# FINDING OF NO SIGNIFICANT IMPACT

## Issuance of a Negotiated Agreement for Use of Outer Continental Shelf Sand from Borrow Area Shoal S for the Duval County, Florida Shore Protection Project

Pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR 1500-1508), and Department of the Interior (DOI) regulations implementing NEPA (43 CFR 46), the U.S. Army Corps of Engineers Jacksonville District (Corps) (lead agency), with the Bureau of Ocean Energy Management (BOEM) serving as a cooperating agency, prepared an Environmental Assessment (EA) in 2023 that reevaluates the use of Outer Continental Shelf (OCS) sand for the renourishment of the Duval County Shore Protection Project (SPP) located in Jacksonville Beach, Neptune Beach, Atlantic Beach, and Hanna Park, Florida (hereafter referred to as Project). BOEM contributed to the preparation of the 2023 EA, then conducted an independent review before adopting the document. The 2023 EA and this Finding of No Significant Impact consider the effects of the next planned use of Borrow Area Shoal S and the future use of any remaining volume (up to 3.6 mcy total) for periodic or emergency nourishment of the Duval County SPP until the borrow area is depleted (Attachment 1).

## Proposed Action

The purpose of the Project is to reduce future storm damage to coastal infrastructure, increase and maintain recreational opportunities, and improve environmental habitat along Duval County beaches. The Corps proposes to dredge up to 2.1 million cubic yards (mcy) of OCS sand for periodic nourishment of the Project in 2024. The Corps may use the borrow area for future periodic or emergency nourishment until depletion of the remaining volume in Borrow Area Shoal S. Borrow Area Shoal S is located about 6.5 miles offshore the city of Jacksonville Beach, FL.

The Project area consists of 10 miles of shoreline from St. Johns River Entrance southward to the Duval/St. Johns County line (Florida Department of Environmental Protection (FDEP) reference monument R-31 to R-80). Placement operations will occur between the south jetty of the St. Johns River and the Duval/St. Johns County line, including Mayport Naval Station, Hanna Park, and Atlantic, Neptune and Jacksonville Beaches from FDEP Monuments R-31 to R-80. The beach construction template consists of an approximate 135-foot-wide berm with an elevation of +11.0 ft Mean Low Water (MLW) (with +/- 0.5-ft tolerance) and a 20:1 slope from berm to the estimated toe of fill. The dune includes a crest of varying elevation between +14 and +16 ft North American Vertical Datum of 1988 (NAVD88) and nominal 3:1 seaward slope.

The Project was initially constructed (2.9 mcy) in 1978-1980. The Project has been renourished on seven subsequent occasions (in addition to periodic beach placement of material dredged from the Jacksonville Harbor Federal navigation project) with a cumulative volume of approximately 16.4 mcy placed on the beach. The most recent renourishments, using Borrow Area Shoal S, occurred in 2016-2017 and 2018-2019 following Hurricanes Matthew and Irma.

The 2023 EA analyzes the use of 2.1 mcy from Borrow Area Shoal S for a 2024 nourishment and any remaining borrow material for subsequent or emergency renourishment. The Corps anticipates a maintenance interval of approximately every four or five years; however, more frequent maintenance is possible if emergency repair or nourishment is needed.

BOEM's action is to enter into a three-party Non-competitive Negotiated Agreement (NNA) with the Corps and Duval County and authorize the use of up to 2.1 mcy of OCS sand (or a modified volume permissible under 30 CFR 583.345) for construction of the Project using sand from Borrow Area Shoal S. BOEM would decide separately to lease beyond the NNA term planned at this time (30 CFR 583.335) even though the 2023 EA and this FONSI consider the environmental effects of future use.

**Alternatives to the Proposed Action**

Previous environmental documents prepared for the Project identify beach nourishment as the preferred alternative to address coastal erosion and storm damage in Duval County. The 2023 EA considers four alternatives for the Project: 1) no action, 2) continued use of Borrow Area Shoal S, 3) use of Borrow Areas A1 and A2, and 4) use of Borrow Area B1. Two alternatives are fully analyzed in the 2023 EA. The no action alternative represents the conditions if no future beach nourishment occurred and is a comparison for other alternatives. BOEM would not enter into a negotiated agreement under the no action alternative. The preferred alternative in the 2023 EA is to use Borrow Area Shoal S to obtain beach compatible fill material for the renourishment of the Project.

Alternatives 3 and 4 were considered, but were eliminated from further evaluation. Alternative 3 (Borrow Areas A1 and A2) was not carried forward because the borrow area contains a limited amount of sand (0.9 mcy), and the amount would not fulfill the Project need. Alternative 4 (Borrow Area B1) was not carried forward due to concerns about sediment grain size compatibility. Geotechnical analysis concluded that the sediment has an average silt content over five percent. Sediment from Borrow Area B1 would not be suitable for beach placement according to the Florida "Sand Rule" (Florida Administrative Code (F.A.C.) 62B-41.007(2)(j)).

**Environmental Effects**

The Corps and BOEM previously evaluated effects of the Project in the following environmental documents:

- *1974 Final Environmental Impact Statement (EIS) Beach Erosion Control Project Duval County, Florida* (analyzes alternatives to beach nourishment)
- *1993 Environmental Assessment, Duval County Shore Protection Project Third Renourishment for Reaches 2-3-4, Duval County, Florida* (analyzes a previous OCS borrow area and placement impacts)

- 2005 *Environmental Assessment Duval County Beach Erosion Control (BEC) Project New Borrow Area* (analyzes a previous OCS borrow area and placement impacts)
- *2011 Environmental Assessment Use of Outer Continental Shelf Sand from the Duval Borrow Area in the Duval County (Florida) Shore Protection Project* (analyzes dredging, conveying, and placing sand from a previous OCS borrow area)
- *2015 Supplemental Environmental Assessment, New Borrow Area - Duval County Shore Protection Project, Duval County, Florida* (analyzes dredging, conveying, and placing of sand from Borrow Area Shoal S)
- *2019 Supplemental Environmental Assessment, Dunes and Other Resiliency Design Refinements, Shore Protection Projects in Nassau, Duval, St. Johns, and Brevard Counties, Florida* (analyzes dune, dune vegetation, sand fencing, and other beach access design changes in Duval County).

The Corps and BOEM prepared the 2023 EA to update the potential environmental effects associated with the continued use of Borrow Area Shoal S. The 2023 EA incorporates by reference the aforementioned documents. The Corps and BOEM identified a suite of environmental commitments necessary to avoid, minimize, and/or reduce and track any foreseeable adverse effects that may result from the Project. The Corps and Duval County are responsible for implementing all environmental requirements prior to, during, and after construction, as described in the 2023 EA (for dredging from Borrow Area Shoal S), or incorporated by reference from the 2015 and 2019 EAs (for dredging and conveyance from Borrow Area Shoal S).

*Significance Review*

Pursuant to 40 CFR 1501.3(b), BOEM analyzed the significance of potential effects of the proposed action considering both the potentially affected environment and the degree of effects. Connected actions (defined per 40 CFR 1501.9(e)(1)), including on-and-off site mobilization and beach placement activities, were considered.

BOEM considered the affected area and resources potentially present in both spatial and temporal context. The proposed action is considered site-specific. The area of direct fill placement includes dry sandy beach, intertidal flat/surf zone, and shallow subtidal habitat. Borrow Area Shoal S includes similar sandy submerged habitat. Effects would be limited to the placement site (including the pipeline corridors for conveying sediment to the beach) and the immediate dredging area, both of which are dominated by storms and physical processes of waves and currents. Effects of the Project would generally be limited to the 6-month construction window and the time interval associated with equilibration of the placement material, recovery of the disturbed borrow area, and any habitat change along the beach.

BOEM evaluated the following when evaluating the degree of effects:

*(i) Short- and long-term effects*

Potential effects associated with the Project would be localized, short-lived, and generally reversible. The only long-term effect from the removal of beach compatible sand from Borrow Area Shoal S would be related to physical geomorphologic change due to the removal of OCS sand and limited infilling or reshaping expected. Borrow Area Shoal S was last dredged in 2019, and 2.4 mcy was removed. The total remaining volume for Borrow Area Shoal S is 3.6 mcy.

The Corps proposes to minimize impacts and maximize efficiency of removal by dredging to a target -58-foot cut depth (NAVD88). Much of the northern portion of the borrow area features a few feet of sand above -58 feet. Without some allowance to deviate below the 58-foot depth, the dredge may not be able to efficiently recover the remaining shallow volume within the borrow area. Therefore, while the allowable cut depth is -58 feet, there may be some isolated areas that may have slightly deeper disturbance, implicating the near-surface substrate since below -58 feet is siltier, finer sand. No dredging will intentionally occur below -58 feet. Dredging to the full -58 feet will allow for the draghead to remain on the seafloor for longer periods of time, maximizing the quantity of sand removed from this borrow area, and decreasing the risk of entrainment to marine fauna (e.g., sea turtles). The Corps or its contractor must otherwise limit cut thicknesses to avoid the creation of pits or deep furrows. Impacts to wave and current patterns are not anticipated, and any effect is expected to be limited to the immediate dredging area. The continued removal of sand from Borrow Area Shoal S over multiple dredging cycles could change the shape and characteristics of the bottom habitat in that limited area. The effects would not be significant since Borrow Area Shoal S is one shoal associated with a larger shoal complex that has similar habitat for potentially displaced species.

Dredging of Borrow Area Shoal S could temporarily impact benthic epifauna and infauna and result in the temporary, localized loss of some infaunal species. The dredging design would preserve similar sediment types throughout most of the borrow area ensuring that the sediments exposed by dredging are similar to previous surface sediments and suitable for expected rapid benthic recolonization. Recruitment and recolonization would occur in the short-term after dredging given similar species in surrounding habitat, including areas avoided for submarine cables. Recovery of the benthic population is expected within 1 to 2 years after dredging; therefore, the potential for significant or chronic impact would be avoided even if dredging occurs again. Similar impacts are anticipated in the nearshore soft bottom communities of the beach placement site, and intertidal areas would recover through recruitment from surrounding communities.

Current sea turtle nesting opportunities along the Project are diminished because of long-term chronic erosion and frequent storm damage, resulting in lower-quality habitat. Despite this, loggerhead, green, and leatherback sea turtles nest within the Project area. Hawksbill and Kemp’s ridley sea turtles occur in coastal waters off Duval County, but do not currently nest along the shoreline. The sand composition of Borrow Area Shoal S meets the State of Florida’s sediment criteria for native beach compatibility.

Construction activities and staging of equipment may affect existing dune vegetation; however, the Project includes revegetation of dune areas that would be disturbed. Nesting habitat may be affected over the short-term, until the beach and dune system equilibrate post-construction and provide improved habitat. The beach placement area lies within designated critical habitat unit LOGG-T-FL-09, and the marine waters adjacent to the beach are within designated nearshore reproductive and migratory critical habitat unit LOGG-N-14. These critical habitats are not likely to be adversely affected. The Corps will avoid and/or minimize effects to protected species and designated critical habitat in accordance with requirements outlined the U.S. Fish and Wildlife Service (USFWS) Statewide Programmatic Biological Opinion (SPBO) for beach placement activities (2015), the USFWS Piping Plover Programmatic Biological Opinion (P3BO, 2013), and the National Marine Fisheries Service (NMFS) South Atlantic Regional Biological Opinion (SARBO, 2020).

NMFS has designated Essential Fish Habitat (EFH) in and adjacent to the Project area for various demersal, pelagic, and highly migratory species. The Project will have temporary effects on EFH from dredging and placement activities. The effects would not be significant, as there is comparable, undisturbed habitat adjacent to the borrow area. The Corps will implement avoidance and minimization measures to minimize effects on those fish species and fish habitat including but not limited to: adherence to the Water Quality Certification conditions at the edge of a 150-meter (492 ft) mixing zone, avoiding/minimizing construction overlap with peak recruitment windows for benthic infaunal assemblages and federally managed species, and avoidance of hard bottom.

Other expected short-term effects from the Project include interruptions of shorebird foraging and resting at the placement site, noise and beach access closure effects on the local socio-economics and aesthetics, impediments to recreational usage at the placement site, restricted boating navigation at the dredge and placement sites, increases in turbidity at the construction sites, localized and minor noise level increases at the dredge site, and public safety risks posed by the construction equipment. These effects are likely limited to the 6-month construction period.

*(ii) Beneficial and adverse effects*

BOEM considered potential effects to the physical environment, biological resources, cultural resources, and socioeconomic resources. Some coastal sand dependent species (*e.g.*, native and migratory shorebirds, sea turtles) may experience temporary disruptions to foraging and nesting during and following construction. However, the birds and sea turtles that use the beach for foraging or nesting should benefit in the long-term from higher quality habitat. Duval County plans to implement standard shorebird monitoring (as required by the SPBO and P3BO if the project timing overlaps with the nesting season) and sea turtle nesting protocols (during the portion of the project which overlaps with nesting season). Dune vegetation would help create higher quality habitat to improve ecosystem function.

Dredging activities within Borrow Area Shoal S overlaps with the distribution of threatened loggerhead (Northwest Atlantic Distinct Populations Segment (DPS)) and

green sea turtles (North Atlantic DPS), and endangered leatherback, hawksbill, and Kemps Ridley sea turtles protected under the Endangered Species Act (ESA). Placement of sediment within the designated beach placement site may affect nesting sea turtles (loggerhead, leatherback, and greens) and piping plovers. Adherence to state and federal requirements, including sediment compatibility requirements, dredging operational constraints, endangered species observers, sea turtle nest monitoring, etc. would avoid and/or minimize effects. The Project would not occur in "optimal" piping plover habitat or season and is not likely to adversely affect the piping plover. The threatened West Indian manatee occurs in coastal and estuarine habitat within Duval County where they primarily use inlet estuaries and shallow coastal waters to migrate and forage. The dredge and support vessels associated with the Project will be operating in deeper waters offshore and not in these migratory and foraging habitats. The Corps will also implement standard manatee construction conditions to avoid the potential for take.

Seafloor-disturbing activities (*e.g.*, dredging, anchoring, pipeline placement, *etc.*) would occur during proposed construction activities. The Corps conducted cultural resources and hard bottom resource clearance surveys in Borrow Area Shoal S, pipeline corridors, and the beach placement area. Within the borrow area, three magnetic anomalies were identified and must be avoided by a 300 ft radius. Within the nearshore pipeline corridors, 158 magnetic anomalies were identified. Five were considered isolated, and 14 clusters were considered potentially significant. All 19 anomalies were recommended for avoidance of a minimum distance of 164 ft from the outer extent of the magnetic anomalies. No hard bottom resources were identified in the borrow area or placement area. No adverse effects to historic or pre-contact resources or hard bottom resources within the borrow area, placement area, or pipeline corridors are expected with implementation of recommended avoidance measures.

The EA did not describe two submarine telecommunications cables that cross into Borrow Area Shoal S (Appendix A). The Corps confirmed the location of one in-use submarine cable by magnetometer survey. The in-use utility cable will be avoided by a minimum of 200 ft on all sides. A retired AT&T cable, which AT&T provided location information for, could not be located or confirmed to be present by magnetometer survey. The retired cable will be avoided by a minimum of 164 ft on all sides.

Beach placement would not directly bury pre-construction onshore coquina outcroppings, or indirectly bury pre-construction nearshore hard bottom inshore of the Equilibration Toe of Fill (ETOF) through beach profile equilibration and along-shore/ cross-shore transport of sediment. Project construction activities are required to meet all state Water Quality Certification conditions, including turbidity monitoring, in accordance with FDEP Joint Coastal Permit (JCP) requirements.

The Project could increase the capacity for recreational activity (*e.g.*, beach access, surfing, shore fishing, wildlife viewing). The Duval County shoreline is already at near maximum capacity, so increased potential for development is not likely.

*(iii) Effects on public health or safety*

Significant effects to public health and safety are not expected. The Project would provide for increased recreational opportunity from the improved beach and dune habitat. Temporary disruption to recreation would occur in small alongshore stretches as the construction progresses along the beach. The Project would result in improved visual amenity and long-term recreational improvements. Construction of the beach would provide protection of existing infrastructure as well. Emissions from construction equipment may temporarily affect air quality in the immediate vicinity of operations. Noise would temporarily increase at the placement locations during construction, and then would return to ambient levels after project completion. The construction equipment at the beach placement site could pose a minor public safety risk. BOEM used the U.S. Environmental Protection Agency's EJscreen to determine that there are no minority or low-income populations in the Project area; therefore, the Project would not disproportionately affect populations outlined in Executive Order 12898.

The Corps completed a review of potential munitions and explosives of concern (MEC) in Borrow Area Shoal S in 2022. The 2022 MEC Probability Assessment noted that the closest source of MEC is the Chicopit Bombing Target, located approximately 6 miles from the Project area. The MEC utilized at the Chicopit Bombing Target were miniature practice bombs (AN-Mk 5, AN-Mk 23, AN-Mk 43) with spotting charges (AN-Mk 4). During previous construction cycles (2016 and 2018), Mk-23's, flares, and small arm ammunition were discovered during dredging. Since there is no known bombing target in the borrow area, the Corps surmised that MEC items found were possibly dumped. MEC items found during the 2016/2018 projects were non-fragmenting producing items. The amount of MEC dramatically decreased during the 2018 project after surficial material was removed. BOEM also reviewed the unexploded ordnance data on the Marine Cadastre and found no Formerly Used Defense Site Locations or areas/locations of know unexploded ordnance in the Project placement area, borrow area, or pipeline corridors.

