration Project is to support conservation and restoration of valuable coastal habitats in the Lower Perdido Bay area. The project is being designed to reduce erosion of these habitats, restore habitat, and improve resilience of the Lower Perdido Islands and the surrounding community. The three major project components are 1) Walker Island West, 2) Walker Island East, and 3) Robinson Island. Proposed habitat types for

restoration include marsh, beach, dune, scrub shrub, and upland coastal habitat (see maps of project elements at the end of this form). Key project features include obtaining local sediment for material placement to enhance, restore, or create coastal habitat within the Lower Perdido system using local sediment borrow areas, planting of select habitat types, and the enhancement of an existing revetment on the north side of Robinson Island using rip rap. A planting plan was developed to support restoration following the placement of fill on Robinson and Walker Islands. Around 95,000 total plants are proposed to be planted after creation of the new coastal habitats on the project islands. A mitigation plan has been approved by NMFS for compensatory mitigation, monitoring, and performance standards necessary to offset the impacts of the Lower Perdido Islands Restoration Project on submerged aquatic vegetation (SAV) beds near Robinson and Walker Islands in Perdido Bay, Alabama.

The objective of the mitigation is to provide persistent and sufficient compensation for the unavoidable impacts to an estimated 0.97 acres of SAV from the proposed restoration activities. A minimum of 1.94 acres of SAV mitigation is required to offset impacts to essential fish habitat (EFH) using a 2:1 mitigation ratio. Transplantation of SAV units from the impact site to the mitigation site will occur within the recognized season of SAV growth (June – September) before contractor mobilization. SAV to be transplanted to the mitigation site includes shoal grass (*Halodule wrightii*) and widgeon grass *(Ruppia maritima*). The SAV will be excavated as sods (~ 0.20 × 0.20 m) down to a depth that preserves collection of the rhizome mat (15-20 cm; to be determined upon inspection). Sods will be transported in trays to the mitigation site and trays will be placed on the seafloor. Harvested plants will be installed within 12 hours in a uniform manner across the mitigation site and interdigitated among but not within any existing SAV patches. During transport from the impact site to the mitigation site, SAV will be covered with wet (ambient seawater) cloth to prevent desiccation during the short transportation (a proven method) and will be installed into the sediment to their naturally occurring vertical elevation relative to the adjacent sediment surface.

In April 2024, TNC and partners conducted a baseline SAV survey of the project areas. Updated areal imagery collected in these surveys indicated that impacts to SAV are less than originally described with 0.69 acres of impacted SAV compared to 0.97 acres of impacted SAV as previously estimated. However, the original extent of 2.09 acres at the approved mitigation site will be maintained through transplanting activities. Planting an area larger than the minimum requirement will provide a buffer in the event of unforeseen impacts to the mitigation site. Additional information from the April 2024 survey is provided in Section C. Seagrasses and Other Marine Vegetation above.

Two borrow areas will be used to obtain approximately 399,700 cubic yards of material for construction. Borrow area A (9 acres) will be dredged to an elevation of -11 feet NAVD88 and Borrow Area B (20 acres) will be dredged to an elevation of 15 feet NADV88.

The following placement activities will be performed:

1. Walker Island West
   Approximately 73,350 cubic yards of sediment will be placed on and surrounding the west side of Walker Island to create 4 acres of subtidal habitat, a 5-acre scrub-shrub

platform, and a central 1-acre upland platform. The primary drivers of design for the Walker Island West Alternative were to avoid impacts to the abundance of SAV in the general area, cover exposed vegetation roots on the island, and maximize the high elevation habitat generated to support birds and overall longevity. The design includes 4 acres of subtidal habitat, a 5-acre scrub-shrub platform, and a central 1-acre upland platform. The dune system is 5 acres and upland habitat is 1 acre.

The scrub-shrub platform has an elevation of +4 ft NAVD88 and a typical width of 75 ft. In the center of the placement area is the +6 ft NAVD88 elevation upland platform of variable width. A 5:1 slope (horizontal: vertical) was applied above and below water at all transition zones between platforms except for the northern edge of the placement area. The northern edge of the placement area is designed with a 20:1 slope (horizonal: vertical) below the water surface to tie into the existing grade. A more gradual slope was specified in this area to more closely resemble an equilibrated slope and reduce scarping and sediment losses as a result of the currents in the adjacent channel.

Historic aerial imagery indicates the dynamic nature of Walker Island and the variability of the flood shoals that neighbor it. The proposed placement area has naturally fluctuated between an emergent sand island and a submerged tidal flat. As part of this evolution, the area is now home to SAV beds, as described above, which dominate the surrounding water bottoms. The proposed configuration was designed to avoid impacts to those SAV beds while also mimicking a historic footprint that was present before surrounding SAV beds began to thrive. The resulting footprint is a compromise between impacting a limited area of adjacent SAV while maximizing habitat created and prioritizing higher elevation platforms on an island that has seen a historic reduction in suitable bird habitat. While the Walker Island West Alternative is detached from the existing Walker Island, it is intended to serve as an extension of the island and remain prohibited from human use to maximize the environmental value of the created habitat.

The alternative was originally estimated to potentially impact SAV according to a 2019 survey. However, recent surveys in 2024 indicate a small decrease in the potential area of impact. In addition, the model predicted that the alternative would result in minor hydrodynamic sheltering in the area between the fill and Robinson Island which could result in an improved environment for SAV growth. Additionally, placement in this area would physically shield adjacent beds from vessel traffic. To address the impacts to SAV habitat, SAV transplantation will be conducted. A Compensatory Mitigation Plan for SAV along with a SAV Monitoring and Adaptive Management Plan, submitted as part of the Corps permit application, will be used to guide SAV activities and track progress.

2. Walker Island East

Approximately 120,240 cubic yards of sediment will be placed on and surrounding the east side of Walker Island to create 1 acre of subtidal habitat, 1 acre of restored marsh habitat, 8 acres of scrub shrub habitat, and 3 acres of upland habitat. Six inches of material will be used as thin-layer placement (TLP) within the existing marsh to raise the platform elevation in response to erosion of sediment, loss of vegetation, and overall degradation of habitat, which will result in an elevation of approximately +1.5 feet

NAVD88. The scrub-shrub platform will have an elevation of +4 feet NAVD88 and a typical width of 75 ft. In the center of the placement area would be a +6 feet NAVD88 elevation upland platform of variable width. Approximately 10,890 square feet (0.25-acre) of submerged aquatic vegetation (SAV) at Walker Island will be transplanted out of the project footprint in accordance with the approved mitigation plan prior to the placement of fill and placed at an approved location.

The goals of the Walker Island East Alternative are addressing erosion in the existing marsh habitat, avoiding impacts to the surrounding SAV, and maximizing the high elevation habitat generated to support bird habitat and overall longevity. Thin layer placement of sediment in the existing marsh is recommended to increase the marsh platform elevation. The marsh has become increasingly eroded and degraded over the last few decades and continues to lose vegetation and convert from a marsh to a pond. By providing a 6- inch lift of sediment the marsh would be nourished to an elevation of approximately +1.5 ft NAVD88, supporting vegetation health and promoting stability.

The Nature Conservancy performed habitat surveys of the island using aerial imagery dating back to 1999. The results showed a complete loss of herbaceous dune habitat by 2013 and a continued reduction in scrub-shrub habitat. To combat these losses and maximize suitable bird habitat, the alternative was designed to raise the elevation on the island in areas that were historically dune and scrub-shrub habitat and expand the island footprint to increase the acreage of scrub-shrub and upland habitat. Increasing the elevation of the island to the degree proposed would result in loss of the vegetation in that area. Alternatively, under no action, the island would continue to erode, and the existing vegetation would ultimately be lost as well. The project team chose to prioritize restoration of valuable habitat and island longevity and recommends covering the already deteriorating vegetation to increase the island elevation. Replanting of native vegetation following construction will be performed. A scrubshrub platform of elevation +4 ft NAVD88 and a variable width is proposed for implementation on this area of the island.

Widening of the island to restore the historic footprint was not feasible due to the abundance of SAV in the area. Several configurations were explored to increase the island footprint and the recommended alternative was selected because it had the least overlap with the adjacent SAV beds and maximized the acreage of habitat created. See details of SAV based on recent surveys in section E.c. above.

A narrow, approximately 60 ft wide, sediment bridge attaches the existing island footprint to the proposed expansion east of the existing island which includes scrub-shrub and upland platforms. The scrub-shrub platform has an elevation of +4 ft NAVD88 and a typical width of 75 ft. In the center of the placement area is the +6 ft NAVD88 elevation upland platform of variable width. A 5:1 slope (horizontal: vertical) was applied above and below water at all transition zones between platforms.

3. Robinson Island

Approximately 44,455 cubic yards of sediment will be placed on and surrounding

Robinson Island to create 1 acre of subtidal habitat, 3 acres of marsh habitat, and 3 acres of dune habitat. An existing structure that functions as a revetment will be improved to protect restored habitats. A description of shoreline stabilization activities is provided below in Section d: Shoreline Armoring. Approximately 31,363 square feet (0.72-acre) of SAV will be transplanted out of the project footprint in accordance with the approved mitigation plan prior to the placement of fill.

Thin layer placement of sediment in the existing marsh is recommended to increase the marsh platform elevation by 6 inches to reach a design elevation of +1.5 ft NAVD88 to support vegetation health and promote stability. Similarly, a small volume of fill is recommended for placement at the north side of the island to address erosion landward of the breakwater and create additional marsh habitat at a design elevation of +1.5 ft NAVD88.