*Effects that would violate a Federal, State, Tribal, or local law protecting the environment*

ESA and Magnuson-Stevens Fishery Conservation and Management Act consultations have been completed. The Corps and BOEM determined that beach placement of sediment associated with the Project is within scope of the USFWS SPBO (revised 2015) and 3PBO (2013). The Corps and BOEM have determined that dredging activities associated with the Project are within scope and will operate under the NMFS SARBO (2020). The Corps will comply with all relevant reasonable and prudent measures (RPMs) and associated terms and conditions (T&Cs).

The Project complies with the Marine Mammal Protection Act. Marine mammals are not likely to be adversely affected by the Project and incorporation of safeguards to protect threatened and endangered species during project construction (*e.g.*, vessel speed requirements, protected species observers, etc.) would also protect non-listed marine mammals in the area.

Migratory birds may experience minor, short-term interruptions to foraging or resting activities linked to prey smothering or turbidity increases. The Corps and Duval County will implement measures to avoid effects to migratory birds, hatchlings, or eggs along with pre- and post-project monitoring requirements.

The Corps and BOEM coordinated with the Florida Division of Historical Resources State Historic Preservation Officer (SHPO) and Tribal Historic Preservation Officers (THPOs), as required by Section 106 of the National Historic Preservation Act. The SHPO and THPOs concurred with the determination that the Project would have no adverse effect to historic properties listed, eligible, or potentially eligible for listing in the National Register of Historical Places provided avoidance of the nearshore targets. The Corps will immediately cease operations and notify BOEM and SHPO if an unexpected discovery occurs. The Corps issued a Notice of Availability to potentially implicated tribes and other interested stakeholders to notify them of the Project and opportunity to comment on the EA.

The FDEP issued a JCP modification for the Project (No. 0228528-001-JC). The JCP constitutes a finding of consistency with Florida's Coastal Management Program, as required by Section 307 of the Coastal Zone Management Act (CZMA); the JCP also constitutes certification of compliance with Florida water quality standards pursuant to Section 401 of the Clean Water Act (CWA) (33 U.S.C. 1341).

**Consultations and Public Involvement**

The Corps made the EA available for public review in June 2023. The Corps and BOEM considered all comments and revised the EA as appropriate (EA Appendix B). This BOEM Finding will be made available to the public on boem.gov.

**Mitigation and Monitoring**

The Corps and Duval County are responsible for complying with all mitigation measures and monitoring requirements engendered by Federal, State, Tribal, and local laws, including those identified in the 2023 EA and related consultations (EA Attachment 2). The Corps will prepare an environmental compliance matrix to document and track all environmental mitigation requirements and identify roles and responsibilities for implementation to ensure compliance prior to, during, and after construction. Additionally, the dredging contractor will be required to provide an environmental protection plan that verifies compliance with relevant environmental requirements. Implementation of mitigation measures and monitoring requirements.

Any mitigation or monitoring uniquely specified by BOEM in its negotiated agreement is done pursuant to the authority established by the Outer Continental Shelf Lands Act and 30 CFR 583. Other Project mitigation is engendered by various authorities, including the vested authority of the Corps, as well as environmental laws, such as ESA, CWA, and CZMA. Other federal or state agencies shall be responsible for enforcement of other mitigation measures. BOEM may terminate its authorization, or refer the Corps to

enforcing agencies, if the Corps does not comply with mitigation measures (30 CFR 583).

**Conclusion**

BOEM considered the consequences of entering into a negotiated agreement authorizing use of OCS sand from Borrow Area Shoal S in this Project. BOEM contributed to the preparation of the 2023 EA and then conducted its own independent review before adopting it. BOEM finds that the EA complies with the relevant provisions of the CEQ regulations implementing NEPA, DOI regulations implementing NEPA, and other Bureau requirements.

Based on the evaluation of potential effects and associated mitigation measures discussed in the 2023 EA, BOEM finds that entering into a negotiated agreement, with the implementation of the mitigating measures, does not constitute a major Federal action significantly affecting the quality of the human environment, in the sense of NEPA Section 102(2)(C), and would not require preparation of an EIS.

JEFFREY REIDENAUER

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Date: 2023.08.27 12:06:49 -04'00'

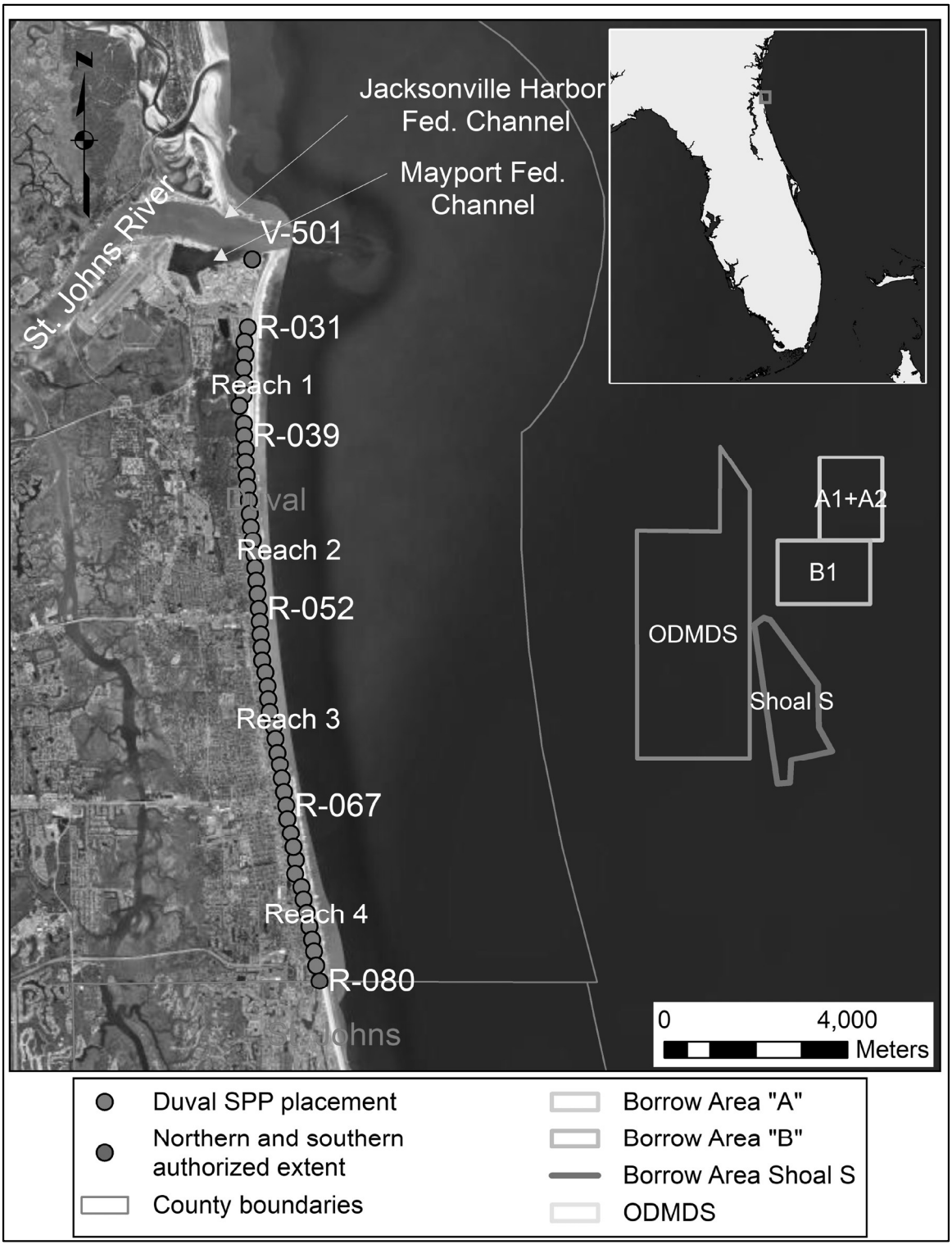
Jeffrey Reidenauer
Chief, Marine Minerals Division

Date

**Attachments**

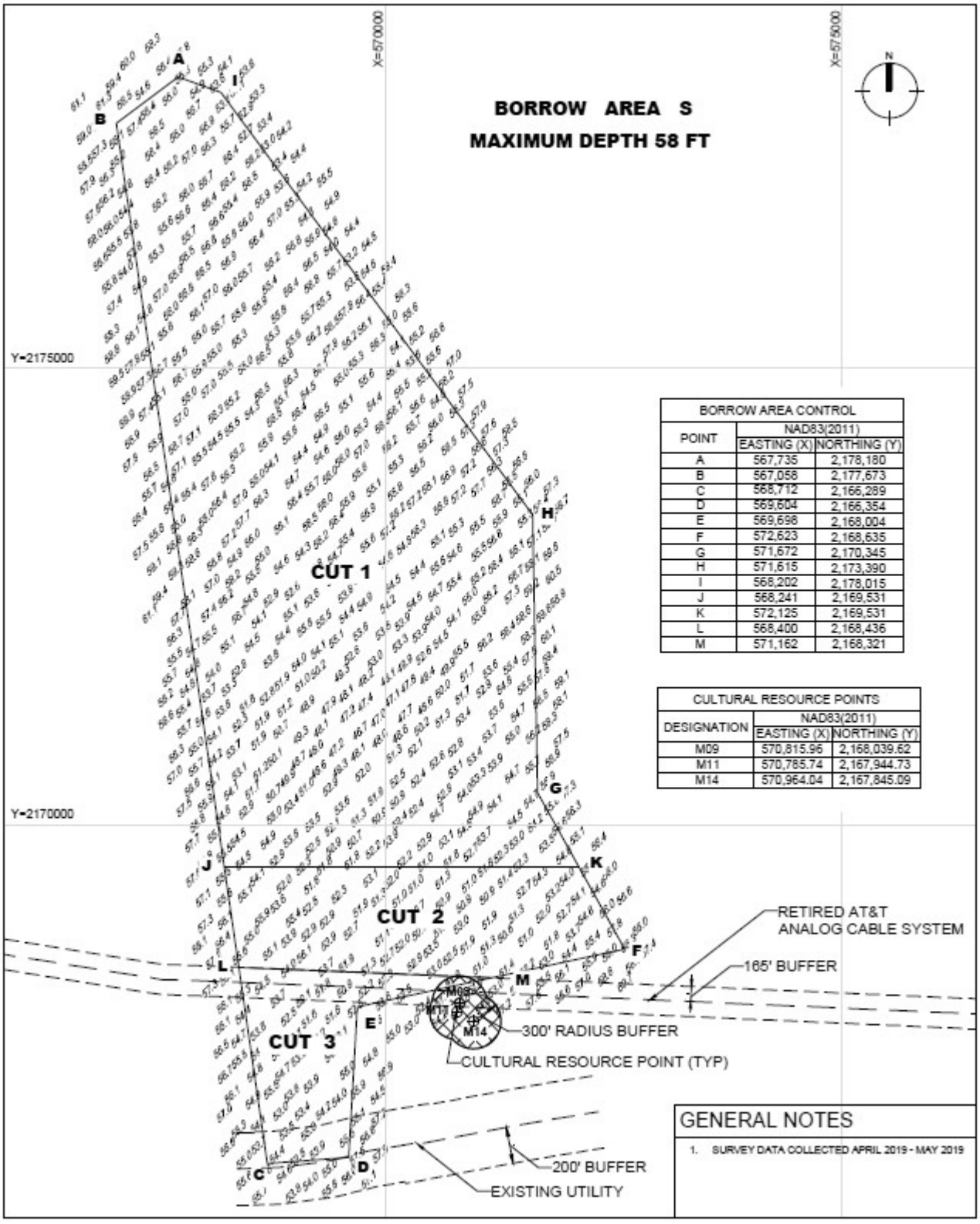
Attachment 1 – Project Maps
Attachment 2 – 2023 Environmental Assessment

# ATTACHMENT 1
# PROJECT MAPS




**Project Location and Placement Area**

Attachment 1




| BORROW AREA CONTROL | | |
|---|---|---|
| POINT | NAD83(2011) | |
| | EASTING (X) | NORTHING (Y) |
| A | 567,735 | 2,178,180 |
| B | 567,058 | 2,177,673 |
| C | 568,712 | 2,166,289 |
| D | 569,604 | 2,166,354 |
| E | 569,698 | 2,168,004 |
| F | 572,623 | 2,168,635 |
| G | 571,672 | 2,170,345 |
| H | 571,615 | 2,173,390 |
| I | 568,202 | 2,178,015 |
| J | 568,241 | 2,169,531 |
| K | 572,125 | 2,169,531 |
| L | 568,400 | 2,168,436 |
| M | 571,162 | 2,168,321 |

| CULTURAL RESOURCE POINTS | | |
|---|---|---|
| DESIGNATION | NAD83(2011) | |
| | EASTING (X) | NORTHING (Y) |
| M09 | 570,815.96 | 2,168,039.62 |
| M11 | 570,785.74 | 2,167,944.73 |
| M14 | 570,964.04 | 2,167,845.09 |

GENERAL NOTES

1. SURVEY DATA COLLECTED APRIL 2019 - MAY 2019

# Borrow Area Shoal S

# ATTACHMENT 2
# 2023 ENVIRONMENTAL ASSESSMENT FOR DUVAL COUNTY, FLORIDA SHORE PROTECTION PROJECT

August 2023

# FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

# Duval County, Florida Shore Protection Project, Duval County, Florida

U.S. Army Corps of Engineers
JACKSONVILLE DISTRICT

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# FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
# Duval County, Florida Shore Protection Project
# Duval County, Florida

# List of Tables



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# List of Appendices (Available Upon Request)

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# FINAL SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
# Duval County, Florida Shore Protection Project
# Duval County, Florida

# 1 INTRODUCTION

## 1.1 INTRODUCTION

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is proposing to find a sand source for continued use of up to 2.1 million cubic yards (MCY) of material for each periodic or emergency renourishment event for the beach and sand dune renourishment of the Duval County, Florida Shore Protection Project (SPP). The non-Federal sponsor (NFS) is the City of Jacksonville. Because the proposed offshore sand borrow areas are in Federal waters (>3 nautical miles offshore) on the Outer Continental Shelf (OCS), the Bureau of Ocean Energy Management (BOEM) is acting as a cooperating agency on this National Environmental Policy Act (NEPA) document. BOEM, under the authority delegated by the Secretary of the Interior, pursuant to Section 8(k)(2) of the Outer Continental Shelf Lands Act (43 U.S.C. § 1337(k)(2)) may authorize the use of OCS sand resources. Their proposed action is the issuance of a negotiated agreement to authorize ongoing, periodic use of one or more sand borrow sources so that the Corps, along with the project's NFS, can obtain sand resources for the SPP.

## 1.2 PROJECT AUTHORITY

In 1965, a shore protection project in Duval County, including approximately 10 miles of the Atlantic shoreline in Duval County, from the St. Johns River to the Duval – St. Johns County boundary, was authorized by Section 301 of the River and Harbor Act of 1965 (Public Law (PL) 89-298). The project authorized a protective and recreational beach with a level 60 feet wide berm at 11 feet above mean low water (MLW). Periodic nourishment was authorized for the first 10 years of project life. Renourishment was accomplished when needed and future renourishment requirements were based on past losses.

The Duval County, Florida Shore Protection Project Section 934 Study Supplement to the Reevaluation Report, approved by the Assistant Secretary of the Army for Civil Works (ASA(CW)) in February 1992, extended Federal participation in cost sharing to 50 years, or until 2028. This report also recommended keeping the authorized project at a 60-foot berm. Additionally, the report outlined the performance of beach dunes (such as fencing and grassing, and resultant sand accumulation) between 1986 and 1989 following the 1986 renourishment. The report recommended that incorporation and maintenance of a dune feature with sand fencing and vegetation would be at a 100% NFS cost for Operation, Maintenance, Repair, Replacement and Rehabilitation.

The Water Resources Development Act of 2022 (WRDA) authorizes the Corps to extend the end of Federal participation to 2040. However, Federal participation has not yet been extended to 2040, so the current period of analysis for this Supplemental Environmental Assessment (SEA) extends until 2028.

The Duval County, Florida Shore Protection Project Engineering Documentation Report (EDR) Dune Resilience (Corps, 2019a) and a Final SEA for Dunes and Other Resiliency Design Refinements at SPPs in Nassau, Duval, St. Johns, and Brevard Counties (Corps, 2019b) were completed in 2019. The purpose of the EDR was to document how the Duval County SPP could be adapted within the existing project authority to increase resilience. The recommended design changes included dune incorporation with vegetation, vehicle access modifications, and pedestrian access modifications with sand fencing. These design changes were minor as they did not increase the total volume of sand to be placed over the period of federal participation or total project cost. Following the one-time construction of the pedestrian and vehicle access modification (planned to occur during the upcoming renourishment event), an updated Operations and Maintenance (O&M) Manual will be provided to the NFS for maintenance of the project as modified. The Final SEA for the resiliency effort was prepared in accordance with NEPA to evaluate the design changes to incorporate the resiliency features into existing Federal SPPs in Nassau, Duval, St. Johns, and Brevard counties.

The Corps proposes to find a sand source for continued use of up to 2.1 MCY of material for each periodic or emergency renourishment event for the beach and sand dune renourishment of the Duval County, Florida SPP. This includes Borrow Area Shoal S (also referred to as "Borrow Area F" in prior environmental documents), which has been the subject of prior NEPA assessments (Corps, 2015), Borrow Area "A" (which includes A1+A2), and Borrow Area "B" (B1). Both Borrow Areas "A" and "B" have been the subject of prior NEPA assessments (BOEM, 2011; Corps, 2005). BOEM's action for continued use of borrow areas for beach and sand dune renourishment of the Duval County SPP is to authorize the use of sand from OCS sand borrow areas for the project under the OCS Lands Act (OCSLA), 43 United States Code (U.S.C.) § 1337(k)(2). In 1994, OCSLA was amended to allow BOEM to convey, on a noncompetitive basis, the rights to OCS sand, gravel, or shell resources for use in a program for shore protection, beach restoration, or coastal wetlands restoration undertaken by a Federal, State, or local government agency (43 U.S.C. 1337(k)(2)(A)(i)).

Prior leases and attendant NEPA documentation for the use of OCS offshore sand for renourishment of the Duval SPP include Minerals Management Service (MMS) leases OCS-A-0460 (2005), OCS-A-0479 (2011), and BOEM lease OCS-A-0511 (April 2016, amended May 2017 and May 2018). The former two leases are for Borrow Area "A" (A1+A2) north of Borrow Area Shoal S; the latter lease is for Borrow Area Shoal S used in 2016-17 and in 2018-19.

## 1.3 PROJECT LOCATION

The project area for the potential borrow sources is approximately 6.5-8.5 miles east of Jacksonville Beach within federal waters on the OCS in the Atlantic Ocean approximately 7.5-10 miles southeast of the St. Johns River entrance. This area contains Borrow Area Shoal S, Borrow Area "A" (A1+A2), and Borrow Area "B" (B1) (see Figure 1-1). The Duval County SPP, Mayport and Jacksonville Harbor federal navigation channels, and the Jacksonville Harbor Ocean Dredged Material Disposal Site (ODMDS) are all located within the vicinity of Borrow Area Shoal S, Borrow Area "A", and Borrow Area "B"; the closest distance the ODMDS is located from Borrow Area Shoal S is approximately 850 feet (Figure 1-1).

The authorized Duval County SPP consists of approximately 10 miles of Atlantic shoreline starting in the north at the St. Johns River south jetty (designated by the Florida Department of Environmental Protection (FDEP) as Virtual Range Monument V-501) to the Duval County - St. Johns County line (FDEP Range Monument 80 (R-80)) in the south (Figure 1-1). The area located

between the south jetty to FDEP R-31 is Mayport Beach and is maintained by the U.S. Navy. The remainder of the SPP (R-31 through R-80) is maintained by the NFS. This covers approximately half of the Duval County shoreline. From north to south in approximately 2.5-mile increments Reach 1 (R-31 to R-39) spans from Mayport to Hanna Park, Reach 2 (R-39 to R-52.7) consists of Atlantic Beach, Reach 3 (R-52.7 to R-67) spans from Atlantic Boulevard to Beach Boulevard (Neptune Beach and part of Jacksonville Beach), and Reach 4 (R-67 to R-80) spans from Beach Boulevard to the Duval-St. Johns county line (Figure 1-1).

## 1.4 PROJECT BACKGROUND AND HISTORY

Chronic erosion has been a problem in Duval County since the mid-Century and engineering responses to address erosion have been made since then as well (Corps, 1991). Initial construction of the Duval County SPP began in 1978 and was completed in 1980 to facilitate shoreline stabilization and restoration of the proper ecological function of the beach. Multiple beach nourishments have been executed since initial construction.

The most recent restorations of the Duval County SPP were completed in March 2017 and February 2019 as routine renourishment and emergency rehabilitation under PL 84-99. This was done using Flood Control and Coastal Emergency (FCCE) funds in response to damages caused by Hurricanes Matthew and Irma. Both project renourishments used sand from OCS Borrow Area Shoal S, pursuant to BOEM lease OCS-A-0511 (April 2016, amended May 2017 & May 2018).

From September 2016 through March 2017 (both prior to and after Hurricane Matthew), 1,068,314 cubic yards (CY) of sand were placed on the beach and used to restore the dunes (Olsen Associates, inc., 2017). Following completion of that project, Hurricane Irma made landfall along the Southwest Florida coast and caused extensive damage to the project in September 2017. Subsequent FCCE rehabilitation placed 777,847 CY of sand on the beach between R-33.5 and R-80, plus 90,156 CY to restore the dune template (Olsen Associates, inc., 2019). All renourishment sand for the 2016-17 and 2018-19 projects used Borrow Area Shoal S. Borrow Area Shoal S had not been previously used before the 2016-19 renourishments. Project renourishments prior to 2016 used OCS borrow areas north of Borrow Area Shoal S, including Borrow Area “A” (A1+A2), per prior leases OCS-A-0460 and OCS-A-0479 (Figure 1-1).

Post-dredging surveys after the combined 2016-17 and 2018-19 renourishments identified approximately 3.6 million CY of sand still available from Borrow Area Shoal S (Olsen Associates,

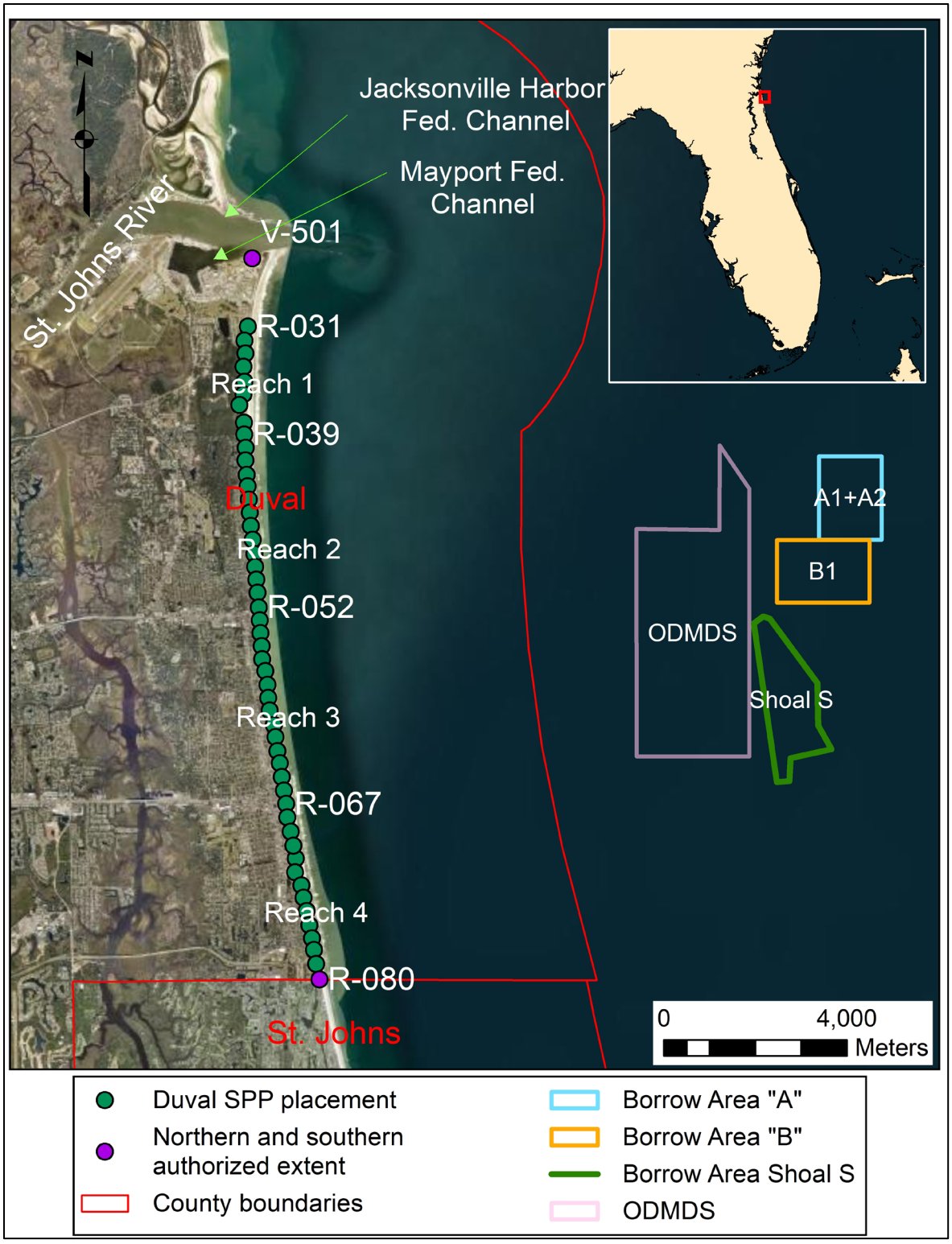


**Figure 1-1. Map of project area. Shoreline placement area (green dots), separated into each Reach indicated on map, is contained within end-member R-monument boundaries (purple dots).**

inc., 2019). Of that amount, approximately 3.1 MCY remain within the southern portion of the borrow area which was not extensively used during the prior 2016-17 and 2018-19

renourishments (Olsen Associates, inc., 2019). Additional information on project background and history can be found in the prior NEPA documents listed in Section 1.4.2 of this SEA.

Aside from Borrow Area Shoal S used in 2016-19, the project's other previously leased OCS borrow areas include Borrow Area "A" (A1+A2), estimated to contain up to about 0.9 MCY of sand after its most recent 2011 dredging, and Borrow Area "B" (B1), estimated to contain about 5.7 MCY of sand which has not yet been dredged (Olsen Associates, inc., 2019). Both of these OCS borrow areas are located immediately north of Borrow Area Shoal S (Figure 1-1).

### 1.4.1 RELEVANT ISSUES

This SEA updates previous NEPA documents listed in Section 1.4.2. Additionally, this SEA evaluates whether changes to the proposed action (i.e., continued use of a sand source), new circumstances not previously analyzed, and information not previously available contribute to a determination of significantly different environmental effects (43 Code of Federal Regulations (CFR) 46.120). The effects of dredging the borrow areas, as well as transporting and placing sand on the Duval County shoreline, have been evaluated in previous NEPA documents (see Section 1.4.2) and are hereby incorporated by reference. The following issues were identified as relevant to the proposed updates and are appropriate for further evaluation: (1) sediment characteristics; (2) newly listed threatened and endangered (T&E) species; (3) essential fish habitat; (4) air quality; and (5) Unexploded Ordnances (UXO)/Munitions of Explosive Concern (MEC).

This SEA, prepared by the Corps and BOEM as cooperating agencies, supplements existing analyses and updates potential environmental effects resulting from renourishment and rehabilitation of the beach with sand from the borrow area. The Corps and BOEM identified and reviewed new information to determine if any resources and effects previously analyzed should be re-evaluated or if the new information could alter previous effects determinations. This SEA further confirms and elaborates on the analyses or information presented in existing NEPA documents, but it does not change the conclusions of any prior analyses. The existing analyses are still valid and are incorporated by reference.

### 1.4.2 RELATED ENVIRONMENTAL DOCUMENTS

Related NEPA documents for the project include the following, which are available for download at the Corps' environmental documents website[1]:

- 1974 Final Environmental Impact Statement (EIS) Beach Erosion Control Project Duval County, Florida (analyzes alternatives to beach nourishment).
- 1991 Duval County, Florida, From St. Johns River to the Duval – St. Johns County Line, Shore Protection Project, Section 934 Reevaluation Report with Environmental Assessment (extends period of federal participation from 10 years to 50 years)[2];
- 1993 Environmental Assessment, Duval County Shore Protection Project Third Renourishment for Reaches 2-3-4, Duval County, Florida & Finding of No Significant Impact;
- 2005 Duval County Beach Erosion Control (BEC) Project New Borrow Area Finding of No Significant Impact and Environmental Assessment (analyzes placement impacts);

[1]The Corps' environmental website can be accessed here: https://www.saj.usace.army.mil/About/Divisions-Offices/Planning/Environmental-Branch/Environmental-Documents/. Click "Duval" or "Multiple Counties" and scroll down to the project name.

[2]Found on the website with the Supplement to the Reevaluation Report (January 1992).

- 2011 Finding of No Significant Impact Use of Outer Continental Shelf Sand from the Duval Shoal S Borrow Area in the Duval County (Florida) Shore Protection Project (analyzes placement impacts) (BOEM, 2011);
- 2012 Final Supplemental Environmental Assessment Nearshore Placement of Maintenance Dredged Material, Jacksonville Harbor, Duval County, Florida & Finding of No Significant Impact;
- 2014 Jacksonville Harbor Navigation Study, Duval County, Florida, Final Integrated General Reevaluation Report II and Supplemental Environmental Impact Statement;
- 2015 Final Supplemental Environmental Assessment, New Borrow Area - Duval County Shore Protection Project, Duval County, Florida (analyzes the environmental impacts associated with dredging, conveying, and placing of approximately 1,394,000 cubic yards of sand); and
- 2019 Final Supplemental Environmental Assessment, Dunes and Other Resiliency Design Refinements, Shore Protection Projects in Nassau, Duval, St. Johns, and Brevard Counties, Florida (analyzes design changes to incorporate the resiliency features into existing Federal SPPs in the named counties).

The applicable aforementioned documents, which incorporate by reference the 1974 EIS, were developed by the Corps, adopted by BOEM, and used to support borrow area leasing decisions in 1996, 2005, 2011, and 2016.

- 2012 Environmental Protection Agency Environmental Impact Statement (EIS) for Designation of an Ocean Dredged Material Disposal Site Offshore Jacksonville, Florida (USEPA, 2012) (incorporated by reference because one of the alternative sites evaluated in the EIS overlaps the Borrow Area Shoal S. The EIS alternative 2 was not chosen as the preferred ODMDS site but much of the analyses within the EIS is directly applicable to Borrow Area Shoal S).

### 1.4.3 ISSUES ELIMINATED FROM FURTHER ANALYSIS

Previous NEPA documents, as listed in Section 1.4.2, have described the existing environment in detail and evaluated the potential effects on resources of concern, including aesthetics, air quality, benthic resources and habitat, birds and other wildlife, fish and Essential Fish Habitat (EFH), physical oceanography, marine mammals, T&E species, recreation and tourism, water quality, Clean Water Act 404(b)1 discharge of dredged material, noise, and cumulative effects. The conclusions of the existing effects analyses for most resources, except those resources noted in Section 1.4.1 and discussed herein, have been determined to be valid. The continued use of the offshore borrow areas (Borrow Area Shoal S, Borrow Area "A" (A1+A2) or Borrow Area "B" (B1)) will alter the scope and timing of the conveyance and borrow area impacts, however, the type of impacts and magnitude of impacts associated with the additional material or extended construction windows would not be significantly different than those previously considered. For the placement impacts, the beach template and construction methodologies, scope, and timing have remained the same, and relevant Federal laws (except for newly listed T&E species) have not changed in a manner that related environmental documents (Section 1.4.1) would require re-evaluation of these resources. Prior NEPAs' analyses environmental effects are summarized in Table 1-2.