From the western perimeter of the existing marsh, the island would be expanded to create marsh habitat and a protective dune system. The newly created marsh would have an elevation of +1.5 ft NAVD88 that is continuous with the nourished marsh. Around the western perimeter of the marsh system is a protective dune with a crest width and elevation of approximately 75 ft and +5 ft NAVD88, respectively. The dune is incorporated to shield the marsh system and create higher elevation habitat on an island that has seen a historic reduction in suitable bird habitat. Both sides of the western dune have a slope of 5:1 (horizontal:vertical). This slope affords stability while not being overly accommodating to recreational boats on the seaward side of the dune. It is anticipated that the seaward side will equilibrate over time, naturally resulting in a more gradual slope.

The eastern side of the island has exhibited a gradual rate of erosion which has left the roots of the native vegetation exposed. Due to the adjacent channel, there is limited opportunity to place fill in this region without impacting hydrodynamics and the navigability of the channel. Given the confined space, a continuous dune with a crest width of approximately 20 ft and a crest elevation of +3 ft NAVD88 is recommended. While it is not a large placement area, the dune would protect the established vegetation which in turn helps to stabilize the shoreline.

The alternative was originally estimated to impact SAV according to the 2019 survey collected by Barry A. Vittor and Associates. However, recent surveys in 2024 indicate a small decrease in the potential area of impact. A description of the recent surveys is provided in Section c above. To address the impacts to SAV habitat, SAV transplantation will be conducted. A Compensatory Mitigation Plan for SAV along with a SAV Monitoring and Adaptive Management Plan will be used to guide SAV activities and track progress.

Potential Project Impacts:

Specific project activities include revetment enhancements and shoreline stabilization, hydraulic dredging of the borrow areas, and dredge material placement to restore and/or enhance marsh, beach, dune, scrub shrub, and upland habitats. There may be short term impacts from construction, but overall this project would have a beneficial impact by restoring and/or enhancing valuable coastal habitats in Perdido Bay. These habitat types have historically been present in the project area but have been eroded over time due to storm activity and increasing recreational use of the islands and surrounding areas. Through restoration/enhancement of valuable coastal habitats the project would result in beneficial impacts to the natural system and the flora and fauna which inhabit it.

In addition to creating productive habitat, placement of dredged material on the west side of Walker Island will protect neighboring SAV by reducing vessel traffic through the beds. Passage of boats and jet skis through this area and around the western tip of Walker Island is a chronic problem for the local SAV beds. This is evidenced by the prop scars found throughout the beds in this area of the project. This issue is perceived to be the result of motorists who are not familiar with the area or knowledgeable of the impacts boats and jet skis can have on SAV beds. Anthropogenic impacts in this area of the project were noted as a concern by project partners and stakeholders. Placing fill in this region will create a physical barrier between the channels to the north and south of the placement area and encourages operators to use the channel that runs parallel to Robinson Island and does not contain SAV.
No short-term or long-term impacts are anticipated to Cultural and Historic Resources. A Phase Cultural Resources survey of the project area and borrow areas was completed to determine potential impacts to cultural and historic resources resulting from the implementation of this restoration activity. Conditions included in the Corps permit will be followed to ensure that the project activities do not inadvertently impact the remaining sections of an archaeological site.
Some of the necessary permits and compliance for this project are complete. Other are in progress and will be completed prior to on the ground construction work. The status at the time of this BE form is as follows:

- ESA Section 7 (NMFS) - see Section H of this form
- ESA Section 7 (USFWS) - consultation complete as part of Corps Permit, see Section I below
- Essential Fish Habitat (NMFS) - consultation complete as part of Corps Permit, See Section G below
- Marine Mammal Protection Act (NMFS) - complete
- Marine Mammal Protection Act (USFWS) - in progress
- Rivers and Harbors Act/ Clean Water Act (Section 10, USACE)- Permit issued, modification currently in review
- Section 106 of the National Historic Preservation Act - in progress
- Coastal Zone Management Act- consultation complete as part of the Corps Permit
- Migratory Bird Treaty Act (USFWS) - in progress
- Coastal Barrier Resources Act (USFWS) - in progress
- Clean Water Act 404(b)(1) certification - completed as part of Corps Permit

II. *Construction Schedule (What is the anticipated schedule for major phases of work? Include duration of in-water work.)* We anticipate SAV transplanting work to begin first, between June and Sept 2024 so that SAV can be collected and relocated prior to construction. We anticipate

construction to start in October 2024 depending on funding availability. A cutter dredge will be used, but the team will decide what size (12" or 16") as needed which will affect construction time. Based on a 12-hour day and the size of the dredge, construction duration will be: 21-46 days for Robinson Island and 87190 days for Walker Island.

Additionally, there will be approximately two weeks for mobilization and demobilization before and after construction.

III. *Specific In-Water and/or Terrestrial Construction Methods*
Please check yes or no for the following questions related to in-water work and overwater structures

Does this project include in-water work?	YES☒	NO☐
Does this project include terrestrial construction?	YES☒	NO☐
Does this project include construction of an overwater structure?	YES☐	NO☒
Will fishing be allowed from this overwater structure?	YES☐	NO☐
Will wildlife observation be allowed from this overwater structure?	YES☐	NO☐
Will boat docking be allowed from this overwater structure?	YES☐	NO☐

If this is a fishing pier, please provide the following information: public or private access to pier, estimated number of people fishing per day, plan to address hook and line captures of protected species, specific operating hours/open 24 hours, artificial lighting of pier (if any), number of fish cleaning stations, and number of pier attendants (if any).

N/A. The project does not propose a fishing pier.

Construction: Provide a detailed account of construction methods. It is important to include step-by-step descriptions of how demolition or removal of structures is conducted and if any debris will be moved and how. Describe how construction will be implemented, what type and size of materials will be used and if machines will be used, manual labor, or both. Indicate if work will be done from upland, barge, or both.)

iii. *Use of "Dock Construction Guidelines"?* https://media.fisheries.noaa.gov/dam-migration/dockkey2002.pdf

iv. *Type of decking: Grated – 43% open space; Wooden planks or composite planks – proposed spacing?*

v. *Height above Mean High Water (MHW) elevation?*

vi. *Directional orientation of main axis of dock?*

vii. *Overwater area (sq ft)?*

Click here to enter text.

a. *Pilings & Sheetpiles: If this project includes installation of pilings or sheets, please provide answers to questions 1-11 listed below*

1. Method of pile installation	
2. Material type of piles used	
3. Size (width) of piles/sheets	
4. Total number of piles/sheets	
5. Number of strikes for each single pile	
6. Number of strikes per hour (for a single pile)	
7. Expected number of piles to be driven each day	
8. Expected amount of time needed to drive each pile (minutes of driving activities)	
9. Expected number of sequential days spent pile driving	
10. Whether pile driving occurring in-water or on land	
11. Depth of water where piles will be driven	

b. *Marinas and Boat Slips (Describe the number and size of slips and if the number of new slips changes from what is currently available at the project. Indicate how many are wet slips and how many are dry slips. Estimate the shadow effect of the boats - the area (sqft) beneath the boats that will be shaded.)*

N/A

c. *Boat Ramp (Describe the number and size of boat ramps, the number of vessels that can be moored at the site (e.g., staging area) and if this is a public or private ramp. Indicate the boat trailer parking lot capacity, and if this number changes from what is currently available at the project.)*

N/A

d. *Shoreline Armoring (This includes all manner of shoreline armoring (e.g., riprap, seawalls, jetties, groins, breakwaters, etc.). Provide specific information on material and construction methodology used to install the shoreline armoring materials. Include linear footage and square footage. Attach a separate map showing the location of the shoreline armoring in the action area.*

The north side of Robinson Island has exhibited long term erosion. This erosion has resulted in loss of valuable habitat that once supported heron nesting. A timber retaining wall was constructed in 2007 on the northeast side of the island and the structure remains in place to this day. A small rock revetment was installed on Robinson Island in 2013. Based on the historical aerial imagery it is estimated that the shoreline eroded approximately 65 ft on the northeast side of the island before installation of the retaining wall in 2007 and approximately 110 ft on the north side of the island before installation of the rock riprap revetment in 2013.

The existing revetment structure will be supplemented with the addition of two layers of

armor stone. The north section design includes relocation of all existing rock above an elevation of -1.2 ft NAVD88 to the south of the current centerline to act as core material and the placement of additional armor stone on top of the relocated rock. The new rock would tie into the existing grade on the landward side of the structure and into the existing submerged section. This maintains a continuous structure. Based on the approximate dimensions of ALDOT Class 4 rip rap, adding two layers of rock to the revetment would achieve a crest height of +4.5 ft NAVD88. This elevation satisfies the recommended crest height associated with the 100-year return period (+4 ft NAVD88) and would be emergent in 20 years based on the current SLR projections, fulfilling the design life of the structure.

The original design included two breakwater sections in response to the variable elevations and design conditions of the north and east breakwater segments. Concerns were raised by NMFS during initial permit coordination that incorporation of gaps in a feature that was operating as a revetment could ultimately compromise the resilience and longevity of the adjacent, restored habitat. It was concluded that breakwater gaps and/or sills were not preferred. In addition, the existing feature currently allows for exchange of water through the rocks and the future structure will continue to do the same. To support further connectivity over the lifespan of the project, it was decided that the southernmost segment of the revetment would not be modified as part of the planned project and would remain at its existing elevation (Figure 5). The designated segment will continue to be a low-elevation feature that offers some protection to the adjacent habitat while allowing for overtopping and increased flow into the high marsh during highwater events. The proposed connectivity measures were agreed to be suitable for the high marsh that will be constructed landward of the revetment to restore this region of the island to its prior condition. These modifications to the project approach optimize the feature in a manner that offers the warranted protection to Robinson Island while maintaining the desired connectivity to the bay.