**Table 1-1. Summary of findings from selected prior NEPAs' Effects Evaluations specifically written solely for Duval SPP. Parentheses indicate where the section, chapter, or appendix the effects evaluations were found in are located in the NEPA document.**

| ENVIRONMENTAL RESOURCE | 1974 IMPACTS | 1993 IMPACTS | 2005 EA IMPACTS | 2011 EA IMPACTS | 2015 SEA IMPACTS |
|---|---|---|---|---|---|
| | *Final EIS, Beach Erosion Control Project Duval County, Florida* | *EA, Duval County Shore Protection Project*<br><br>(Different OCS borrow Area; placement also considered) | *EA, Duval County Beach Erosion Control Project New Borrow Area*<br><br>(Dredging of OCS Borrow Areas "A" and "B"; placement and conveyance considered) | *EA, Use of Outer Continental Shelf Sand from the Duval Borrow Area in the Duval County (Florida) Shore Protection Project*<br><br>(Dredging of OCS Borrow Area "A"; placement and conveyance considered) | *Final SEA, New Borrow Area – Duval County Shore Protection Project, Duval County, Florida*<br><br>(Dredging of Borrow Area Shoal S) |
| AESTHETICS | Not evaluated | Restoration of beach will improve aesthetic value in the long term (9.07) | Aesthetic quality will be reduced during construction, but will be short-term and temporary. The placement of sand on eroded beach will improve the beach's aesthetic quality. (4.8) | Confirmed prior analyses of impacts. (Section 5) | Confirmed prior analyses of impacts. (1.6.2) |
| AIR QUALITY | Not evaluated | No long-term accumulation of particulates. Impacts will be short-lived. (9.10) | No long-term accumulation of particulates. (4.11) | Estimated emissions within national ambient air quality standards. Adverse impacts not anticipated. (Section 5) | Confirmed prior analyses of impacts. (1.6.2) |
| ARCHAEOLOGY /CULTURAL RESOURCES | No known archaeological sites affected; magnetometer survey of offshore borrow area was to be conducted prior to construction. (2.15 and 4.09) | No effect with designation of protective buffer zones and avoidance area on 51 anomalies identified in remote sensing. State Historic Preservation Office (SHPO) concurrence | Magnetometer and side-scan SONAR surveys documented three areas that might contain significant historic resources. These areas will be avoided by at least a 400' buffer. (4.5) | Remote sensing survey of the area located three target clusters, two of which were subsequently investigated by divers (the third was unable to be relocated). SHPO concurred with | Majority of borrow area surveyed with remote sensing and diver investigations in 2012. SHPO concurrence on no historic properties affected received on October 1, 2012. A |

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| | | on No Effect by letter dated May 7, 1993. (Appendix C) | | determination that none of the three targets represents significant cultural resources by letter dated March 16, 2009. (Section 5) | small portion of the borrow area was awaiting further surveys. (4.6.2) |
| BEACH COMPATIBILITY / COASTAL HABITAT | Minor impact since grain size of borrow and beach material are compatible. Post-construction survey will be performed to ensure restored beach remains suitable for turtle nesting. Increased beach width will increase available inter-tidal and supra-tidal habitat. (9.0) | Protective beach berm will stall erosion of dunes; beach vegetation may help stabilize dune and beach creating additional foraging habitat. No adverse impacts are anticipated provided beach compaction monitoring. (9.01) | Enhance dune and beach vegetation. Increase foraging habitat (4.1). Increase protection of habitat from waves and storms. (1.4) | Beach compatibility verified through FDEP Joint Coastal Permit (JCP) permitting process. (Appendix D) | Beach compatibility verified through FDEP JCP permitting process. (4.16.7) |
| BENTHIC RESOURCES | Lethal effect on benthic organisms and sessile invertebrates from dredge entrainment. Re-colonization and recovery expected within 18 months. Surf zone and inter-tidal beach invertebrates may be buried during placement but are expected to recover. (4.02) | Short-term and localized reduction in beach infauna. Inter-tidal and supra-tidal invertebrates may be buried, but are expected to avoid and/or recover. (9.02) Mortality and displacement at borrow site, but benthic communities are expected to recover. (Appendix A) | Possible mortality for nonmotile invertebrates in immediate area of dredging. Temporary and localized defaunation from bottom disturbance, sub-lethal effects from elevated turbidity, burial, and habitat degradation. Long term suppression not expected due to dredging intervals and highly adaptive benthic assemblages. Re-colonization | Same as previous. (Table 1) | Dredging in the proposed new borrow area could affect a total of 767 acres of unvegetated, open sandy substrate on the OCS. This will result in a localized reduction in the abundance, diversity, and biomass of the immediate fauna. Long term suppression not expected due to dredging intervals. (4.4.2) |

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| | | | expected to occur. (4.1)<br><br>No hard-bottom habitat in the project area. (3.4) | | |
| BIRDS AND WILDLIFE | Minor effects on nesting and foraging birds during placement operations, but no injury expected as birds are generally expected to show avoidance behavior. (4.06) | Short and localized disruption of feeding, foraging, and nesting during construction activities owing to increased noise, turbidity, and beach reshaping. Following construction, enhanced beach vegetation may provide additional refuge and foraging opportunities. (9.02 / 9.09) | Short-term and localized disruption of feeding, foraging, and resting for birds, small mammals, and reptiles during construction. Following construction, enhanced beach vegetation may provide additional refuge and foraging opportunities. (4.2) | During dredging and placement activities, bird habitat may be adversely or beneficially affected; similar, short-term and local disturbances may affect individual bird behavior. Implementation of bird protection policy should minimize effects. (Section 5) | Confirmed prior analyses of impacts. (1.6.2) |
| ENVIRONMENTAL JUSTICE | | | Proposed action does not overlap with specific groups in a manner that is disproportionately adverse. (6.15) | Not evaluated. (Table 1) | The proposed action would not result in adverse human health or substantial environmental effects. The work would not impact "subsistence consumption of fish and wildlife". (4.16.22) |
| FISH AND ESSENTIAL FISH HABITAT (EFH) | Minor impact on fishes because of mobility. Fishes will avoid effects related to local and short-term increases in turbidity | Not evaluated. | EFH would be temporarily impacted by dredge activity. Fish tend to avoid dredging area. (4.2) Long term | Dredging operations may adversely affect de-mersal and pelagic fishes through lethal en-trainment or sublethal removal of the benthic | Marine water column and unconsolidated substrate habitat would be temporarily impacted during dredging. Long term |

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| | and sedimentation. (4.05) | | suppression not expected due to dredging intervals. (Appendix G) | forage base and inter-ruption of filter feeding. Avoidance during and re-colonization following dredging is expected for adult pelagic fish. Po-tential impacts to de-mersal fish will be relatively minor since the duration and footprint of potential impact is limited. (Section 5) | infaunal community suppression not expected due to anticipated dredging intervals. (4.3.2) |
| MARINE MAMMALS | Marine mammals were not explicitly mentioned. However, the only irreversible or irretrievable loss involved in the implementation of the project would be to the individual marine and terrestrial organisms destroyed by dredging or covered by fill. Still, no threat to any species inhabiting the project area is expected. (8.00) | Vessel strike may affect manatees and cetaceans. (9.03) Effects to marine mammals may be avoided or minimized with approved protective measures. (10.0) | Incorporation of the safeguards used to protect threatened or endangered species during dredging and disposal operations will also protect any marine mammals in the area. (6.8) Otherwise not evaluated. | Minor behavioral effects related to noise. Minor strike risk as mobile marine mammals can avoid slow moving vessels. Strike risk is minimized with use of observers and speed restrictions. (Section 5) | Protective measures for marine mammals such as manatees, dolphins and whales implemented. This project was coordinated with the USFWS and NMFS. The work was in full compliance with the Marine Mammal Protection Act. (4.16.10) |
| PHYSICAL IMPACTS | Not evaluated, in terms of Physical Oceanography but other physical impacts (such as water and air quality, aesthetics, etc.) are listed in other sections of this table. | Work will help control and conserve windblown sand and provide protection from storm waves. (9.01). Physical Oceanography was not evaluated but | Impacts on wave transformation due to dredging borrow are not expected to be significant due to distance offshore and relative changes in water depth. (Addition | Minor impacts because of distance offshore and relative water depth. (Section 5) | Confirmed prior analyses of impacts. (1.6.2) |

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| | | other physical impacts (such as water and air quality, aesthetics, etc.) are listed in other sections of this table. | to MMS administrative record) | | |
| RECREATION AND TOURISM | Temporary and local restriction of recreational opportunities during construction. Minor effects from limited and localized noise from construction equipment. Post-construction, improved beach will increase recreational opportunities. (4.08) | Substantially increase area for beach recreation. (9.11) | Recreational opportunities and tourism would benefit due to larger beach. Tourism and related economic benefits are expected to increase since public access is readily value to fill areas. (4.12) | Confirmed prior analyses of impacts. (Section 5) | Confirmed prior analyses of impacts. (1.6.2) |
| THREATENED AND ENDANGERED SPECIES | Beach fill will increase available nesting habitat for sea turtles, since existing shoreline is seawalled. (4.04) | Potential increase of nesting habitat for sea turtles; vessel strike may affect sea turtles, manatees, and right whales. (9.03) Effects to sea turtles, as well as marine mammals, may be avoided or minimized with approved protective measures. (10.0) | Short-term and localized disruption to nesting sea turtles, followed by increase in nesting habitat. (4.3) Hopper dredging may affect marine turtles, right and humpback whales. Effects to marine turtles, as well as marine mammals, may be avoided or minimized with approved protective measures. (Appendix C) | Hopper dredging and beach placement may affect marine turtles. Effects to marine turtles, marine mammals, and smalltooth sawfish may be avoided or minimized with approved protective measures. (Section 5) | Hopper dredging and beach placement may adversely affect marine turtles and piping plover. Adverse effects to sea turtles, marine mammals, and smalltooth sawfish may be avoided or minimized with protective measures. (4.1.2.1, 4.1.2.2) |
| WATER QUALITY | Temporary, minor impacts (elevated turbidity) to the water | Temporary and localized impacts (elevated turbidity) to | Temporary impacts to the water column due to elevated turbidity. | Confirmed prior analyses of impacts. (Section 5) Additional | Temporary impacts to the water column during dredging. |

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| | column during dredging and beach fill operations. (4.01) | the water column during dredging and beach fill placement. State water quality standards will be met. (9.05) | Not expected to present detrimental impact. (4.6) | analysis found in Table 3 in terms of cumulative impacts. | Monitoring with shut-down should 29 Nephelometric Turbidity Unit (NTU) Surface Water Standard be exceeded. (4.2.2) |
| CUMULATIVE IMPACTS | Not evaluated. | No cumulative negative impacts that would result in degradation of the natural, cultural, or recreational resource. in and around the project area. No cumulative impacts that would result in major impairment of water resources nor will it interfere with the productivity and water quality of the existing aquatic ecosystems. (Appendix A., II., g.) | Negative cumulative effects on EFH. (4.4) No cumulative negative impacts would result in degradation of the natural, cultural, or recreational resources in and around the project area. No cumulative impacts would result in major impairment of water resources, nor will it interfere with the productivity and water quality of the existing aquatic ecosystem. (Appendix A) | Incremental contribution of the proposed action to cumulative impacts is small relative to effects from past, present, and future actions in the vicinity of the project area. (Table 3) | Confirmed prior analyses of impacts. (1.6.2) |

## 1.5 PURPOSE AND NEED

This document evaluates whether using potential sand sources to obtain up to 2.1 MCY of material for each periodic or emergency renourishment event will result in significant effects on the human environment. The borrow areas analyzed in this SEA are in Federal waters (>3 nautical miles offshore) within the jurisdiction of BOEM. BOEM's proposed action is the issuance of a negotiated agreement to authorize or reauthorize use of a sand borrow source so that the Corps, along with the project's NFS, can obtain sand resources for future renourishment projects. The proposed action is necessary because the Secretary of the Interior delegates the authority granted in the OCSLA to BOEM for authorizing use of OCS sand resources for the purpose of shore protection and beach restoration.

The purpose of this SEA is to consider repeat use of a sand source to support BOEM's decision to issue a negotiated agreement to authorize use of the borrow areas for renourishment of the Duval County SPP, as needed for the Corps' emergency renourishment efforts and to meet the Corps' completion of the 50-year authorized project in 2028, as outlined in the 1974 EIS (Corps, 1974) and updated by subsequent NEPA (see Section 1.4.2). New studies and NEPA analysis would be required to address the inclusion of any new, additional sand sources to continue renourishment efforts at Duval County SPP if Federal participation is extended to 2040 pursuant to WRDA 2022.

## 1.6 PUBLIC INTEREST FACTORS

While the Corps does not process and issue permits for its own activities, pursuant to 33 CFR 336.1, the Corps authorizes its own discharges of dredged or fill material by applying all applicable substantive legal requirements, including public notice, and opportunity for public hearing. As part of its review, the Corps evaluates the probable impacts, including cumulative impacts of the proposed activity and its intended use on the public interest. All factors which may be relevant to the proposal must be considered, including the cumulative effects thereof. The following factors are relevant to this project and detailed analysis can be found in the sections noted:

- Water quality (see Sections 4.2; 4.3; 6.2.9, Table 5-1; and Appendix C)
- Coastal zone consistency (see Sections 4; 6.2.11, and Table 5-1)
- Endangered species (see Sections 4.2.1, 6.2.12, and Table 5-1)
- Fish and wildlife (see Sections 4.2, 4.2.2, and Table 5-1)

# 2 EXISTING CONDITIONS

This section describes the existing environmental resources of the areas that could be affected if any of the alternatives were implemented ("Affected Environment"). The existing conditions provide a description of the human environment, which is subdivided into the natural, physical, economic, and built environments. It does not describe the entire existing environment, but only those environmental resources that would be affected by the alternatives if they were implemented. This section forms the baseline conditions for determining the environmental effects of the proposed action and reasonable alternatives.

Incorporation of resiliency design refinements (i.e., dune incorporation with vegetation, vehicle access modifications, and pedestrian access modifications with sand fencing) and dredging the borrow area, including transportation and placement of sand on the Duval County shoreline, have been evaluated in previous NEPA documents (see Section 1.4.2) and are hereby incorporated by reference. Therefore, this section's analysis addresses only those effects associated specifically with the continued use of the borrow areas which were not previously evaluated.

## 2.1 PERIOD OF ANALYSIS

The current period of analysis for this SEA extends until 2028. However, the 2022 WRDA authorizes the Corps to extend the end of federal participation to 2040. New NEPA analysis would be required to address the inclusion of any new, additional sand sources to continue renourishment efforts at Duval County SPP if Federal participation is extended to 2040 pursuant to WRDA 2022.

## 2.2 GENERAL SETTING

The borrow areas are located approximately 7.5-10 miles southeast of the St. Johns River entrance on the OCS in the Atlantic Ocean (Figure 1-1). The areas are approximately 2,017-acres in water depths between 40'-60' mean lower low water (MLLW). Approximately 3.6 MCY of beach compatible sand has been identified to remain in Borrow Area Shoal S (Olsen Associates, inc., 2019). Approximately 0.9 MCY of sand has been identified to remain in Borrow Area "A" (A1+A2), and approximately 5.7 MCY of sand has been identified to remain at Borrow Area "B" (B1) (Olsen Associates, inc., 2019). The borrow areas are located within the Duval Ridge Field, which extends from St. Johns County north to Nassau County, from 3 miles offshore to approximately 20 miles offshore (URS and CPE, 2007).

The Duval County SPP, Mayport and Jacksonville Harbor federal navigation channels, Borrow Area "A" (A1+A2), Borrow Area "B" (B1), Borrow Area Shoal S, and the Jacksonville Harbor ODMDS (adjacent to Borrow Area Shoal S with the closest point of the borrow area at the northwestern edge located approximately 850 feet east of the ODMDS) are all located within the same general region (Figure 1-1).

The associated shore is a barrier beach with a low tidal marsh and a lagoon behind it. Elevations range from near sea level to over 30 feet on the isolated sand ridges in the north, with an average elevation of 10 feet mean low water for the entire area. The mean tidal range along the Duval County shore is 5.2 feet. The shore area is separated from the mainland by the Intracoastal Waterway. The County shore along the Atlantic Ocean includes the ocean frontage of the United States Naval Station at Mayport, Kathryn Abbey Hanna Park, and Atlantic Beach, Neptune Beach, and Jacksonville Beach, which are highly developed communities with homes, apartment houses, resorts, hotels and motels, and concession and commercial facilities. Much of this shore area is used for recreational purposes.

## 2.3 NATURAL ENVIRONMENT

The Duval Ridge Field consists of compound shoals having distinct lobes and coalescing linear sand ridges. The borrow areas host various sea turtle species and marine mammals such as bottlenose and Atlantic spotted dolphin, and North Atlantic right whales. Avian species most likely to occur in the study area offshore are pelagic birds, pelicans, gulls, and terns. A wide variety of fin fish, cartilaginous fish, and shellfish species that dwell in softbottom and coastal pelagic (i.e., at or near the sea surface in the water column) habitats may be present including important commercial fisheries species such as northern brown shrimp, northern white shrimp (softbottom), snappers, and king mackerel (coastal pelagic). Predominant infauna found at the borrow sites include annelid worms, gastropods, bivalves, arthropods (crabs, shrimp, etc.), echinoderms (sea urchins, sand dollars, etc.) and lesser amounts of other taxa. Additional details can be found in Section 3 of the 2015 SEA (Corps, 2015).

The Duval County shoreline is a barrier island beach system consisting primarily of coastal strands and sandy beaches. The barrier islands are generally vegetated with salt tolerant grasses, herbs, and shrubs. Natural vegetation along the beaches varies from nonexistent along the developed shoreline areas to dune grasses, scrub palmetto, cabbage palm, and sand live oak along the dunes in the more undeveloped areas. Pioneer species such as sea oats (*Uniola paniculata*) dominate the foredune and the saw palmetto (*Serenoa repens*) dominate the leeward slope. The mollusk *Donax variabifis* and the crustacean *Acanthohaustorius pansus* are dominant on the beaches. Other wildlife present in the project area including foraging shore and wading birds, small mammals, nesting sea turtles, fish, invertebrates, and infaunal and epifaunal species.

### 2.3.1 THREATENED AND ENDANGERED (T&E) SPECIES

The list of T&E species developed for this SEA were compiled from the Duval County SPP new borrow area SEA from 2015 (Corps, 2015) and the National Marine Fisheries Service (NMFS) 2020 South Atlantic Regional Biological Opinion for Dredging and Material Placement Activities in the Southeast United States, as amended (SARBO). Federally listed T&E species that may be present in or around the project area are listed in Table 2-1.

**Table 2-1. Federally listed T&E species that may occur in the potential project borrow areas. Species listed after the 2005 EA (Corps, 2005) and 2015 SEA (Corps, 2015) are highlighted in bold.**

| Common Name | Scientific Name | Federal Status | Agency |
|---|---|---|---|
| Green sea turtle[1] | *Chelonia mydas* | Threatened | NMFS |
| Leatherback sea turtle | *Dermochelys coriacea* | Endangered | NMFS |
| Loggerhead sea turtle[D] | *Caretta caretta* | Threatened | NMFS |
| Kemp's Ridley sea turtle | *Lepidochelys kempii* | Endangered | NMFS |
| North Atlantic right whale[D] | *Eubalaena glacialis* | Endangered | NMFS |
| Smalltooth sawfish | *Pristis pectinata* | Endangered | NMFS |
| **Oceanic whitetip shark** | ***Carcharhinus longimanus*** | Threatened | NMFS |
| **Giant manta ray** | ***Manta birostris*** | Threatened | NMFS |
| Shortnose Sturgeon | *Acipenser brevirostrum* | Endangered | NMFS |
| Atlantic Sturgeon | *Acipenser oxyrinchus* | Endangered | NMFS |

[1]North Atlantic distinct population segment (DPS); [D]Designated Critical Habitat (DCH)

Details on the presence and biology of the above listed species under NMFS jurisdiction can be found in NMFS' 2020 SARBO. Details on the presence and biology of the above listed species under NMFS jurisdiction that were previously consulted on can be found in the 2005 EA (Corps, 2005) and the 2015 SEA (Corps, 2015). Additionally, information on presence and biology of species under NMFS jurisdiction that were not previously consulted on are provided below.

### Oceanic Whitetip Shark

Named for its distinctive pattern of mottled white markings on the tips of the dorsal, pectoral, and tail fins, the oceanic whitetip shark (*Carcharhinus longimanus)* was listed as threatened by NMFS in 2018 (81 Federal Register (FR) 4153). No Designated Critical Habitat (DCH) has been assigned for this species. The oceanic whitetip shark is a highly migratory species with a worldwide distribution found in tropical and subtropical waters. While they generally remain offshore and are considered surface-dwelling, preferring the surface mixed layer of warm waters, oceanic whitetip sharks can also be found offshore in the open ocean on the OCS or around oceanic islands in deep water.

Oceanic whitetip sharks are considered a top predator. Their diet is opportunistic and generally consists of cephalopods and ray-finned fish as well as sea birds, marine mammals, other sharks and rays, and crustaceans. The lifespan of oceanic whitetip sharks is thought to average approximately 19 years, but some individuals may live over 30 years. The oceanic whitetip shark reproductive cycle is thought to be biennial, and females may give birth to litters ranging from 1-14 pups, depending on the female's size.

### Giant Manta Ray

The giant manta ray (*Manta birostris*) is the world's largest ray with a 29-foot wingspan and easily recognizable by their large body and elongated wing-like pectoral fins. They were listed as threatened by NMFS in 2018 (83 FR 2916). Giant manta rays are filter feeders that eat large amounts of zooplankton while using a wide range of depths for feeding (10 meters to over 1,000 meters deep). Although migratory, this species has small, fragmented populations that are distributed sparsely across the world and can be found in tropical, subtropical, and temperate waters, commonly offshore in oceanic waters or near productive coastlines. Generally solitary, giant manta rays will aggregate to feed and mate. While giant manta rays have been reported to live at least 40 years, they have a low reproductive rate (1 pup every two to three years).

## 2.3.2 ESSENTIAL FISH HABITAT (EFH)

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended by the Sustainable Fisheries Act of 1996, requires federal agencies to consult with NMFS on activities that may adversely affect EFH. The South Atlantic Fishery Management Council (SAFMC) defines EFH as "those waters and substrate necessary to fish for spawning, breeding, or growth to maturity" (SAFMC, 1998). EFH exists in all aquatic environments (i.e., freshwater, saltwater, and estuarine) and includes, but is not limited to, wetlands, inlets, rivers, deep ocean, softbottom (i.e., unconsolidated sediment and non-vegetated areas), etc. The SAFMC designated Habitat Areas of Particular Concern (HAPCs) for coral/coral reefs/hardbottom, *Sargassum*, spiny lobster, snapper/grouper, reef fish, penaeid shrimp, dolphin/wahoo, and several coastal pelagic/Atlantic highly migratory species. HAPCs are a subset of EFH that are either rare, particularly susceptible to human-induced degradation, important ecologically, or located in an environmentally stressed area. In light of their designation as EFH-HAPCs and Executive Order (E.O.) 13089 (Coral Reef Protection), NMFS applies greater scrutiny to projects affecting corals, coral reefs, hardbottom, and seagrass to ensure practicable measures to avoid and minimize adverse effects to these habitats are fully explored.

There is no hardbottom located within the vicinity of the borrow areas. Marine offshore EFH within the boundaries of the borrow areas consists of water column and benthic habitat (unconsolidated, unvegetated substrate). A variety of managed fisheries EFH near the borrow areas are found in Table 2-2.

## 2.4 PHYSICAL ENVIRONMENT

The beaches in the project area formed from sand transported southward from the north by shore currents and wave action. The approximately 2,017-acre borrow areas (Shoal S, "A" and "B" in total) are 7.5-10 miles southeast of the St. Johns River entrance and approximately 6.5-8.5 miles east of Jacksonville Beach on the OCS in the Atlantic in water depths between 40'-60' MLLW (Figure 1-1). Potential sand resources in the Duval Ridge Field, which extends from Nassau County south to St. Johns County from approximately 3-20 miles offshore (URS and CPE, 2007),

**Table 2-2. Borrow area EFH Species/Management Units.**

| Species/Management Unit Life Stage(s) | Life Stage(s) Found at Locations |
|---|---|
| Atlantic Sharpnose Shark | Adult Juvenile Neonate |
| Basking Shark | All |
| Blacknose Shark | Juvenile/Adult |
| Blacktip Shark | Juvenile/Adult<br>Neonate |
| Bluefish | Larvae Eggs Adult Juvenile |
| Bonnethead Sharks | Juvenile/Adult |
| Bull Shark | Juvenile/Adult |
| Clearnose Skate | Juvenile |
| Finetooth Shark | All |
| Lemon Shark | Adult Juvenile |
| Sailfish | Adult Juvenile |
| Sand Tiger Shark | Neonate/Juvenile<br>Adult |
| Sandbar Shark | Adult |
| Scalloped Hammerhead Shark | Juvenile/Adult<br>Neonate |
| Snapper Grouper | All |
| Spinner Shark | Juvenile/Adult<br>Neonate |
| Spiny Lobster | All |
| Summer Flounder | Larvae Juvenile Adult |
| Tiger Shark | Juvenile/Adult<br>Neonate |
| Windowpane Flounder | Juvenile |

Source: National Oceanic and Atmospheric Administration (NOAA) EFH Mapper tool (https://www.habitat.noaa.gov/apps/efhmapper/) accessed March 29, 2023, with representative location (30.337 Latitude, -81.253 Longitude).

are estimated to range on the order of 10 billion cubic yards (Corps, 2015). Borrow area substrates are unconsolidated (sand) sediments with no features such as hardbottom or rock outcrops.

The Florida Current dominates circulation along the east Florida continental shelf and is the local manifestation of the Gulf Stream, the intense western boundary current of the North Atlantic that transports heat north from the equator (Hammer et al., 2005). Turbidity varies under natural conditions, especially during storm events and hurricanes. In the past, reduced water quality in the St. Johns River was associated with coastal development, pollutants, and land-use practices. Debris, and hazardous and nonhazardous waste from recreational, commercial fishery, and naval vessels degraded water quality and contributed to seasonal eutrophication. Water quality may continue to deteriorate because of anthropogenic sources of pollution such as effluent and stormwater runoff from nearshore coastal areas. Still, the waters offshore Duval County within the vicinity of the borrow areas and by the placement area are designated as Class III - Recreation, Propagation, and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife by the State of Florida.

There are no known sources of hazardous and toxic wastes (HTRW) in the borrow areas, and no records of such activities in the past. The sand used for renourishment of the Duval shoreline contains particles with large grain sizes that do not normally absorb contaminants. Because of the sea breezes that are usually present along the beaches, Duval County is an air quality attainment area (as defined by the National Ambient Air Quality Standards; see section 2.4.5), as airborne pollutants are readily dispersed by the ocean generated winds.

The diverse fish species assemblage supports sport and recreational fishing opportunities. Offshore fishing uses the natural areas located within and adjacent to the project area. There is no documentation to suggest the borrow areas are highly used by recreational or commercial fishermen but a wide variety of finfish and shellfish species that dwell in softbottom and coastal pelagic species are caught and landed off the coast of northeast Florida. Important commercial fisheries species from these groups include northern brown shrimp, northern white shrimp (softbottom), snappers, and king mackerel (coastal pelagic). Navigation in the project area is generally limited to watercraft used for commercial enterprises (e.g., fishing) and recreational activities (e.g., fishing, sailing, jet skiing, pleasure boating, etc.).

### 2.4.1 SEDIMENT CHARACTERISTICS

Sediment samples of the bottom substrate in Borrow Area Shoal S indicate poorly-graded, fine to medium-grained quartz sand with an average visual shell content of 3.6 percent. The mean sediment grain size is 0.28 millimeters (mm) with a standard deviation of 0.92 phi. All samples within the area contain less than 5 percent silt with an average silt content of 1.42 percent. Based on the above analysis, the borrow area material is suitable for beach placement according to the Florida “Sand Rule” (Florida Administrative Code (F.A.C.) 62B-41.007(2)(j)). Sediment samples from Borrow Area “A” indicate poorly graded, fine-grained quartz sand with an average visual shell content of 6.65 percent. The mean sediment grain size is 0.21 mm with a standard deviation of 0.77 phi. The average silt content is 4.11 percent. Based on the above analysis, the borrow area material is suitable for beach placement according to the Florida “Sand Rule” (Florida Administrative Code (F.A.C.) 62B-41.007(2)(j)). Sediment samples from Borrow Area “B” indicate poorly graded, fine to medium-grained quartz sand with an average visual shell content of 9.36 percent. The mean sediment grain size is 0.33 mm with a standard deviation of 0.94 phi. The average silt content is 5.42 percent.

### 2.4.2 TRIBAL NATIONS

No portion of the proposed action is located within or adjacent to known Native American owned lands, reservation lands, or identified Traditional Cultural Properties. However, Native American groups have lived throughout the region in the past and their descendants continue to live within the State of Florida and throughout the United States.

### 2.4.3 CULTURAL RESOURCES

Cultural resources for the Duval County SPP have been addressed in prior NEPA documents produced by the Corps in 1974, 1993, 2005, 2011, 2012, and 2015. Additionally, more recent consultation regarding both the borrow and placement areas occurred in 2016 and 2019. The 2016 report titled *Submerged Cultural Resources Survey of the Duval County Shore Protection Project, Duval County, Florida: Addendum to the Cultural Resources Remote Sensing Survey of the Jacksonville Harbor Ocean Dredged Materials Disposal Site* (Weaver, 2016) details three magnetic anomalies recommended for avoidance with a 300-ft buffer wherein no seafloor disturbance is allowed. The Florida State Historic Preservation Office (SHPO) concurred with the Corps' determination of no adverse effect to cultural resources, including historic properties, contingent upon maintenance of these avoidance buffers in a letter dated April 1, 2016 (Division of Historical Resources (DHR) Project File No.: 2016-1371; see Appendix A).

### 2.4.4 Unexploded Ordnance (UXO)/Munitions of Explosive Concern (MEC)

A site-history and past use review was completed for the Duval County SPP (including Borrow Area Shoal S) by the Corps Military Munition Response Program (MMRP) in a Corps MEC Probability Assessment (PA) (Report Dated December 13, 2022). Through extensive research of records, including Formally Used Defense Site (FUDS) and Corps archived records, a determination was made that the Chicopit Bombing Target located approximately 6 miles from the project area is the only area known to have MEC or MEC properties associated with the project area. The MEC items used at the Chicopit Bombing Target were miniature practice bombs (AN-Mk 5, AN-Mk 23, AN-Mk 43) with spotting charges (AN-Mk 4). During previous dredging efforts in 2016 and 2018, Mk-23's, Flares, and Small Arm Ammunition were discovered. Reports indicated that most of the MK-23's were discovered in the 2016 project time frame. This was reported as indicative as the MEC items were in the shallower dredge location. The amount of MEC items dramatically decreased during the 2018 project as the dredging was deeper. The MEC items found are non-fragmenting and have a MK-4 signal cartridge containing a smokeless powder charge.

The MEC PA determination for both the placement beach fill area and borrow area is "Low Probability". The justification for this is the identified FUDS location in the vicinity of Chicopit Bomb Target. Specifically, there is no indication of any ordnance being fired from the site to the borrow pit. There is no known bombing target in the borrow area, indicating that the MEC items found were possibly dumped. The MEC items found during the 2016/2018 projects were non-fragmenting producing items and present a lower hazard. The amount of MEC items dramatically decreased during the 2018 project as the dredging was deeper.

### 2.4.5 AIR QUALITY

The Clean Air Act (CAA), as amended (42 U.S.C. 7401 et seq.), requires Federal actions to conform to an approved state implementation plan (SIP) designed to achieve or maintain an attainment designation for air pollutants as defined by the National Ambient Air Quality Standard (NAAQS). The NAAQS were designed to protect public health and welfare. The criteria pollutants include carbon monoxide (CO), ozone ($O_3$), nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), particulate matter ($PM_{2.5}$ and $PM_{10}$; particulate matter with an aerodynamic diameter less than or

equal to a nominal 2.5 and 10 microns), volatile organic compounds (VOC), and lead (Pb). The General Conformity Rule (40 CFR Parts 51 and 93) implements these requirements for actions occurring in air quality nonattainment areas.

The project area is in the Jacksonville (Florida)-Brunswick (Georgia) Interstate Air Quality Control Region, as established by 40 CFR § 81.91. The U.S. Environmental Protection Agency (USEPA) (40 CFR § 81.310) designates air quality compliance on a county level. A review of USEPA data indicates that the project area is in attainment status for all the criteria pollutants. USEPA has not established air quality standards for Federal waters.

On January 9, 2023, the Council on Environmental Quality (CEQ) issued NEPA Guidance on Consideration of Greenhouse Gas Emissions and Climate Change (CEQ-2022-0005). This guidance is intended to assist agencies in disclosing and considering the effects of greenhouse gas (GHG) emissions and climate change. Consistent with section 102(2)(C) of NEPA, Federal agencies must disclose and consider the reasonably foreseeable effects of their proposed actions including the extent to which a proposed action and its reasonable alternatives (including the no action alternative) would result in reasonably foreseeable GHG emissions that contribute to climate change.

CEQ defines GHGs as carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride. $CO_2$ is the primary GHG emitted from diesel engines. $CH_4$ is emitted to a lesser extent but, over a 100-year period, the emissions of a ton of methane contributes 28 to 36 times as much to global warming as a ton of $CO_2$.

## 2.5 ECONOMIC ENVIRONMENT AND TRENDS

The area of interest involves approximately 10 miles of Duval County shoreline. As this is a shoreline protection project, using Duval County's population as a whole would cast too wide of a net for an analysis of economic trends. This is because the majority of Duval County is inland and away from the shoreline. Therefore, the relevant census tracts used are tracts 138, 139.05, 140.01, 141.04, 142.05, 142.03, and 142.06. These Duval County census tracts were picked because they border the project shoreline. The Duval County Census Tract Map (Figure 2-1) reflects this.

Per data from the U.S. Census Bureau's American Community Survey, the population in census tracts 138, 139.05, 140.01, 141.04, 142.05, 142.03, and 142.06 have an estimated mean household income of $95,344. This is notably above Duval County, the city of Jacksonville, the state of Florida, and the rest of the United States' mean household incomes estimates of $59,541, $58,263, $61,777, and $69,021, respectively. It is estimated that 44.69% of the shoreline population have household incomes of $100,000 or greater. Refer to Figure 2-2 for the household income distribution.

The poverty rate for the same census tracts is an estimated 9.02%. This is lower than the poverty rates for Duval County, the city of Jacksonville, the state of Florida, and the rest of the United States. These comparative figures are 14.46%, 14.87%, 13.11%, and 12.63%, respectively. The estimated unemployment rate for the relevant census tracts is 1.5%. This is less than half of the unemployment rates for Duval County, the city of Jacksonville, the state of Florida, and the rest of the country. The estimated unemployment rates are 3.27%, 3.35%, 3.14%, and 3.47%, respectively.