The Robinson Island Revetment is currently permitted for placement of 925 CY of rip rap covering an area of 0.1acre. The permit modification requests that this area be increased to 0.14-acre allowing the placement of 1,370 CY of rip rap. The modified design entails capping of the existing revetment feature and the addition of rock down the below-water slope on the north side of the revetment (Figure 6). This modification is in response to receipt of existing conditions survey data. The survey showed that the revetment did not extend down to the bottom of the below water slope of the north side of the island, which is a location that is vulnerable to local currents. It is recommended that this area be armored to protect from scour and to support the placement of additional rock to protect the planned, adjacent marsh habitat.

Figure 5. The yellow polygon indicates the segment of the Robinson Island revetment that will not be modified during project construction.

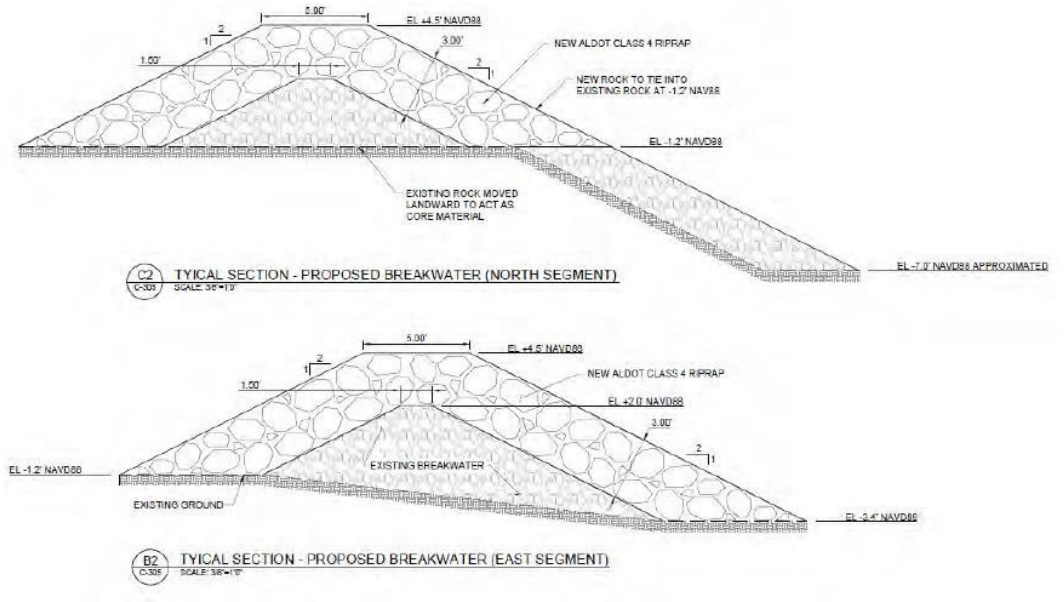


Figure 5. Robinson Island breakwater design.

Figure 6. Modified shoreline stabilization design for Robinson Island. .

e. *Dredging or digging (Provide details about dredge type (hopper, cutterhead, clamshell, etc.), maximum depth of dredging, area (ft2) to be dredged, volume of material (yd3) to be produced, grain size of material, sediment testing for contamination, spoil disposition plans, and hydrodynamic description (average current speed/direction)). If digging in the terrestrial environment, please describe fully with details about possible water jetting, vibration methods to install pilings for dune walk-over structure, or other methods. If using devices/methods/turtle relocation dredging to relocate sea turtles, then describe the methods here.*

Two borrow areas are permitted at the locations indicated in Figure 2 and drawings attached to this form. The two borrow areas will be used to obtain approximately 399,700 cubic yards of material for construction. Borrow area A (9 acres) will be dredged to an elevation of -11 feet NAVD88 and Borrow Area B (20 acres) will be dredged to an elevation of -15 feet NADV88.

It is anticipated that the selected marine contractor would hydraulically dredge with a cutterhead dredge from the borrow areas and pump sediment to the project fill areas through a series of floating pipeline. Morphodynamic modeling predicted that dredging of the borrow areas is not expected to produce significant impacts to sediment transport and seabed change in the vicinity of the Lower Perdido Islands. Additionally, significant impacts to circulation or water quality are not anticipated as a result of dredging based on the dimensions of the borrow area and the results of the model which indicate sufficient flushing of these channels. The two-year simulation did not predict rapid infilling of the borrow areas following excavation.

f. *Blasting (Projects that use blasting might not qualify as "minor projects," and a Biological Assessment (BA) may need to be prepared for the project. Arrange a technical consultation meeting with NMFS Protected Resources Division to determine if a BA is necessary. Please include explosive weights and blasting plan.)*

N/A

g. *Artificial Reefs (Provide a detailed account of the artificial reef site selection and reef establishment decisions [i.e., management and siting considerations, stakeholder considerations, environmental considerations, long term maintenance plan (periodic clean-up of lost fishing gear/debris]), deployment schedule, materials used, deployment methods, as well as final depth profile and overhead clearance for vessel traffic. For additional Information and detailed guidance on artificial reefs, please refer to the artificial reef program websites for the particular state the project will occur in.*

N/A

h. *Fishery Activities (Describe any use of gear that could entangle or capture protected species. This includes activities that may enhance fishing opportunities (e.g. fishing piers) or be fishery/gear research related (e.g. involve trawl gear, gillnets, hook and line gear, crab pots etc)).*

N/A

G. NOAA Essential Fish Habitat (EFH)

If applicable, describe any designated Essential Fish Habitat within the project area in the text box and answer the questions below about habitat effects, conversions or benefits. If there is no EFH in your project area, enter N/A in the box below and move to section F.

Depending on the effects of your project, EFH consultation with NMFS may be required:
https://www.fisheries.noaa.gov/southeast/consultations/essential-fish-habitat-consultations-southeast

EFH consultation was completed in September 2023 as part of the Corps permit. All requirements of the consultation will be followed by the Implementing Trustee and their partners.

In this table, please use checkboxes to indicate which EFH eco-region(s) and habitat zone(s) in which the project is located. For more information about EFH Eco Regions see the references here:

https://noaasdd.sharepoint.com/:f:/s/tcover/Euupi2PMtXdEqQtJSdKyq-wBdyb42ubMUUbMy7QsijqK7A?e=oYqSsb
https://portal.gulfcouncil.org/EFHreview.html

Gulf of Mexico EFH Eco-Region	Estuarine	Nearshore	Offshore
Eco-Region 1: **South Florida** (*Florida Keys north to Tarpon Springs, Florida*)	☐	☐	☐
Eco-Region 2: **North Florida** (*Tarpon Springs, Florida, north and west to Pensacola Bay, Florida*)	☐	☐	☐
Eco-Region 3: East Louisiana, Mississippi, and Alabama (*Pensacola Bay, Florida, west to the Mississippi River Delta)*	☐	☐	☐
Eco-Region 4: **East Texas and West Louisiana** (*Mississippi River Delta west and south to Freeport, Texas)*	☐	☐	☐

Eco-Region 5: West Texas *(Freeport, Texas south to the U.S./Mexico border)*	☐	☐	☐

Effects to EFH

In this section, please indicate if your project has effects on EFH, either beneficial or adverse. For example, whether the project creates, improves, removes or converts habitat. Please describe the types of habitats that will be affected by the project, including number of acres.

Will this project affect EFH?	YES ☐ NO☐
If no, please proceed to section X. (For example, your project is wholly upland or includes only desktop analysis tasks) If yes, please proceed to additional boxes below.	
Will this project have beneficial effects to EFH?	YES ☐ NO☐
If yes, please describe how your project will have beneficial effects the text box below:	

Will this project have adverse effects on EFH?	YES ☐ NO☐
If yes, please describe what type of adverse effects your project will cause to EFH in the text bow below:	

H. NOAA ESA Species and Critical Habitat and Effects Determination Requested

If your project occurs in a location that does not contain any listed NOAA species or designated Critical Habitats, please check the box below. If this box is checked, you may skip Section H. and proceed to Section I.

☐This project occurs in a location that does not contain any listed NOAA species or designated Critical Habitats.

☐ESA effects have been accounted for under an existing consultation.

1. List all species, critical habitat, proposed species and proposed critical habitat that may be found in the action area. Species that do not currently occur in the action area (but are listed on county species lists) do not need to be listed in drop downs. For species not included in the drop down menu please add manually to the table.

2. Attach a separate map identifying species/critical habitat locations within the action area. For information on species and critical habitat under NMFS jurisdiction, visit the ESA Section 7 Mapper at: *https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=b184635835e34f4d904c6fb741cfb00d*

If Gulf sturgeon in marine waters may be affected, include them in the table here. If Gulf Sturgeon in riverine/freshwater may be affected include them in the USFWS table below in Section I. If sea turtles in water may be affected include them in the table here. If sea turtles on land may be affected include them in the USFWS table below in Section I.

Species and/or Critical Habitat	**CH Unit** (if applicable)	**Location** (Sea turtles and Gulf Sturgeon **only**)	**Determinations** (see definitions below)	**For "No Effect", please select justification.**
Green Sea Turtle (T)		Marine	May Affect, Not Likely to Adversely Affect	Choose an item.
Kemp's Ridley Sea Turtle (E)		Marine	May Affect, Not Likely to Adversely Affect	Choose an item.
Loggerhead Sea Turtle (T)		Marine	May Affect, Not Likely to Adversely Affect	Choose an item.
Gulf Sturgeon (T)		Marine	May Affect, Not Likely to Adversely Affect	Choose an item.
Giant Manta Ray (T)		Marine	May Affect, Not Likely to Adversely Affect	Choose an item.
				Choose an item.
		Choose an item.	Choose an item.	Choose an item.
		Choose an item.	Choose an item.	Choose an item.