The population of the same census tracts have high educational attainment. An estimated 60.22% hold a bachelor's degree or higher. This is substantially higher than the rest of Duval County, the city of Jacksonville, the state of Florida, and the rest of the United States. The estimated bachelor's degree or higher educational attainment rates are 31.51%, 30.18%, 31.53%, 33.67%, respectively. Refer to Figure 2-3 for the educational attainment distribution.

Per the U.S. Census Bureau, Duval County's population trend has been upward. There has been growth from 2010 to 2020 with estimated population counts of 864,263 to 995,567 respectively. The Office of Economic and Demographic Research has Duval County's 2022 estimated population at 1,033,533. The estimated growth change from 2020 to 2022 is 3.8%.

It is important to note that the rest of Duval County has the land necessary for housing development and population expansion. However, the relevant census tracts along the beaches are developed as much as they can be. The land is scarce. As such, it is unlikely the relevant census tracts follow the same population growth trend as the rest of Duval County. The rate of change for the population in the relevant census tracts is likely minimal or even stagnant.

Real Gross Domestic Product (GDP) as of 2021 for Duval County is an estimated $64,216,389. Duval County's GDP has followed a steady trend of 6% increases year to year per the Florida Office of Economic and Demographic Research.

Businesses near the project area's beaches rely on outdoor recreation to bring in potential customers (both tourists and locals). Outdoor recreation involving beach and water activities are prevalent. These activities are even more prevalent during the summer season.

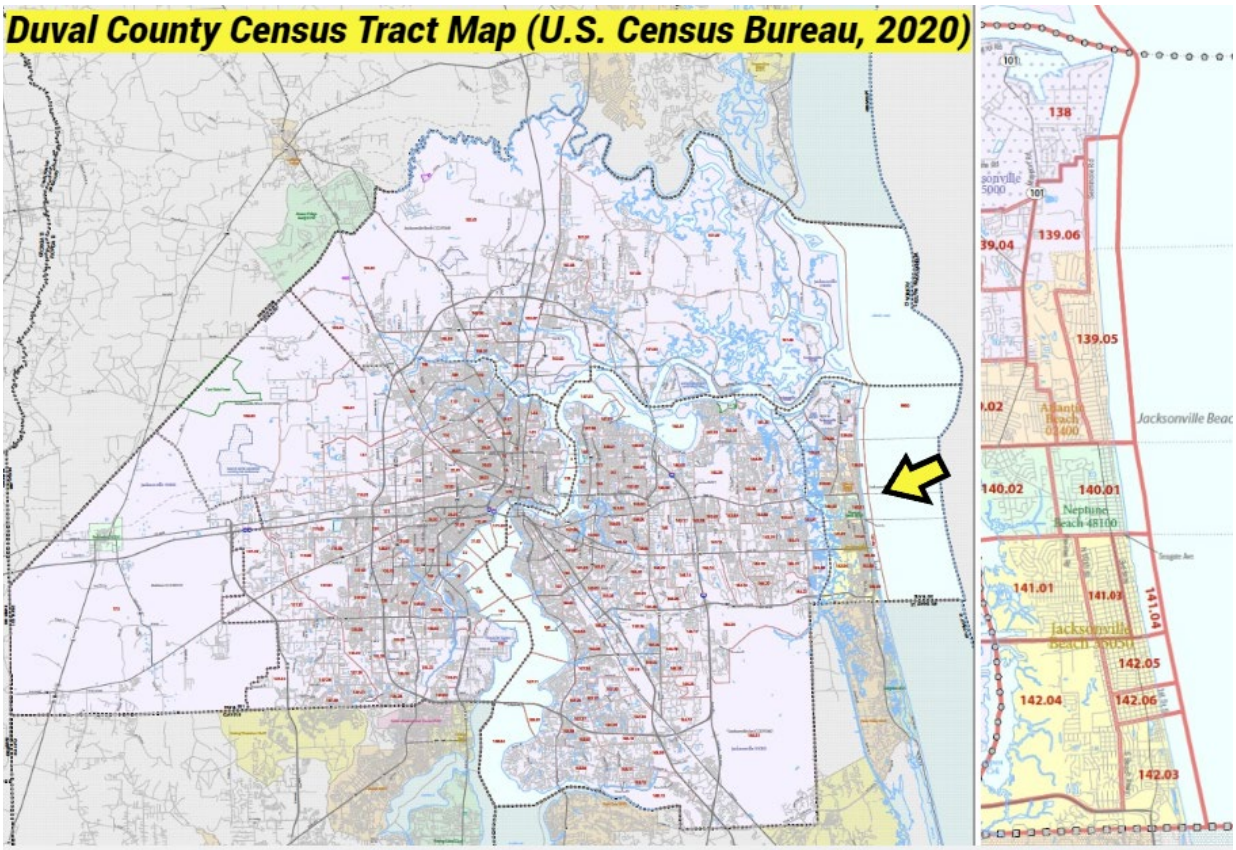


**Figure 2-1. Duval County Census Tract Map (U.S. Census Bureau, 2020).**

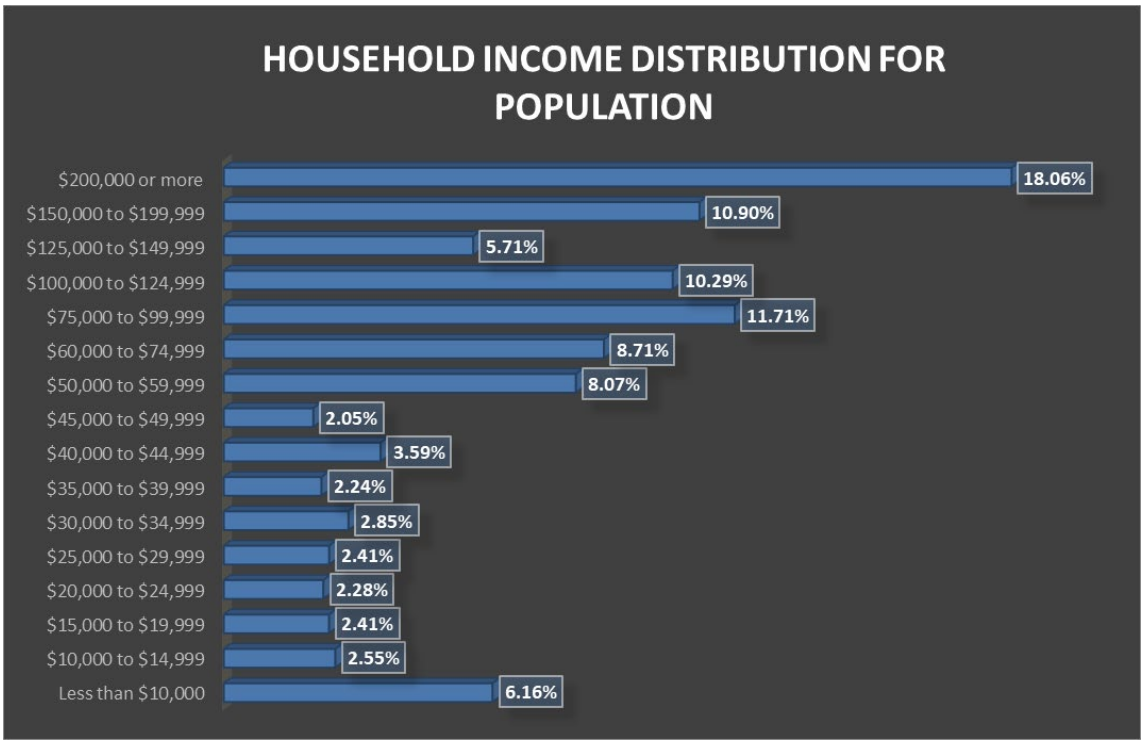


**Figure 2-2. Household income distribution for population.**

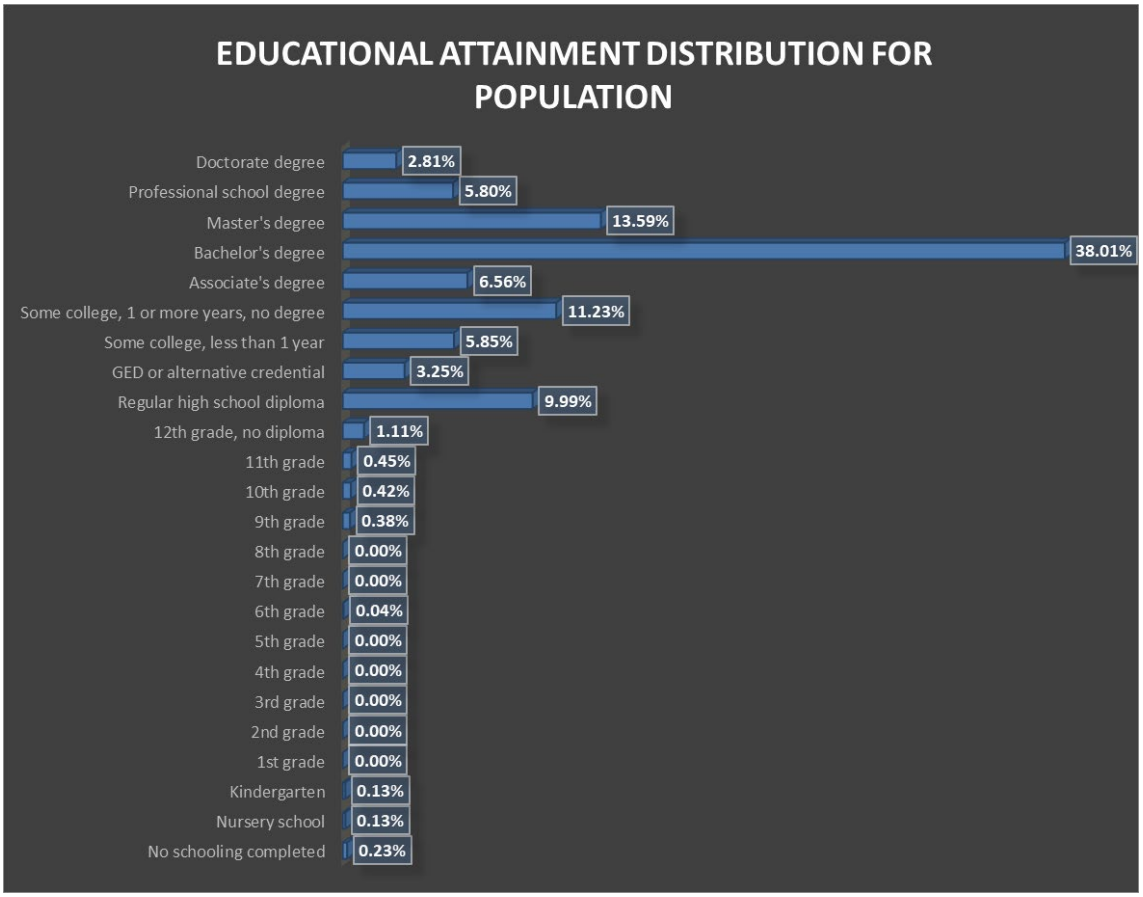


**Figure 2-3. Educational attainment distribution for population.**

### 2.5.1 ENVIRONMENTAL JUSTICE

On February 11, 1994, the President of the U.S. issued Executive Order (E.O.) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. This E.O. mandates that each Federal agency make achieving environmental justice (EJ) part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. Significance thresholds that may be used to evaluate the effects of a proposed action related to EJ are not specifically outlined. The CEQ issued guidance for agencies on how to consider EJ throughout its review of the proposed action. The Corps evaluated this proposed action in accordance with CEQ's Environmental Justice Guidance under the National Environmental Policy Act, dated December 10, 1997, and E.O. 12898. The Corps determines whether a proposed action or its alternatives would result in significant effects related to EJ if the proposed action or an alternative would disproportionately adversely affect an EJ community through its effects on:

- Environmental conditions such as quality of air, water, and other environmental media; degradation of aesthetics, loss of open space, and nuisance concerns such as odor, noise, and dust;
- Human health such as exposure of EJ populations to pathogens;
- Public welfare in terms of social conditions such as reduced access to certain amenities like hospitals, safe drinking water, public transportation, etc.; and
- Public welfare in terms of economic conditions such as changes in employment, income, and the cost of housing, etc.

The Corps conducts an evaluation of EJ impacts using a two-step process. As a first step, the project area is evaluated to determine whether it contains a concentration of minority populations and/or low-income populations. The second step includes evaluation to determine whether the proposed action would result in a disproportionately high adverse effect on these populations.

As defined in CEQ guidance, a minority population occurs where one or both of the following conditions are met within a given geographic area:

- The American Indian, Alaskan Native, Asian, Pacific Islander, Black, or Hispanic population of the affected area exceeds 50 percent; or
- The minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

An affected geographic area is considered to consist of a low-income population (i.e., below the poverty level for purposes of this analysis) where the percentage of low-income persons:

- is at least 50 percent of the total population; or
- is meaningfully greater than the low-income population percentage in the general population or other appropriate unit of geographic analysis.

Using the USEPA EJScreen Tool (https://ejscreen.epa.gov/mapper), the project area was user-defined (see Figure 2-4) and a 1-mile buffer was added to calculate the average percentages for the EJ criteria. Table 2-3 compares the average percentages for the user-defined project area, state of Florida, and U.S. E.O. 12898 and the CEQ's Environmental Justice Guidance Under

NEPA both refer to “low income populations” and “minority populations”. The USEPA EJAssist tool refers to “people of color”, which is why that term is used below in reference to use of the USEPA EJAssist tool.

Based on the information provided by the USEPA EJAssist tool, the average people of color population is less than 50% for the affected area and is lower in the project area compared to the state of Florida and U.S. percentages. The percent of low-income population is less than 50% of the affected area and is lower in the project area compared to the state of Florida and U.S. percentages. Therefore, the study area which comprises the project does not constitute an EJ community. In November 2022, the CEQ released the Climate and Economic Justice Screening Tool Version 1.0. The Corps reviewed the information provided by the CEQ’s tool in March 2023. The information provided by CEQ’s Climate and Economic Justice Screening Tool supports the analysis completed using the USEPA’s EJScreen.

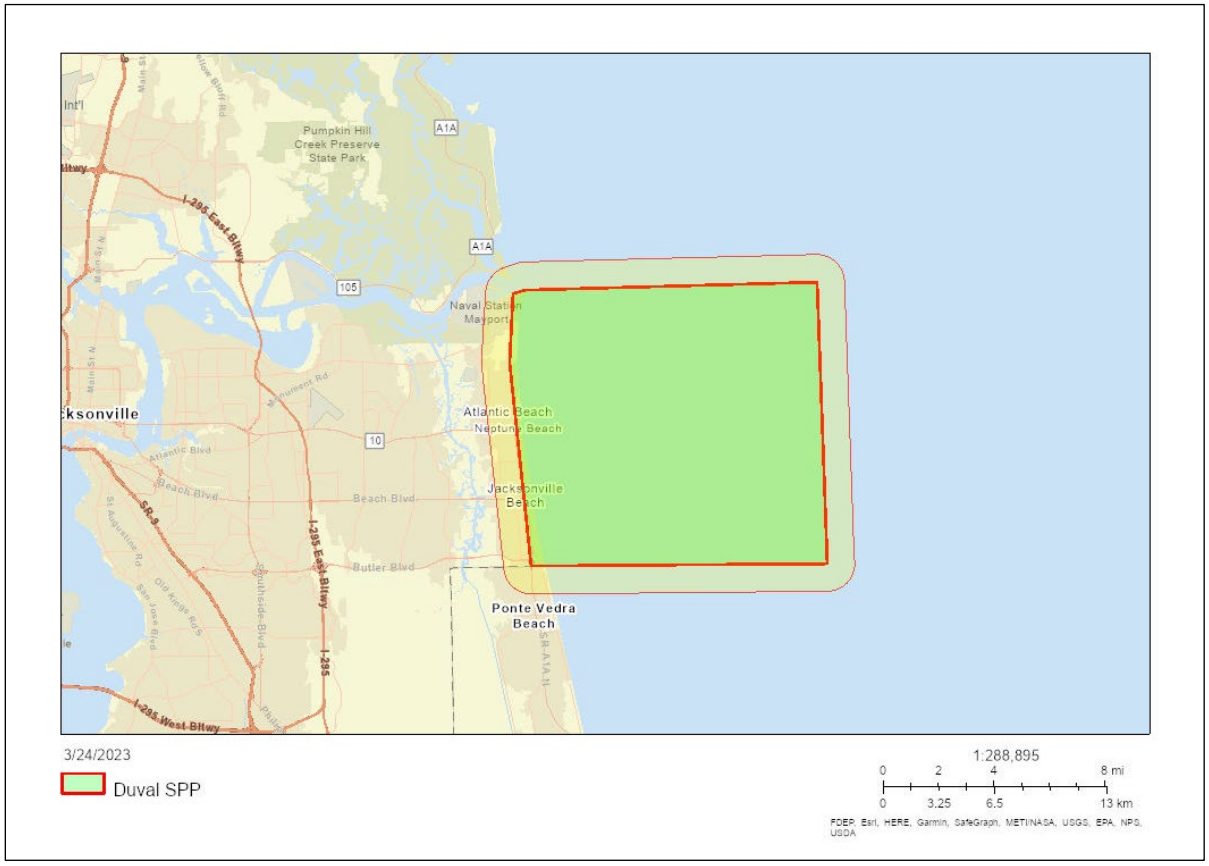


**Figure 2-4. User-defined project area used for EJ analysis conducted in USEPA’s EJScreen. The yellow area represents a 1-mile buffer.**

**Table 2-3. USEPA EJScreen EJ criteria percentages.**

| | User-Defined Project Area % | Florida Average % | U.S. Average % |
|---|---|---|---|
| **People of Color Population** | 15% | 47% | 40% |
| **Low Income Population** | 17% | 33% | 30% |

# 3 ALTERNATIVES

This section describes in detail the No Action Alternative and other reasonable alternatives that were evaluated and/or eliminated from further analysis. The beneficial and adverse environmental effects of the alternatives are presented in comparative form. Section 4 (Environmental Effects) compares the alternatives in more detail, providing a clear basis for choice to the decision maker and the public.