Determination Definitions

Please make the appropriate choice in the drop down menus for both species and designated critical habitat listed in the first column.

NE = no effect. This determination is appropriate when the proposed action will not directly, indirectly, or cumulatively impact, either positively or negatively, any listed, proposed, candidate species or designated/proposed critical habitat.

NLAA = may affect, not likely to adversely affect. This determination is appropriate when the proposed action is not likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat or there may be beneficial effects to these resources. Response requested is concurrence with the not likely to affect determination. This conclusion is appropriate when effects to the species or critical habitat will be wholly beneficial, discountable, or insignificant. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or habitat. Insignificant effects relate to the size of the impact, while discountable effects are those that are extremely unlikely to occur. 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. If the Services concur in writing with the Action Agency's determination of "is not likely to adversely affect" listed species or critical habitat, the section 7 consultation process is completed.

LAA = may affect, likely to adversely affect. This determination is appropriate when the proposed action is likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat. Response requested for listed species is formal consultation for action with a likely to adversely affect determination, with a biological opinion as the concluding document. This conclusion is reached if any adverse effect to listed species or critical habitat may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable or insignificant. In the event the overall effect of the proposed action is beneficial to the listed species or critical habitat, but may also cause some adverse effect on individuals of the listed species or segments of the critical habitat, then the determination is "likely to adversely affect." Any LAA determination requires formal section 7 consultation and will require additional information.

I. USFWS Species and Critical Habitat and Effects Determination Requested

If your project occurs in a location that does not contain any listed USFWS species or designated Critical Habitats, please check the box below. If this box is checked, you may skip Section I and proceed to Section J.

☐This project occurs in a location that does not contain any listed USFWS species or designated Critical Habitats.

☒ ESA effects have been accounted for under an existing consultation.

Consultation completed on September 5, 2023, #2023-011826.

*1. List all species, critical habitat, proposed species and proposed critical habitat **generated by IPaC** that may be found in the action area*. For species not included in the drop down menu please add manually to the table. The IPaC website can be found here: https://ipac.ecosphere.fws.gov/.

2. Attach a separate map identifying species/critical habitat locations within the action area. For information on species and critical habitat under NMFS jurisdiction, visit: http://sero.nmfs.noaa.gov/protected_resources/section_7/threatened_endangered/Documents/gulf_of_mexico.pdf.

If Gulf sturgeon in riverine/freshwater waters may be affected, include them in the table here. If Gulf Sturgeon in marine waters may be affected include them in the NMFS table above in Section H. If sea turtles on land may be affected include them in the table here. If sea turtles in water may be affected include them in the NMFS table above in Section H.

Species and/or Critical Habitat	**CH Unit** (if applicable)	**Location** (Sea turtles and Gulf Sturgeon **only**)	**Determinations** (see definitions below)	**For "No Effect", please select justification.**
		Choose an item.		Choose an item.
		Choose an item.		Choose an item.
		Choose an item.		Choose an item.
				Choose an item.
				Choose an item.
				Choose an item.
				Choose an item.
				Choose an item.
				Choose an item.
				Choose an item.
				Choose an item.
				Choose an item.
				Choose an item.

Determination Definitions

Please make the appropriate choice in the drop down menus for both species and designated critical habitat

NE = no effect. This determination is appropriate when the proposed action will not directly, indirectly, or cumulatively impact, either positively or negatively, any listed, proposed, candidate species or designated/proposed critical habitat.

NLAA = may affect, not likely to adversely affect. This determination is appropriate when the proposed action is not likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat or there may be beneficial effects to these resources. Response requested is concurrence with the not likely to affect determination. This conclusion is appropriate when effects to the species or critical habitat will be wholly beneficial, discountable, or insignificant. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or habitat. Insignificant effects relate to the size of the impact, while discountable effects are those that are extremely unlikely to occur. 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. If the Services concur in writing with the Action Agency's determination of "is not likely to adversely affect" listed species or critical habitat, the section 7 consultation process is completed.

LAA = may affect, likely to adversely affect. This determination is appropriate when the proposed action is likely to adversely impact any listed, proposed, candidate species or designated/proposed critical habitat. Response requested for listed species is formal consultation for action with a likely to adversely affect determination, with a biological opinion as the concluding document. This conclusion is reached if any adverse effect to listed species or critical habitat may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable or insignificant. In the event the overall effect of the proposed action is beneficial to the listed species or critical habitat, but may also cause some adverse effect on individuals of the listed species or segments of the critical habitat, then the determination is "likely to adversely affect." Any LAA determination requires formal section 7 consultation and will require additional information.

J. Effects of the Proposed Project to the Species and Actions to Reduce Impacts

NOTE: Species selected as "No Effect" with justification in tables above do not need to be addressed in Section J.

I. *Explain the potential beneficial and adverse effects to each species listed above. Describe what, when, and how the species will be impacted and the likely response to the impact. Be sure to include direct, indirect, and cumulative impacts and where possible, quantify effects.*

If species are present (or potentially present) and will not be adversely affected describe your rationale. If species are unlikely to be present in the general area or action area, explain why. This justification provides documentation for your administrative record, avoids the need for additional correspondence regarding the species, and helps expedite review.

Loggerhead, Kemps Ridley, and Green Sea Turtles, Giant Manta Ray and Gulf sturgeon

This project may affect, but is not likely to adversely affect loggerhead sea turtle, Kemp's ridley sea turtle, green sea turtle, Giant manta ray and Gulf sturgeon. Dredging and material placement activities associated with the project could result in disturbance/displacement of these species that may be in the area during construction; however, any disturbance/displacement would be temporary and protected species would likely move to other open water habitat during dredging activities. Effects are possible due to water quality, noise, entrapment, and collisions with watercraft and dredge equipment.

BMPs including NMFS *Measures for Reducing Entrapment Risk to Protected Species*, NMFS *Protected Species Construction Conditions* and *Vessel Strike Avoidance Measures* would be implemented during construction. These BMPs include measures such as monitoring for protected species, including temporary signage, and operating vessels at idle speeds.

Water quality: In-water construction activities and hydraulic dredging could produce turbidity and siltation. Turbidity could also cause behavioral affects to protected species and result in reduced productivity (ability of the ecosystem to produce and export energy). Behavioral affects could include fleeing of the area and/or ceasing of feeding or spawning in the area. Siltation could result in displacement of mobile individuals. Any protected species that leave the immediate construction area due to water quality would be anticipated to return once construction ends. Turbidity and erosion/siltation control measures will be required during construction activities to avoid and minimize impacts to water quality.

Benthic Prey species: Hydraulic dredging at permitted borrow areas could result in short-term impacts due to displacement and/or mortality of prey species during habitat disturbance at borrow areas. Any short-term adverse impacts are anticipated to be minor and localized as the habitat would return to baseline following dredging activities.

Noise: Sources of project related in-water and in-air noise could include dredges, and vessels such as tugboats and service boats. It is therefore anticipated that all in-water noise within shallow water environments, would be negligible. In-water project related noise could result in avoidance of the immediate construction area. Any protected species that leave the immediate construction area due to noise disruptions would be anticipated to return once construction ends.

Entrapment: Protected species can become entrapped within construction sites. Therefore, NMFS developed entrapment minimization measures for projects that enclose shallow open water areas for wetland creation or nourishment. For any inwater work, the project would implement the NMFS *Measures for Reducing Entrapment Risk to Protected Species.*

Vessel Collision**:** Threats to protected species include being struck by boats and barges, however the project would implement the NMFS *Vessel Strike Avoidance Measures* and the ESA-listed species that may be present in the area are highly mobile and able to avoid the types of slow-moving vessels that will be used for construction of the proposed project.

II. *Explain the actions to reduce adverse effects to each species listed above. For each species for which impacts were identified, describe any Conservation Measures and/or BMPs that will be implemented to avoid or minimize the impacts. Conservation Measures and/or BMPs are designed to avoid or minimize effects to listed species and critical habitats or further the recovery of the species under review. Conservation Measures and/or BMPs are considered part of the proposed action and their implementation is required. Any changes to, modifications of, or failure to implement these conservation measures may result in a need to reinitiate this consultation.*

Frequently Recommended Conservation Measures and BMPs: This checklist provides standard practices

recommended by NMFS and USFWS. Please select any BMPs that will be implemented:

☒	**NMFS Protected Species Construction Conditions (2021)[1]**
☒	**NMFS Measures for Reducing the Entrapment Risk to Protected Species[1]**
☒	**NMFS Vessel Strike Avoidance Measures (2021)[1]**
☒	**USFWS Standard Manatee In Water Conditions (2011)[2] and Appropriate State Manatee Conditions[3]**

Additional BMPs or Conservation Measures

Chapter 6 of the PDARP included an important appendix (6.A) of best practices, see information starting on page 6-173. http://www.gulfspillrestoration.noaa.gov/sites/default/files/wp-content/uploads/Chapter-6_Environmental-Consequences_508.pdf

Use the box below to indicate which best management practices or conservation measures you'll be using in your project (that were not listed in Section I above)

The following additional BMPs will be followed per the Corps permit:

- The permittee will ensure that turbidity generated during dredging activities must not cause substantial visible contrast nor result in an increase of more than fifty (50) Nephelometric turbidity units above background in state waters.
- Best Management Practices shall be implemented to minimize erosion, siltation and damage to adjacent wetlands and/or waters of the United States in which the discharge of fill material has not been authorized. Appropriate erosion and sediment control measures must be utilized and maintained in effective operating condition during construction. All exposed soil surfaces and fill material must be permanently stabilized at the earliest practicable opportunity. All temporary erosion control features shall remain in place until permanent stabilization measures have been completed and become fully effective.

K. Effects to Critical Habitats and Actions to Reduce Impacts

NOTE: Species selected as "No Effect" with justification in table do not need to be addressed in Section I or J.

I. *Explain the potential beneficial and adverse effects to critical habitat listed above. Describe what, when, and how the critical habitat will be impacted and the likely response to the impact. Be sure to include direct, indirect, and cumulative impacts to physical and biological features, and where possible, quantify effects (e.g. acres of habitat, miles of habitat).*

Describe your rationale if designated or proposed critical habitats are present and will not be adversely affected.

The project area does not contain designated or proposed critical habitat.

[1] https://www.fisheries.noaa.gov/southeast/consultations/regulations-policies-and-guidance
[2] https://www.fws.gov/media/2011-standard-manatee-construction-conditions-water-work [3] Contact USFWS representative for appropriate documents

II. *Explain the actions to reduce adverse effects to critical habitat listed above. For critical habitat for which impacts were identified, describe any conservation measures (e.g. BMPs) that will be implemented to avoid or minimize the impacts. Conservation measures are designed to avoid or minimize effects to listed species and critical habitats or further the recovery of the species under review.*
Conservation measures are considered part of the proposed action and their implementation is required. Any changes to, modifications of, or failure to implement these conservation measures may result in a need to reinitiate this consultation.

Click here to enter text.

L. Marine Mammals

I. The Marine Mammal Protection Act (MMPA) prohibits the taking (including disruption of behavior, entrapment, injury, or death) of all marine mammals (e.g.,whales, dolphins, manatees). However, the MMPA allows limited exceptions to the take prohibition if authorized, such as the incidental (i.e., unintentional but not unexpected) take of marine mammals. The following questions are designed to allow the Agencies to quickly determine if your action has the potential to take marine mammals. If the information provided indicates that incidental take is possible, further discussion with the Agencies is required.

Is your activity occurring in or on marine or estuarine waters? ☐NO ☒YES

If yes, is your activity likely to cause large-scale, ecosystem level impacts to the quality (e.g. salinity, temperature) of marine or

estuarine waters? ☒NO ☐YES

II. If Yes, describe activities further using checkboxes. Does your activity involve any of the following:

NO	YES	ACTIVITY
☒	☐	*a) Use of active acoustic equipment (e.g., echosounder) producing sound below 200 kHz*
☐	☒	*b) In-water construction or demolition*
☒	☐	*c) Temporary or fixed use of active or passive sampling gear (e.g., nets, lines, traps; turtle relocation trawls)*
☒	☐	*d) In-water Explosive detonation*
☒	☐	*e) Aquaculture*
☒	☐	*f) Restoration of barrier islands, levee construction or similar projects*
☒	☐	*g) Fresh-water river diversions*
☒	☐	*h) Building or enhancing areas for water-related recreational use or fishing opportunities (e.g. fishing piers, bridges, boat ramps, marinas)*
☐	☒	*i) Dredging or in-water construction activities to change hydrologic conditions or connectivity, create breakwaters and living shorelines, etc.*
☒	☐	*j) Conducting driving of sheet piles or pilings*
☒	☐	*k) Use of floating pipeline during dredging activities*

III. If you checked "Yes" to any of the activities immediately above or the activity could impact the quality of marine or estuarine waters, please describe the nature of the activities in more detail or indicate which section of the form already includes these descriptions. See the NOAA Acoustic Guidance for more information: http://www.nmfs.noaa.gov/pr/acoustics/faq.htm

See Section F of this form for a full description of the proposed project activities.

IV. *Frequently Recommended BMPs for marine mammals (manatees are covered in Section I above): This checklist provides standard BMPs recommended by NOAA. Please select any BMPs that will be implemented:*

☐	NMFS Southeast U.S. Marine Mammal and Sea Turtle Viewing Guidelines[3]
☒	NMFS Protected Species Construction Conditions (2021)[4]
☒	NMFS Measures for Reducing the Entrapment Risk to Protected Species (2012)[3]
☒	NMFS Vessel Strike Avoidance Measures and Reporting for Mariners (2021)[3]
☐	NMFS Reproducing and posting outreach signs: Dolphin Friendly Fishing Tips sign, Don't Feed Wild Dolphins sign[5]

If not listed above, please describe any additional BMPs or conservation measures that may be be implemented for marine mammals. Project specific BMPs and conservation measures to protect marine mammals include:

- Reporting any manatee collisions to the USFWS or state resource agency and following the most recent version of the standard manatee conditions.
- Monitoring/observing for dolphins during dredging activities following the same protocols used for sea turtles and manatees. Specifically:
    - (a) if dolphins come within 50 yards of active dredging and are not just traveling through the area (e.g. remaining within 50 yards to forage), dredge operations should not start or, if dredging has already begun, they should cease until the dolphins are beyond and are not likely to re-enter (i.e., are on a dedicated path away from the 50 yard area). This is to avoid physical harm from dredge equipment.
    - (b) To avoid perceived physical barriers to dolphins, avoid trans-versing waterbodies with any floating pipelines from the dredge activities.

M. Bald Eagles (Bald and Golden Eagle Protection Act)

Are bald eagles present in the action area? ☐NO ☒YES

Whether Bald Eagles are present or not, the following conservation measures should be implemented to project eagles or in the case that previously unknown eagles are documented:

[3] https://www.fisheries.noaa.gov/topic/marine-life-viewing-guidelines

[4] https://www.fisheries.noaa.gov/southeast/consultations/regulations-policies-and-guidance

[5] https://www.fisheries.noaa.gov/southeast/consultations/protected-species-educational-signs

1. If bald eagle breeding or nesting behaviors are observed or a nest is discovered or known, all activities (e.g., walking, camping, clean-up, use of a UTV, ATV, or boat) should avoid the nest by a minimum of 660 feet. If the nest is protected by a vegetated buffer where there is *no* line of sight to the nest, then the minimum avoidance distance is 330 feet. This avoidance distance shall be maintained from the onset of breeding/courtship behaviors until any eggs have hatched and eaglets have fledged (approximately 6 months).
2. If a similar activity (e.g., driving on a roadway) is closer than 660 feet to a nest, then you may maintain a distance buffer as close to the nest as the existing tolerated activity.
3. If a vegetated buffer is present and there is no line of sight to the nest and a similar activity is closer than 330 feet to a nest, then you may maintain a distance buffer as close to the nest as the existing tolerated activity.
4. In some instances, activities conducted at a distance greater than 660 feet of a nest may result in disturbance. If an activity appears to cause initial disturbance, the activity shall stop and all individuals and equipment will be moved away until the eagles are no longer displaying disturbance behaviors.

Will you implement the above measures? ☐NO ☒YES

If these measures cannot be implemented, then you must contact the Service's Migratory Bird Permit Office.
Texas – (505) 248-7882 or by email: permitsR2MB@fws.gov
Louisiana, Mississippi, Alabama, Florida – (404) 679-7070 or by email: permitsR4MB@fws.gov

N. Migratory Bird Treaty Act

In accordance with the Migratory Bird Treaty Act of 1918 as amended (16 U.S.C. 703-712), will this project cause the take of any birds covered under this act? ☒NO ☐YES

If YES, please explain and indicate if the pertinent permits will be or have been obtained:

Project proponent will review the appropriate BMPs and CMs found at the following website and implement the appropriate measures to the extent practicable:
https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
☐NO ☒YES

If NO, please explain:

O. Request Approval for Use of NMFS PDCs for This Project

Complete this section only if your project qualifies for streamlined ESA consultation under the ESA Framework Programmatic
Biological Opinion and updated Appendix A (2023). To be eligible for streamlined ESA consultation with NMFS, you must implement all Project Design Criteria (PDCs) applicable to your project.

Check "yes" for PDC categories that apply to the proposed project, and request PDC checklist from NMFS.
Review the document here on sharepoint: NMFS ESA PDCs

YES	NO	ACTIVITY

☐	☒	Marsh Creation, Maintenance, or Enhancement
☐	☒	Living Shorelines Construction Maintenance, or Expansion
☐	☒	Removal of Fishing Gear and Other Marine Debris
☐	☒	Oyster Reefs Creation, Maintenance, or Enhancement
☐	☒	Pile-Supported Structures, including Non-fishing Piers, Anchored Buoys, and In-water Sign Posts
☐	☒	Artificial Reefs Construction, Maintenance, or Expansion
☐	☒	Boat Ramps Installation, Repair, Replacement, or Removal
☐	☒	Water Management Outfall Structures and Associated Endwalls Installation, Repair, Replacement or Removal
☐	☒	Establishing or Restoring SAV
☐	☒	Scientific Surveys or Research Projects and the Installation, Repair, or Removal of Equipment

P. Submitting the BE Form

We request that all BE forms and consultation materials be placed on Sharepoint for review. Upon receipt, we will conduct a preliminary review and provide any comments and feedback, including any requests for modifications or additional information.

If modifications or additional information is necessary, we will work with you until the Biological Evaluation form is considered complete. Once complete, we will use the Biological Evaluation form to initiate appropriate consultations.