## 3.1 DESCRIPTION OF ALTERNATIVES

### 3.1.1 ALTERNATIVE 1: NO ACTION

NEPA regulations refer to the No Action Alternative as the continuation of existing conditions of the affected environment without implementation of, or in the absence of, the proposed action. The No Action Alternative provides a benchmark for comparison of the environmental effects of the proposed action and any reasonable action alternatives. Under the No Action Alternative, no sand would be placed on the beaches; no sand source would be used. This would cause a delay in future renourishment for the SPP such that the shoreline would continue to erode and cause various detrimental impacts to the human environment.

### 3.1.2 ALTERNATIVE 2: CONTINUED USE OF BORROW AREA SHOAL S

Alternative 2 consists of continuing to use Borrow Area Shoal S as a sand source for periodic or emergency renourishment efforts at the Duval County SPP. Approximately 3.6 MCY of material remains in Borrow Area Shoal S (Olsen Associates, inc., 2019). The Corps has requested the use of up to 2.1 MCY of material from Borrow Area Shoal S for each periodic or emergency renourishment event at the Duval County SPP until the borrow area is depleted. The anticipated dredging interval is approximately every four years; however, more frequent dredging is possible if emergency renourishment is needed. The interval of these emergency events could occur as soon as one year or as long as four years after planned renourishment efforts.

Use of the borrow area allows for a -58-foot cut depth (North American Vertical Datum of 1988 (NAVD88)). Previous experience in Shoal S has led to an understanding that allowing up to two feet of disturbance depth leads to a more efficient dredge event. Much of the northern portion of the borrow area features only one to two feet of sand above -58 feet and, without allowance below the 58-foot depth the ability to dredge the remaining shallow volume within the borrow area is limited. Therefore, while the allowable cut depth of -58 feet is anticipated, there may be some isolated areas that have deeper disturbances. However, no dredging will intentionally occur below -58 feet. Removing the strict buffer results in more efficient use of the draghead. This efficiency means the draghead can remain on the seafloor for longer periods of time. This decreases the risk of entrainment[3] to marine animals (e.g., sea turtles) and the overall benthic footprint of the project.

Beach compatible fill, described in 62B-41.007 F.A.C, would be dredged from the ocean bottom and placed along the Duval County SPP shoreline. Renourishment may only be needed in certain portions of the project, which would be less than the full project footprint. The actual quantity of volume placed may vary based on changes in the existing conditions of the beach. Also, there are a variety of different combinations of areas within the SPP that could be determined to need

[3]Entrainment is defined in Section 3.1 of the SARBO as occurring when a species either comes into contact with a suction type dredge (hopper or cutterhead) or is in close enough proximity that they cannot outswim the suction velocity created by the dredge.

sand for renourishment; all these alternative scenarios would have similar, but less potential effects on the quality of the human environment at the borrow site than this Alternative. As such, analysis of this alternative in this SEA would support dredging events where less than the entire project footprint is nourished by providing sufficient information about the potential effects on the quality of the human environment.

As the Corps does not dictate contractor methods to perform the required dredging, the Corps has evaluated a wide range of potential hydraulic or mechanical dredge techniques, equipment, and associated characteristics as described in the Corps' Engineer Manual (EM) 1110-2-5025, Engineering and Design - Dredging and Dredged Material Management, 31 July 2015[4]. The most recent Duval County SPP SEA (Corps, 2015) provides a description of potential construction methodology in Section 2.1.2. This analysis is incorporated by reference into this SEA as the types of dredges (e.g., hopper dredging) and dredging methodologies are expected to be the same. Typically, the period of performance of the contract is greater than the days of actual construction, allowing for weather delays, contractor start and stops (i.e., contractor leaves and returns to the project within the contract's period of performance), and potential mechanical/equipment issues. Active beach renourishment is dependent on the volume and material of sand that requires placement on the beach and assumes that the work is occurring twenty-four hours per day, seven days per week.

### 3.1.3 ALTERNATIVE 3: USE OF BORROW AREA "A" (A1+A2)

Alternative 3 consists of using Borrow Area "A" (A1+A2) as a sand source for periodic or emergency renourishment efforts at the Duval County SPP. Borrow Area "A" is estimated to contain up to about 0.9 MCY of sand after the most recent 2011 dredging (Olsen Associates, inc., 2019). Use of Borrow Area "A" allows for a cut depth between -49.5 and -56.0 feet (NAVD88), depending on specific section of the borrow area. The Corps has requested the use of up to 2.1 MCY of material for each periodic or emergency renourishment event at the Duval County SPP. The anticipated dredging interval is approximately every four years; however, more frequent dredging is possible if emergency renourishment is needed. The interval of these emergency events could occur as soon as one year or as long as four years after planned renourishment efforts.

Beach compatible fill, described in 62B-41.007 F.A.C, would be dredged from the ocean bottom and placed along the Duval County SPP shoreline. Renourishment may only be needed in certain portions of the project, which would be less than the full project footprint. The actual quantity of volume placed may vary based on changes in the existing conditions of the beach. Also, there are a variety of different combinations of areas within the SPP that could be determined to need sand for renourishment; all these alternative scenarios would have similar, but less potential effects on the quality of the human environment at the borrow site than this alternative. As such, analysis of this alternative in this SEA would support dredging events where less than the entire project footprint is nourished by providing sufficient information about the potential effects on the quality of the human environment.

As the Corps does not dictate contractor methods to perform the required dredging, the Corps has evaluated a wide range of potential hydraulic or mechanical dredge techniques, equipment, and associated characteristics as described in the Corps' Engineer Manual (EM) 1110-2-5025,

[4] EM 1110-2-5025 is available to be downloaded from https://www.publications.usace.army.mil/portals/76/publications/engineermanuals/em_1110-2-5025.pdf.

Engineering and Design - Dredging and Dredged Material Management, 31 July 2015[5]. The most recent Duval County SPP SEA (Corps, 2015) provides a description of potential construction methodology in Section 2.1.2. This analysis is incorporated by reference into this SEA as the types of dredges (e.g., hopper dredging) and dredging methodologies are expected to be the same. Typically, the period of performance of the contract is greater than the days of actual construction, allowing for weather delays, contractor start and stops (i.e., contractor leaves and returns to the project within the contract's period of performance), and potential mechanical/equipment issues. Active beach renourishment is dependent on the volume and material of sand that requires placement on the beach and assumes that the work is occurring twenty-four hours per day, seven days per week.

### 3.1.4 ALTERNATIVE 4: USE OF BORROW AREA "B" (B1)

Alternative 4 consists of using Borrow Area "B" (B1) as a sand source for periodic or emergency renourishment efforts at the Duval County SPP. Borrow Area "B", which has not yet been dredged, is estimated to contain approximately 5.7 MCY of sand (Olsen Associates, inc., 2019). Use of Borrow Area "B" allows for a cut depth between -58.0 and -59.0 feet (NAVD88), depending on the specific section of the borrow area. The Corps has requested the use of up to 2.1 MCY of material for each periodic or emergency renourishment event at the Duval County SPP. The anticipated dredging interval is approximately every four years; however, more frequent dredging is possible if emergency renourishment is needed. The interval of these emergency events could occur as soon as one year or as long as four years after planned renourishment efforts.

Beach fill would be dredged from the ocean bottom and placed along the Duval County SPP shoreline. Renourishment may only be needed in certain portions of the project, which would be less than the full project footprint. The actual quantity of volume placed may vary based on changes in the existing conditions of the beach. Also, there are a variety of different combinations of areas within the SPP that could be determined to need sand for renourishment; all these alternative scenarios would have similar, but less potential effects on the quality of the human environment at the borrow site than this Alternative. As such, analysis of this alternative in this SEA would support dredging events where less than the entire project footprint is nourished by providing sufficient information about the potential effects on the quality of the human environment.

As the Corps does not dictate contractor methods to perform the required dredging, the Corps has evaluated a wide range of potential hydraulic or mechanical dredge techniques, equipment, and associated characteristics as described in the Corps' Engineer Manual (EM) 1110-2-5025, Engineering and Design - Dredging and Dredged Material Management, 31 July 2015[5]. The most recent Duval County SPP SEA (Corps, 2015) provides a description of potential construction methodology in Section 2.1.2. This analysis is incorporated by reference into this SEA as the types of dredges (e.g., hopper dredging) and dredging methodologies are expected to be the same. Typically, the period of performance of the contract is greater than the days of actual construction, allowing for weather delays, contractor start and stops (i.e., contractor leaves and returns to the project within the contract's period of performance), and potential mechanical/equipment issues. Active beach renourishment is dependent on the volume and material of sand that requires placement on the beach and assumes that the work is occurring twenty-four hours per day, seven days per week.

[5] EM 1110-2-5025 is available to be downloaded from https://www.publications.usace.army.mil/portals/76/publications/engineermanuals/em_1110-2-5025.pdf.

## 3.2 ALTERNATIVES ELIMINATED FROM DETAILED EVALUATION

Four alternatives were considered in this SEA for the Federal action of continued use of a sand source to obtain up to 2.1 MCY of material for each periodic or emergency renourishment. If the No Action Alternative is selected, no sand will be placed, and the beach will continue to erode. Alternative sources of sand would be needed to continue with the Duval County SPP, such as new borrow sources yet to be identified or truck haul from an upland sand mine, a common method for obtaining material for beach nourishment in Florida. Truck haul or other sand sources would require new studies and NEPA analysis.

Alternative 3 (Use of Borrow Area "A") was eliminated from detailed evaluation based on the fact that the Borrow Area does not contain enough sand (approximately 0.9 MCY) to meet the stated needs for the project (2.1 MCY of material for each periodic or emergency renourishment event; Section 1.5). Alternative 4 (Use of Borrow Area "B") was eliminated based on the fact that the Borrow Area sediment has an average silt content over 5% (Section 2.4.1). As such, sediment from Borrow Area "B" as currently analyzed would not be found suitable for beach placement according to the Florida "Sand Rule" (Florida Administrative Code (F.A.C.) 62B-41.007(2)(j)). However, the borrow area could potentially be re-evaluated to be used in the future, as there are certain areas and depths that are below the silt content threshold that could be viable.

## 3.3 FINAL ARRAY OF ALTERNATIVES

Alternatives 1 (No Action) and 2 (Continued Use of the Borrow Area Shoal S) are carried forward for further analysis. Section 4 (Environmental Effects) compares the alternatives in more detail, providing a clear basis for the choice to the decision maker and the public.

# 4 ENVIRONMENTAL EFFECTS

This section is the scientific and analytic basis for the comparisons of the alternatives carried forward as required by NEPA (40 CFR § 1502.16). This section is organized by resource topic as described in Section 2 (Existing Conditions) and presents the analysis of potential effects of each alternative described within each resource section. This evaluation includes determining anticipated direct, indirect, and cumulative effects of the alternatives described in Section 3 (Alternatives) on the existing conditions described in Section 2 (Existing Conditions), relative to the No Action Alternative.

The environmental effects of incorporating resiliency design refinements (i.e., dune incorporation with vegetation, vehicle access modifications, and pedestrian access modifications with sand fencing) are addressed in Section 4 of the 2019 NEPA document for dune and other resiliency design refinements for SPPs in Nassau, Duval, St. Johns, and Brevard counties (Corps, 2019b). Environmental effects of transporting and placing sand on the Duval County shoreline are addressed in Section 4 of the 2005 NEPA document (Corps, 2005), Section 9 of the 1993 third renourishment NEPA document (Corps, 1993), and the Environmental Considerations section of the 1990 reevaluation NEPA document (Corps, 1991). These effects would be the same as those evaluated in the mentioned NEPA documents and are therefore hereby incorporated by reference.

The prior NEPA document (Corps, 2015) only considered effects to dredging Borrow Area Shoal S as a one-time event. Therefore, this section's analysis addresses only those effects associated specifically with the continued use of Borrow Area Shoal S which were not previously evaluated. Environmental effects of using Borrow Area "A" (A1+A2) and Borrow Area "B" (B1) are addressed in Section 5 of the 2011 NEPA document (BOEM, 2011) and Section 4 of the 2005 NEPA document (Corps, 2005). However, in addition to the Alternatives analysis below, the Corps would consider these other existing borrow areas for Duval County SPP by completing additional NEPA analysis and applying for new BOEM leases if these borrow sources were to be used. New studies and NEPA analysis would also be required to address the inclusion of any new, additional sand sources not previously analyzed to continue renourishment efforts at Duval County SPP.

CEQ's NEPA implementing regulations, 40 CFR § 1508.1(g), define effects or impacts as changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and have a reasonably close causal relationship to the alternatives, including those effects that occur at the same time and place as the alternatives and may include effects that are later in time or farther removed in distance from the alternatives. The potential effects of the alternatives are described in this SEA using the following terms:

- **Beneficial**: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
- **Adverse**: A change that moves the resource away from a desired condition or detracts from its appearance or condition.

Intensity, or severity of the potential impact, was rated as follows:

- **Negligible Effect**: Change to the resource or discipline is barely perceptible, not measurable, and confined to a small area.
- **Minor Effect**: Change to the resource or discipline is perceptible, measurable, and localized.

- **Moderate Effect**: Change is clearly detectable and could have appreciable effect on the resource or discipline; or the effect is perceptible and measurable throughout the study area.
- **Major Effect**: Change to the resource or discipline is substantial, highly noticeable, and would occur on a regional scale.

Duration of the potential impact was rated as follows:

- **No Duration**: No effect.
- **Temporary**: Effects generally occur during construction by the end of which the resources recover their pre-construction conditions.
- **Short-term**: Effects generally occur during construction and for a limited time thereafter, generally less than two years, by the end of which the resources recover to their pre-construction conditions.
- **Long-term**: Effects last beyond the construction period, and the resources may not regain their preconstruction conditions for a longer period.

## 4.1 GENERAL SETTING

### Alternative 1: No Action

No effects to the general setting are expected without a project at previously analyzed borrow areas because dredging and associated effects (i.e., turbidity, removal of sediment, etc.) will not occur at any existing sand sources previously analyzed for the Duval County SPP. Shoreline erosion and degradation of the beach template will continue to occur on the Duval County SPP with an adverse minor to moderate long-term effect.

### Alternative 2: Continued Use of Borrow Area Shoal S

Alternative 2 will have no beneficial effect on the borrow area. The removal of sand from Borrow Area Shoal S will have a moderate, adverse effect on the borrow area. The removal of substrate will alter the morphology and substrate of the borrow area, resulting in impacts to benthic habitats and organisms using this habitat. Detailed analysis of these impacts can be found throughout this section of the SEA and is also summarized for comparison purposes in Table 5-1 of Section 5.

## 4.2 NATURAL ENVIRONMENT

#### Alternative 1: No Action

No effects to the natural environment are expected at previously analyzed borrow areas without a project because dredging and associated effects (i.e., interactions with wildlife, turbidity, removal of sediment, etc.) will not occur at any existing sand sources for the Duval County SPP. Shoreline erosion and degradation of the beach template will continue to occur on the Duval County SPP. As such, various plants and animals using the beach in these areas will experience adverse minor to moderate long-term effects by loss of habitat (e.g., reduced area for nesting, foraging, etc.). The dune will continue to erode and eventually be eliminated, along with the associated dune vegetation, in the developed portions of the shoreline.