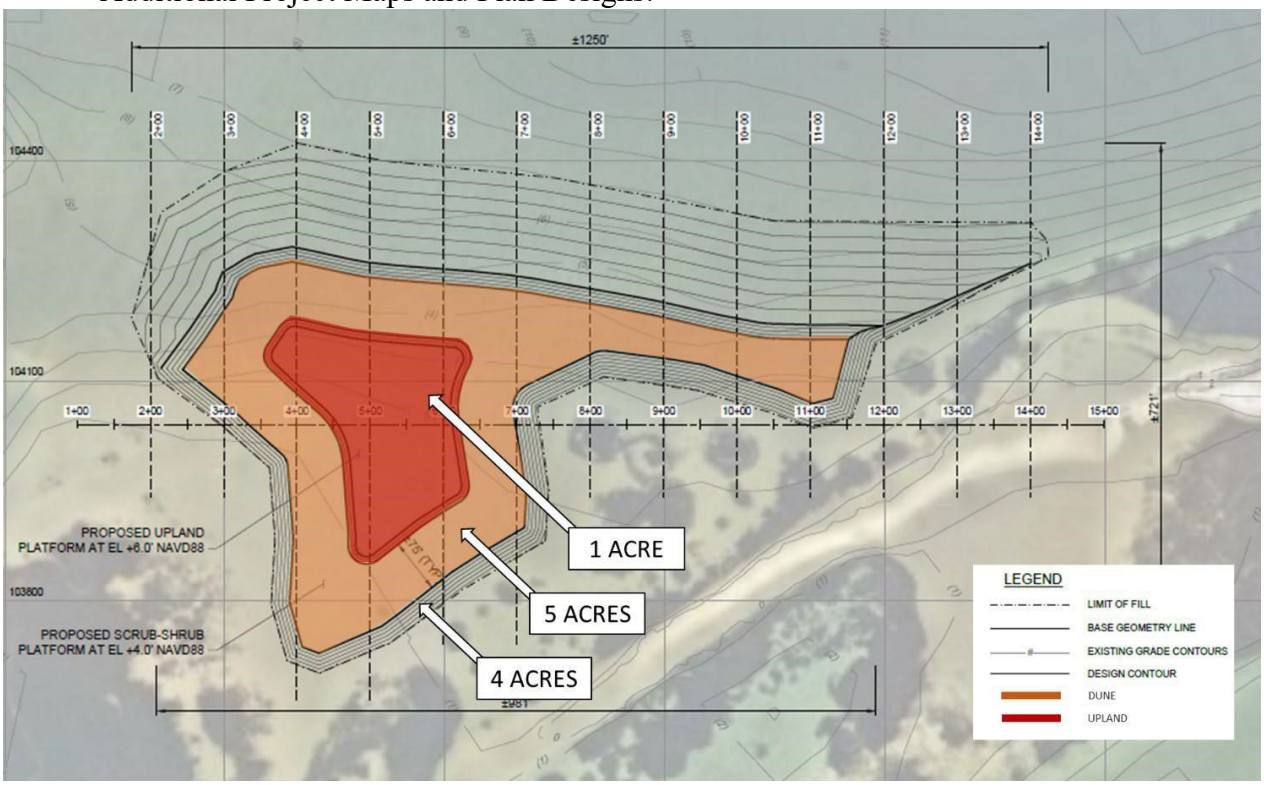
Questions may be directed to:

NMFS ESA § 7 Consultation
Christy Fellas, National Oceanic Atmospheric Administration
Email: Christina.Fellas@noaa.gov
Phone: 813-816-2732

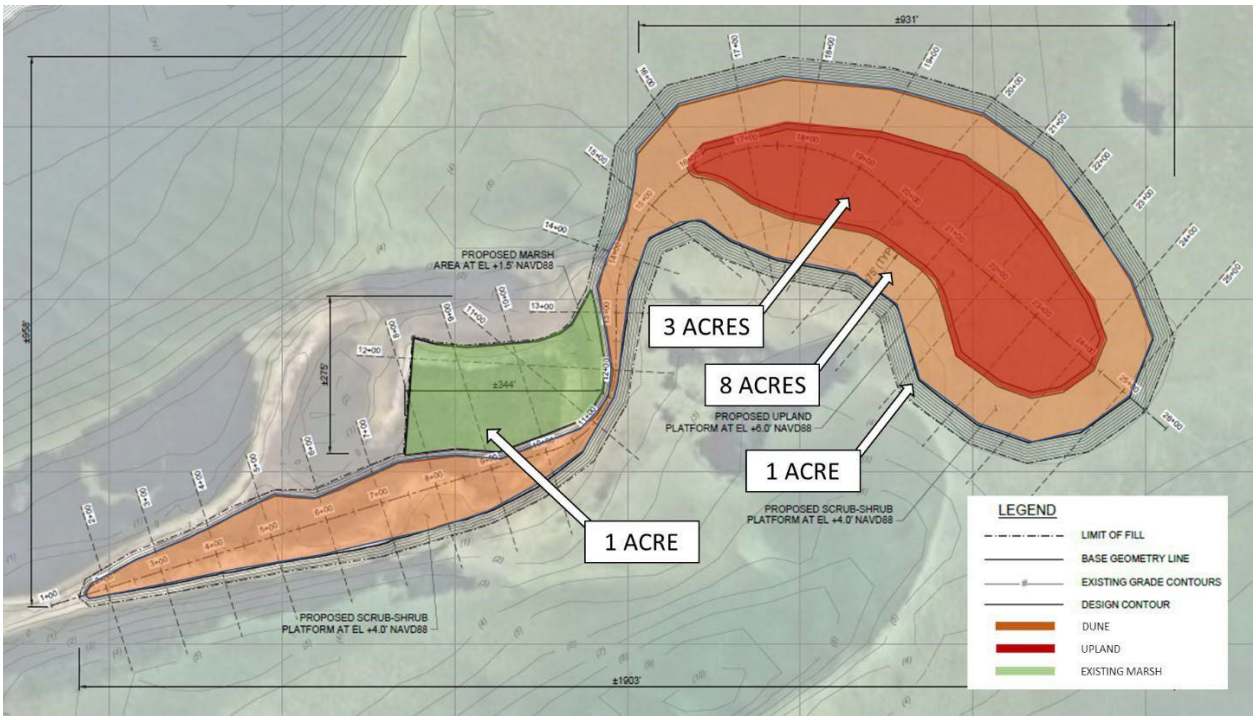
USFWS ESA § 7 Consultation
Michael Barron, Department of the Interior
Email: michael_barron@fws.gov
Phone: 251-421-7030

NHPA Consultation
Benjamin Frater, Department of the Interior
Email: benjamin_frater@fws.gov
Phone: 404-314-8815

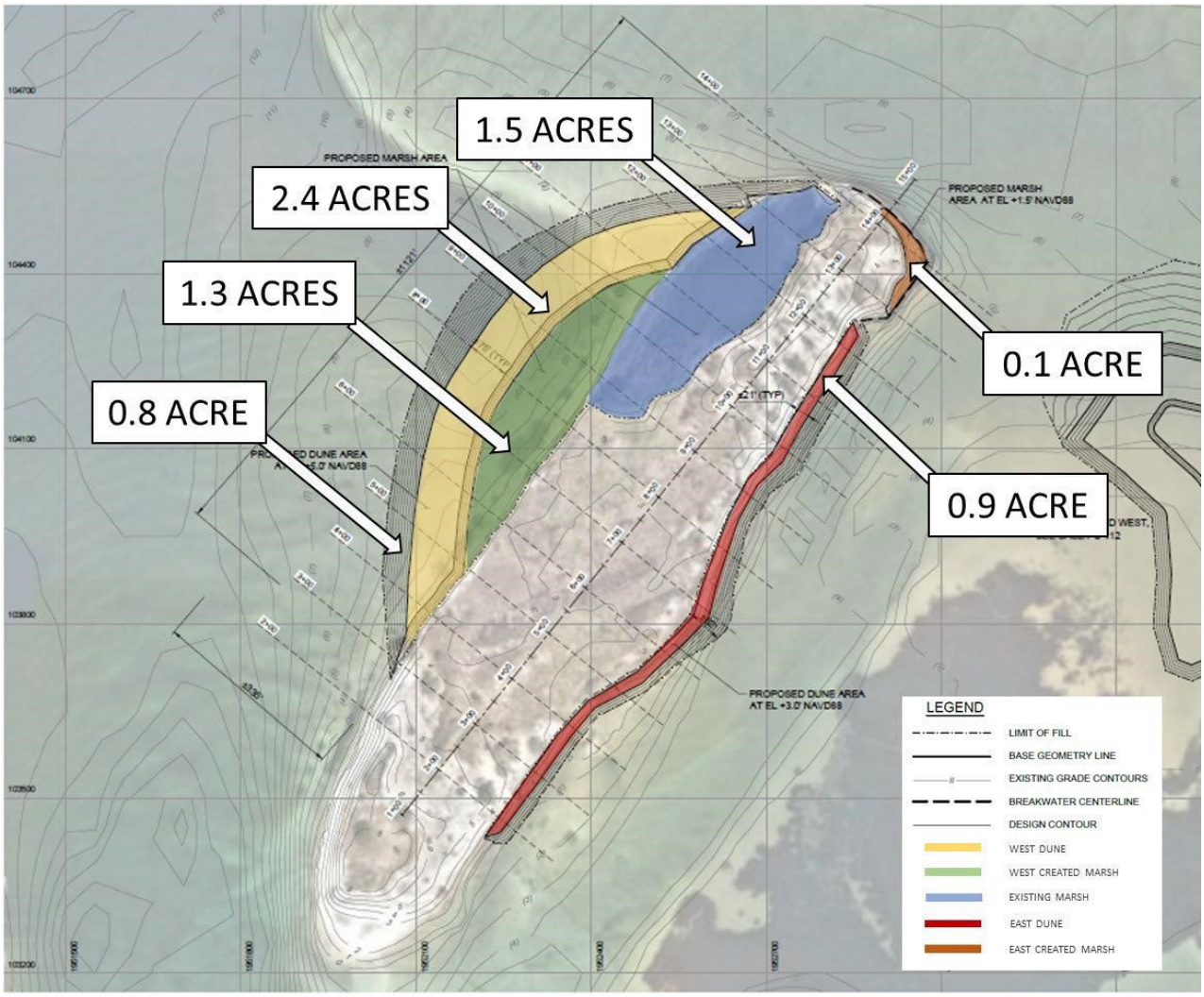
Additional Project Maps and Plan Designs:



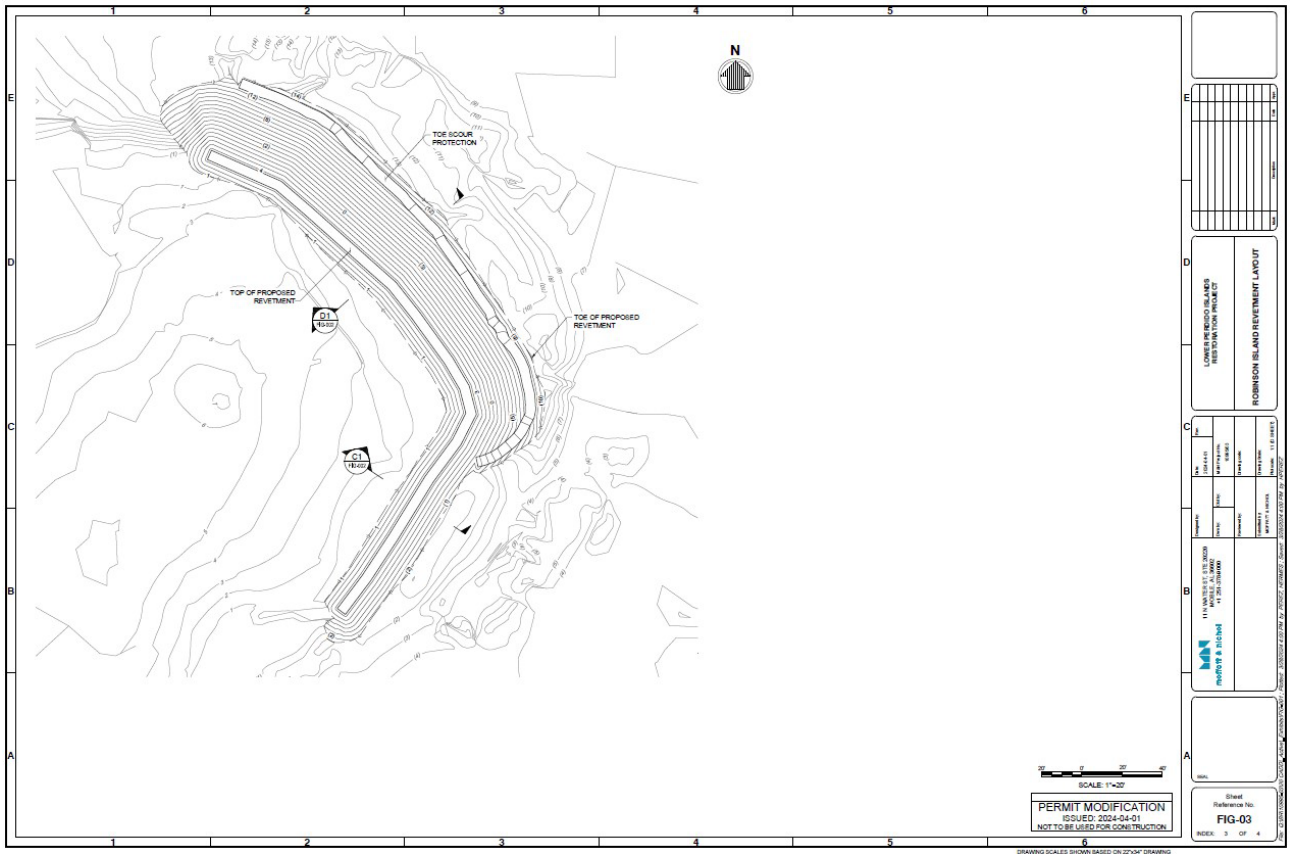
Walker Island West Project Elements



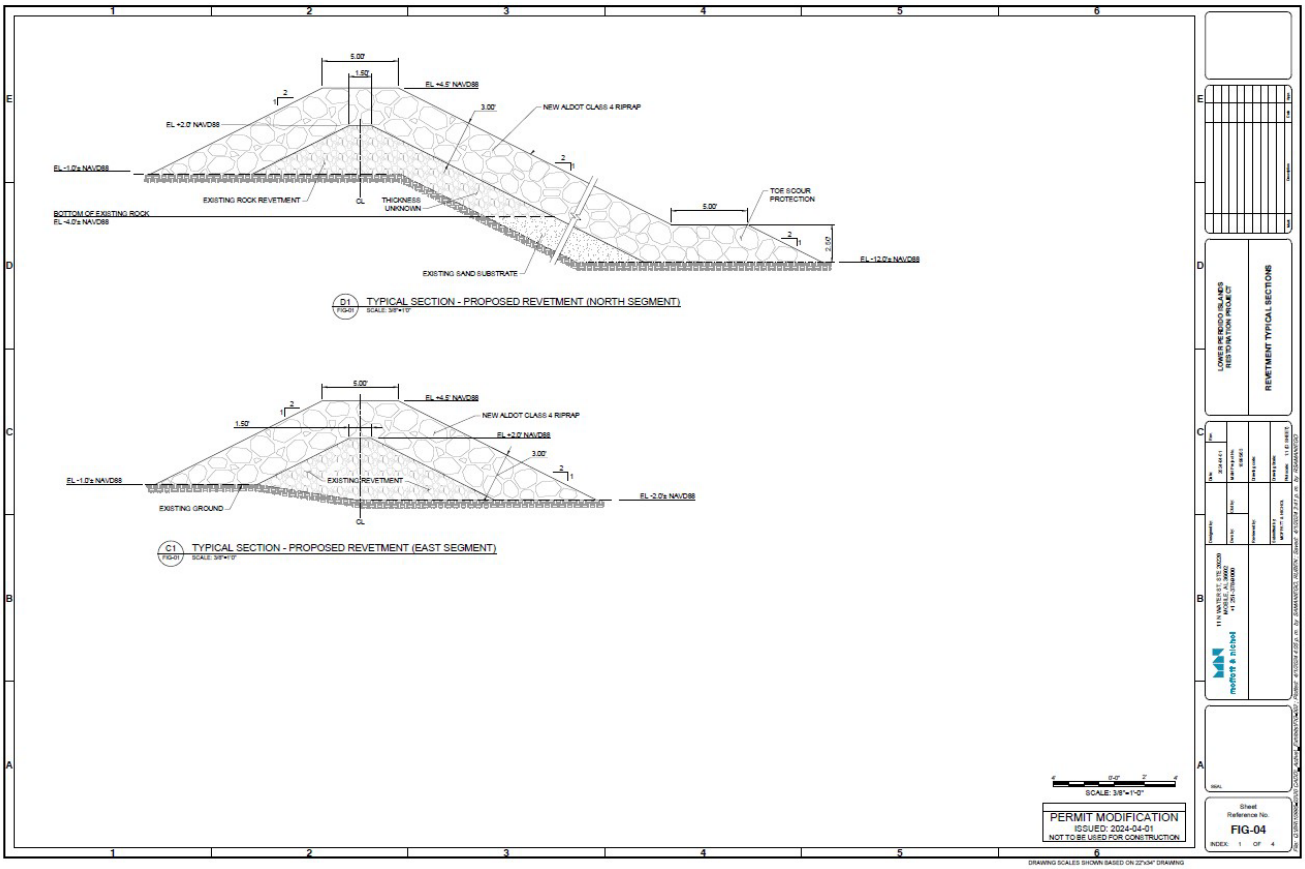
Walker Island East Project Elements



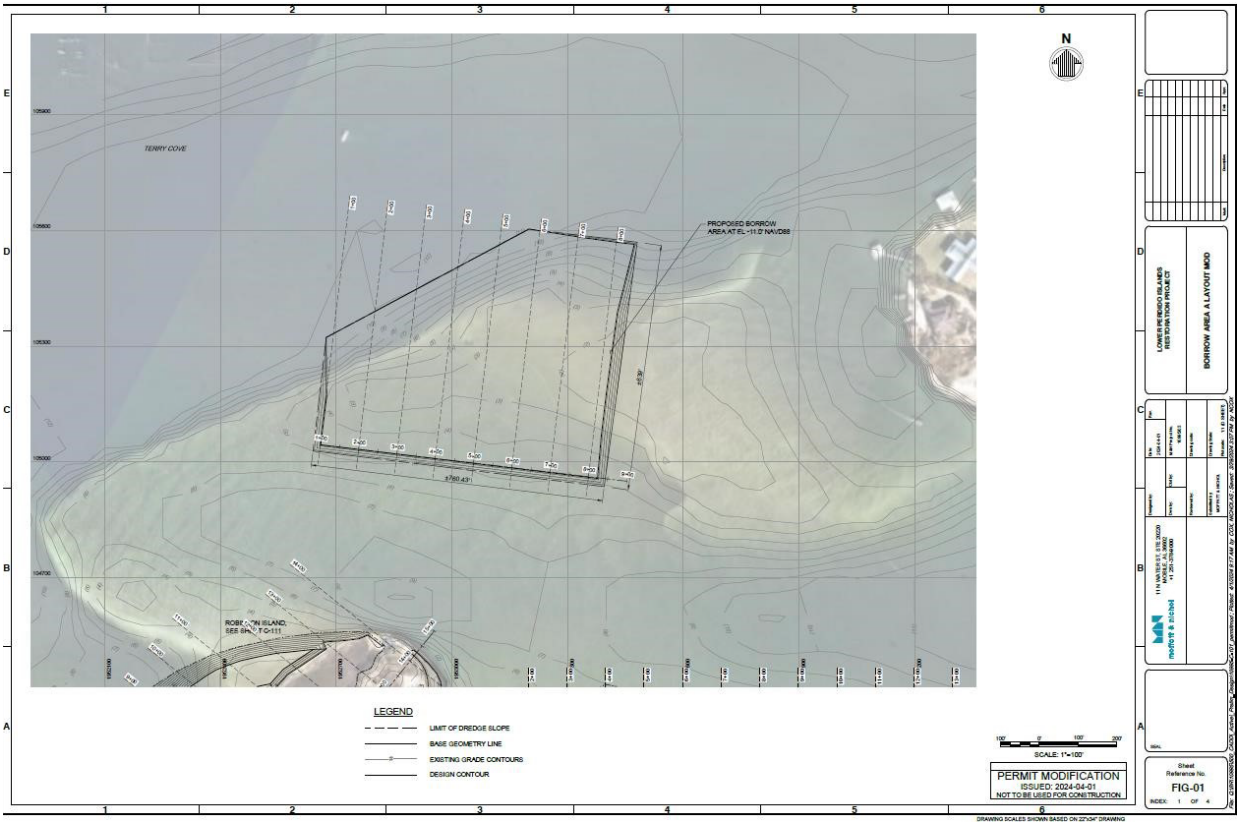
Robinson Island Project Elements



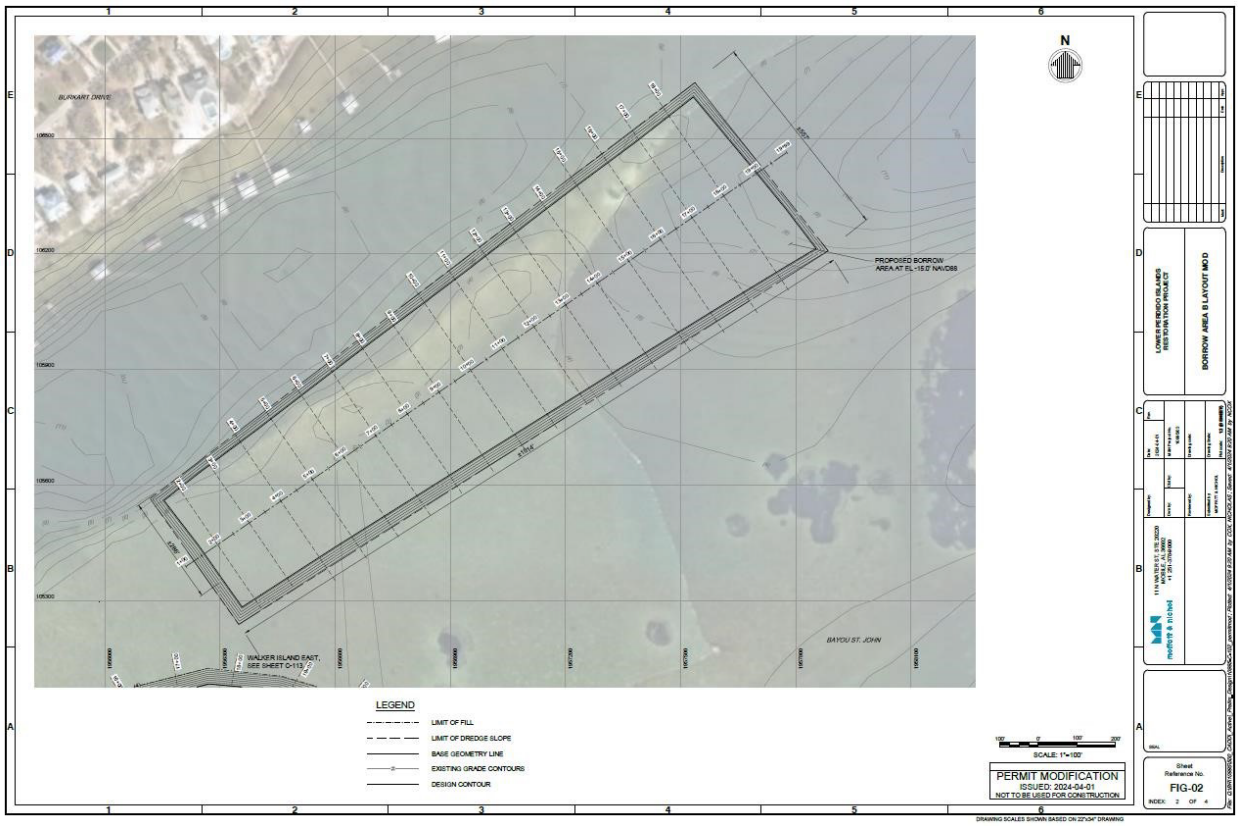
Robinson Island Revetment Layout Modification



Robinson Island revetment Typical Sections Modification



Borrow Area A Layout Modification. The shaded area is the increase to the borrow area that was requested in the Corps permit modification.



Borrow Area B Layout Modification. The shaded area is the increase to the borrow area that was requested in the Corps permit modification.

Attachment 2

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DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, MOBILE DISTRICT P.O. BOX 2288
MOBILE, AL 366284001

August 21, 2023

South Alabama Branch
Regulatory Division

SUBJECT: Department of the Army Application Number SAM-2022-00826-JCC, Lower Perdido Islands Restoration, Orange Beach, Baldwin County, Alabama
Project Code: 2023-0118265

U.S. Fish and Wildlife Service
Alabama Ecological Services Field Office
Attention: Mr. Bill Pearson
1208-B Main Street
Daphne, Alabama 36526

Dear Mr. Pearson:

This letter is in reference to an application by the City of Orange Beach to place fill material for the restoration of the Lower Perdido Islands within the Perdido Pass in Orange Beach, Alabama. This project has been assigned Number SAM-2022-00826JCC, which should be referred to in all future correspondence with this office. The project activity is near Latitude 30.285587 North, Longitude -87.551137 West; in Section 3, Township 9 South, Range 5 East; in Orange Beach, Baldwin County, Alabama.

The applicant proposes dredging and filling activities on and around Robinson Island and Walker Island and is requesting authorization to place material within subtidal and intertidal waters to enhance, restore, and create coastal marsh habitat within the Lower Perdido system using local sediment sources. An existing breakwater on the north side of Robinson Island would also be supplemented with additional rip rap material. Two borrow areas will be used to obtain approximately 308,000 cubic yards of material for construction. Borrow area A (5 acres) would be dredged to an elevation of -1 1 feet NAVD88 and Borrow Area B (17 acres) would be dredged to an elevation of -15 feet NADV88. Around 95,000 total plants are proposed to be planted after creation of the new coastal habitat on the project islands. The three material placement areas are a) Walker Island West, b) Walker Island East, and c) Robinson Island. The action area and proposed construction plans are depicted in the attached enclosures.

Based on a review of listed species with the potential to occur within the area, I have determined that the proposed project "May Affect, But is Not Likely to Adversely Affect" the eastern indigo snake (Drymarchon coupen) (T), red knot (Calidris canutus rufa) and piping plover (Charadrius melodus) (T), Kemp's Ridley sea turtle

(Lepidochelys kempil) and Loggerhead sea turtle (Caretta caretta) (T). While there are likely to be temporary noise and turbidity impacts to the action area during construction activities, the project purpose is to enhance and expand marsh and intertidal shoreline areas and will improve overall habitat quality and environmental conditions. Overall, implementation of this project will result in improved habitat quality and quantity that will positively affect and not adversely affect threatened and endangered species.

Finally, I have determined that the proposed project "May Affect, but is Not Likely to Adversely Affect" the West Indian manatee (Trichechus manatus) (T), in accordance with the current AL-FL Panhandle SLOPES agreement.

There is no designated critical habitat within the action area.

Effects of the proposed project include the potential short-term loss or degradation of suitable habitat and may result in direct harm due to construction-related disturbance/noise, equipment strikes, and turbidity generated in the adjacent waters. However, by raising elevations at strategic locations, reducing shoreline erosion, and increasing the resilience of the area to storms and wave energy, the applicant aims to protect and restore vulnerable marsh and intertidal habitat. Best management practices will be implemented during construction, including sediment dikes and turbidity curtains. All SAV that is to be impacted by the project will be replanted around the islands in shallow areas that will not be filled, and a long-term SAV mitigation adaptive management plan is being developed in conjunction with the National Marine Fisheries Service — Habitat Conservation Division.

We would appreciate your evaluation of the attached project information and receiving your comments or concurrence regarding our effects determination for the above referenced species. Should you need additional information, I may be reached at (251) 508-4266 or by e-mail at jessica.c.comeaux@usace.army.mil

Sincerely,

Digitally signed by Jessica Crochet Comeaux Date: 2023.08.2106:12:49

Jessica C. Comeaux
Senior Project Manager
Technical Regional Execution Center
Savannah Division, Regulatory Division
U.S. F 1Sh and Wildlife Service
1208-B Main Street — Daphne, Alabama 36526
Phone: 251-441-5181 Fax: 251-441-6222

Attachments

Based upon our records and the information provided in your letter, we concur with your findings that no federally listed species/critical habitat will be adversely affected by your project. If project design changes are made, please submit new plans for review. For specific techniques on how to minimize impacts to aquatic systems, please visit this website: ilttps:Äv ices-

https://www.fws.gov/project/best-management-pract

S

William J. Pearson, Field Supervisor

Date

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Date | 1

SEP 5 2023

Field Supervisor
Alabama Ecological Services Field Office