### Alternative 2: Continued Use of Borrow Area Shoal S

Implementation of Alternative 2 will result in temporary increases in turbidity and noise as well as the removal and burial of benthic species and short-term displacement of fish and other marine wildlife at the borrow area. Direct effects to birds, fish, and other wildlife from project construction are expected to be minimal as these animals are motile and can avoid dredging activities. Fish and other marine wildlife (i.e., sharks, rays, marine mammals, etc.) could experience displacement during dredging operations, although the operation of the dredge is not expected to affect these species any more than other vessels operating within the area. These effects are expected to be minor and temporary as a result of the duration and limited extent of the dredging operations relative to the abundance of similar adjacent habitat and the mobility of these resources. There is also risk of entrainment associated with hopper dredge operations to fish and other marine wildlife. Additionally, dredging in the borrow area will remove unvegetated, open sandy substrate as well as non-motile benthic invertebrates which will result in a localized, short-term adverse reduction in the abundance, diversity, and biomass of the immediate fauna. These effects are expected to be short-term because surrounding areas can serve as a primary source for benthos re-colonization (Hammer et al., 2005) and because the area that will be dredged is relatively small. Analysis conducted in the prior NEPA documentation (i.e., 2015 SEA) for natural environment resource factors, such as fish and other wildlife, T&E species, and EFH, remains valid and is incorporated herein. Further analysis is conducted in this SEA for the T&E species and EFH to reflect new information related to these resources.

### 4.2.1 THREATENED AND ENDANGERED (T&E) SPECIES

#### Alternative 1: No Action

No effects are expected to T&E species without a project at previously analyzed borrow areas because dredging and associated effects (i.e., interactions with wildlife, turbidity, noise, trawling, removal of sediment, etc.) will not occur at any existing sand sources for the Duval County SPP. Shoreline erosion will continue to occur on the Duval County SPP. This may have an adverse moderate long-term effect by reducing available habitat for nesting sea turtles and ESA listed shorebirds (i.e., red knot).

#### Alternative 2: Continued Use of Borrow Area Shoal S

The Corps' effect determinations to T&E species in the vicinity of the borrow area are provided in Table 4-1. Detailed descriptions of the different equipment types and related operating parameters (e.g., hydraulic cutterhead dredge, trailing suction hopper dredge, sea turtle relocation trawling, etc.) that may be associated with each alternative, including their related impact producing factors, are provided in the 2020 SARBO and incorporated by reference. These activities and related impact producing factors are the basis of the comparison of effects among alternatives.

Swimming Sea Turtles

Temporary adverse effects to sea turtles may occur during the dredging of the borrow area. Risk of entrainment associated with hopper dredge and relocation trawling operations may impact animals feeding or resting on or near the seafloor (i.e., primarily swimming sea turtles). These animals will be vulnerable to entrainment as this effect is believed to occur primarily when the draghead is operating on the bottom, if suction is created in the draghead while the device is being placed or removed, or when the dredge is operating on an uneven, rocky substrate and rises off the bottom (SARBO, 2020). Entrainment also occurs during relocation trawling, which is a method used during hopper dredging to minimize the lethal take risk of ESA-listed species by towing a net to capture and relocate animals (primarily sea turtles and sturgeon) away from the dredge area. This risk is reduced through implementation of the SARBO Project Design Criteria

(PDCs), as described in Section 6.1. If relocation trawling is needed, this action will first be coordinated with the Corps' South Atlantic Division (SAD) and NMFS. There is a risk of vessel

**Table 4-1. Corps' effect determinations for T&E species potentially present in the borrow area listed under the ESA.**

| Common Name | Scientific Name | Coordinating Agency | Biological Opinion | Corps' Effect Determination |
|---|---|---|---|---|
| Green sea turtle - swimming | *Chelonia mydas* | NMFS | SARBO 2020 | May Affect |
| Leatherback sea turtle - swimming | *Dermochelys coriacea* | NMFS | SARBO 2020 | May Affect |
| Loggerhead sea turtle - swimming | *Caretta caretta* | NMFS | SARBO 2020 | May Affect |
| Kemp's ridley sea turtle - swimming | *Lepidochelys kempii* | NMFS | SARBO 2020 | May Affect |
| Smalltooth sawfish | *Pristis pectinata* | NMFS | SARBO 2020 | MANLAA (May affect if relocation trawling is implemented) |
| Oceanic whitetip shark | *Carcharhinus longimanus* | NMFS | SARBO 2020 | NE |
| Giant manta ray | *Manta birostris* | NMFS | SARBO 2020 | MANLAA (May affect if relocation trawling is implemented) |
| Shortnose Sturgeon | *Acipenser brevirostrum* | NMFS | SARBO 2020 | MANLAA (May affect if relocation trawling is implemented) |
| Atlantic Sturgeon | *Acipenser oxyrinchus* | NMFS | SARBO 2020 | MANLAA (May affect if relocation trawling is implemented) |
| North Atlantic right whale | *Eubalaena glacialis* | NMFS | SARBO 2020 | MANLAA |
| Loggerhead Sea Turtle - LOGG-N-14 | *Caretta caretta* | NMFS | SARBO 2020 | NLAM |
| North Atlantic Right Whale - Southeastern U.S. Calving Area Unit 2 | *Eubalaena glacialis* | NMFS | SARBO 2020 | NLAM |

*No Effect (NE)*
*May Affect, but is not Likely to Adversely Affect (MANLAA)*
*Not Likely to Adversely Affect (NLAA)*
*Not Likely to Adversely Modify (NLAM)*

strikes to ESA-listed species (including sea turtles), as these species regularly surface to breathe and may spend time at or near the surface of the water. However, this risk is reduced through implementation of the SARBO PDCs, including adherence to reduced vessel speeds as defined

in SARBO's Appendix F. These species are highly mobile and, with reduced vessel speeds, will likely be able to avoid equipment working in this area.

Fish and Elasmobranchs
Temporary, minor adverse effects to fish and elasmobranchs species are anticipated during the dredging of the borrow area. Section 3.1.1 of the 2020 SARBO (NMFS, 2020) analyzed effects of dredging (i.e., mechanical, hopper, and cutter suction) as well as water quality impacts from dredging and dredged material placement on the giant manta ray, smalltooth sawfish, whales, and sharks and determined these effects to be discountable due to the infrequency of documented take as well as the species' ability to avoid the area. Risk of entrainment associated with hopper dredge and relocation trawling operations exists for these species as well, however, the SARBO PDCs implemented for protection of sea turtles extend protection to some fish and marine animals in the vicinity as well. If relocation trawling is needed, this action will first be coordinated with the Corps' South Atlantic Division (SAD) and NMFS.

North Atlantic Right Whale
Temporary, minor adverse effects to T&E species are anticipated during the dredging of the borrow area. Section 3.1.1 of the 2020 SARBO (NMFS, 2020) analyzed effects of dredging (i.e., mechanical, hopper, and cutter suction) as well as water quality impacts from dredging and dredged material placement on various T&E species (including whales) and determined these effects to be discountable due to the infrequency of documented take as well as the species' ability to avoid the area. Risk of entrainment associated with hopper dredge and relocation trawling operations exists for these species as well, however, the SARBO PDCs implemented for protection of sea turtles extend protection to some fish and marine animals in the vicinity as well.

There is a risk of vessel strikes to ESA-listed species (including whales) as these species regularly surface to breathe and may spend time at or near the surface of the water. However, this risk is reduced through implementation of the SARBO PDCs, including adherence to reduced vessel speeds as defined in SARBO's Appendix F. These species (i.e., marine mammals, sea turtles, etc.) are highly mobile and, with reduced vessel speeds, will likely be able to avoid equipment working in this area. Other whales (i.e., blue, fin, sei, sperm) generally occur in deeper water than where dredging takes place. Dredging operations may also present risk of vessel noise-related behavioral disruption to marine animals. The 2015 SEA discussed potential effects from dredging noise to whales, and additional detailed analysis on effects of noise from dredging is included in SARBO Section 3.1.8.

The project will implement all applicable SARBO PDCs and other relevant minimization measures to reduce any potential effects to federally listed species during the project's construction (see Section 6.1 for the environmental commitments).

### 4.2.2 ESSENTIAL FISH HABITAT (EFH)

#### Alternative 1: No Action
No effects are expected to EFH without a project at previously analyzed borrow areas because dredging and associated effects (i.e., interactions with wildlife, turbidity/siltation, water quality changes, noise, removal of sediment and associated organisms, etc.) will not occur at any existing sand sources for the Duval County SPP. No effects will occur in the water adjacent to the beach because no action will take place.

#### Alternative 2: Continued Use of Borrow Area Shoal S

The Corps has determined that continued use of Borrow Area Shoal S will have minimal adverse short-term effects on EFH and no adverse effects on federally managed fisheries along the northeast coast of Florida. EFH impacts include turbidity/siltation effects including increased light attenuation from turbidity, direct removal of benthic organisms as a result of dredging, and alteration of hydrodynamic regimes and physical habitat. Temporary, minor adverse effects could occur to marine animals' vision and organisms with gills due to increased turbidity during dredging. Additionally, the 2015 SEA determined that dredge noise could cause behavioral disturbance (i.e., displacement/avoidance); however, these effects will be temporary given their limit to the time of construction. The 2015 analysis remains valid and is incorporated herein. Benthic infaunal and sessile organisms that serve as prey to managed species will be removed by dredging. Effects to the macrofaunal community should be short-term as these organisms will begin to re-colonize the borrow area from adjacent similar habitat almost immediately (Burlas et al., 2001; Jutte et al., 2002). The anticipated dredging interval is approximately every four years and thus re-colonization of benthic organisms is expected between events. More frequent dredging is possible if emergency renourishment is needed. The interval of these events could occur as soon as one year or as long as four years after this renourishment effort. A one-year renourishment timeline is unlikely and benthic organism re-colonization will still be likely within 2-3 years post-project, leading to an overall temporary impact to benthic organisms within the borrow area.

The borrow area represents bathymetric peaks or ridges on the seascape rather than level sea bottom. They tend to be semi-permanent features that have slowly formed into linear mounds by currents over time. Dredging sediment to the borrow area depth limit of -58 feet may uncover slightly siltier sediments in localized portions of the borrow area (see Section 4.3.1). However, this is not expected to result in a discernable change in the benthic community. Hopper dredging will create relatively straight shallow cuts to remove the upper sediment layer from these peaks, avoiding creation of deep depressions which could accumulate fine materials. Dredging the elongated shoals in such a way allows sediment sources and associated benthic macroinvertebrate to be left adjacent to and interspersed throughout the dredged cuts, which may lead to a more uniform infilling process by adjacent sediment and recovery of the benthic macroinvertebrate populations (CSA et al., 2010). Alternatively, a cutterhead dredge tends to create deeper cuts/pits in the substrate. The use of this dredge type would alter the geomorphology of Shoal S and that alteration could lead to changes in use of the directly affected area by benthic invertebrates and various fish species. However, due to the concentration of sand removal in a smaller footprint with a cutterhead dredge, the spatial impact to EFH would be less than with the use of a hopper dredge. The borrow area encompasses a fraction of the entire water body and similar habitat occurs immediately adjacent. EFH coordination with the NMFS Habitat Conservation Division (HCD) was initiated concurrently with the noticing of this SEA's public and agency comment period. NMFS HCD responded with no EFH conservation recommendations for the project. EFH consultation is complete.

## 4.3 PHYSICAL ENVIRONMENT

**Alternative 1: No Action**

No effects are expected to the physical environment without a project at previously analyzed borrow areas because dredging and associated effects (i.e., turbidity/siltation, water quality changes, area use, etc.) will not occur at any existing sand sources for the Duval County SPP. No effects are expected to the physical oceanography and water quality near the beach because no placement will occur. Shoreline erosion and degradation of the beach template will continue to occur on the Duval County SPP. This will cause an adverse long-term moderate effect to the

physical environment such as a decreased beach template, less space for beach recreational activities, and a decline in overall aesthetics.

### Alternative 2: Continued Use of Borrow Area Shoal S

Implementing Alternative 2 will see various impacts to the physical environment. The primary anticipated change in water quality at Borrow Area Shoal S will be a short-term increase in turbidity during dredging and shortly thereafter while turbidity dissipates. As such, the Corps has determined any adverse effects from continued use of the borrow area to water quality will be minor and short-term. A detailed analysis of these effects is found in Section 4.2.2 of the previous NEPA document (Corps, 2015). Additionally, there would be no overflow impacts to the water column if a cutterhead dredge is used as opposed to a hopper dredge. As was determined in the 2011 EA, the physical oceanography of a borrow area near Borrow Area Shoal S will only suffer minor, temporary effects because of the distance offshore and the relative water depth (BOEM, 2011).

Given no known sources of HTRW in Borrow Area Shoal S, continued use of the borrow area should have no effect on HTRW. Continued use of the borrow area will have no effect on borrow area aesthetics. Additionally, while there may be some minor effects on recreation, navigation, and commercial fishing in the borrow area because of the dredge activity, this effect will be negligible and temporary in nature given the short duration of dredging events and availability of alternate transit routes and fishing areas.

## 4.3.1 SEDIMENT CHARACTERISTICS

### Alternative 1: No Action

No effects are expected to sediment characteristics without a project occurring at previously analyzed borrow areas because dredging and associated effects (i.e., different sand characteristics) will not occur at any existing sand sources for the Duval County SPP. No effects are expected to sediment characteristics of the beach because no additional sand would be added.

### Alternative 2: Continued Use of Borrow Area Shoal S

The continued use of Borrow Area Shoal S considered here will have negligible effects to the local sediment characteristics of the borrow area where the sediment is disturbed below -58 feet depth. The proposed action includes dredging up to the -58 feet depth, which may potentially cause disturbances deeper than -58 feet as material is dredged. Sediment samples taken in the borrow area at an elevation 60-62 feet (NAVD88) indicate some areas of poorly-graded, fine to medium-grained quartz sand with an average visual shell content of 6.95 percent and an average silt content of 4.98 percent. Although this is siltier material than the overlying sediment used for renourishment, the overall characteristic of sediments exposed on the seafloor are very similar to the overlaying sediments.

The borrow area is a small portion of a larger sand body historically called A4. A4 has a perimeter of 12 miles and covers a 4.5 square mile area (Zarillo et al., 2009). The potential impacts from the alteration of the benthic substrate through the dredging of A4 will be minimized by the abundance of similar substrate directly adjacent to the borrow area.

## 4.3.2 TRIBAL NATIONS

### Alternative 1: No Action

Without a project there will be no placement of sand within the Duval County SPP, resulting in continued erosion of the beaches. This will exhibit no adverse effects to Tribal Nations since no Native American owned lands, reservation lands, or identified Traditional Cultural Properties exist within the project area; the beaches were artificially constructed with the authorization of the SPP in 1965 and have been artificially maintained ever since.

### Alternative 2: Continued Use of Borrow Area Shoal S

No portion of the proposed action is located within or adjacent to known Native American owned lands, reservation lands, or identified Traditional Cultural Properties. Therefore, the Corps has determined that continued use of the borrow area exhibits no adverse effects to Tribal Nations.

## 4.3.3 CULTURAL RESOURCES

### Alternative 1: No Action

Without a project there will be no placement of sand within the Duval County SPP, resulting in continued erosion of the beaches. This poses potential adverse effects to potentially significant cultural resources that were located in the nearshore during a submerged cultural resources assessment survey conducted in 2011 (Krivor, 2012).

### Alternative 2: Continued Use of Borrow Area Shoal S

Effects to cultural resources within the borrow area are addressed in the 2015 SEA (Corps, 2015). The Corps conducted an additional remote sensing survey within the borrow area in 2016 (Weaver, 2016). Based on the results of this survey and the findings discussed in the previous NEPA documents, the Corps has determined that continued use of the borrow area exhibits no adverse effects to cultural resources, contingent upon the maintenance of three avoidance buffers. The Florida SHPO provided concurrence with this determination by letter dated April 1, 2016 (DHR Project File No.: 2016-1371).

## 4.3.4 UNEXPLODED ORDNANCE (UXO)/MUNITIONS OF EXPLOSIVE CONCERN (MEC)

### Alternative 1: No Action

The presence/absence of UXO/MEC is not likely to change from the existing conditions without a project occurring because dredging and associated effects (i.e., removal of sediment) will not occur at any existing sand sources for the Duval County SPP, and placement will not occur on the beach.

### Alternative 2: Continued Use of Borrow Area Shoal S

Given the low probability of MECs within the borrow area, the Corps determined that continued use of the borrow area is unlikely to have an effect due to UXO/MEC presence and disturbances.

## 4.3.5 AIR QUALITY

### Alternative 1: No Action

There will be no additional air quality effects without a project because dredging and associated effects (i.e., air emissions) will not occur at any existing sand sources for the Duval County SPP, and placement will not occur on the beach.

### Alternative 2: Continued Use of Borrow Area Shoal S

Emissions of criteria pollutants, greenhouse gases, and other hazardous air pollutants will result from operation of the dredge pumps and coupled pump-out equipment, dredge propulsion engines, and tugs, barges, and support vessels used in the placement and relocation of mooring buoys. In addition, air emissions will result from bulldozers, trucks, and other heavy equipment used in the construction of the berm, beach, and dunes. Carbon monoxide and particulate emissions at the project site, during construction, may be considered offensive; but are generally not considered far-reaching. The primary emissions will result from the burning of fossil fuels by this equipment. Variables that will affect the impact to ambient air quality include the amount of material dredged, the distance from shore at which the dredge operates, and meteorological conditions (e.g., wind velocity and direction). Generally, the dredge produces the majority of emissions during a nourishment project.

To ensure the proposed activity's emissions do not violate NAAQS for criteria pollutants including carbon monoxide (CO), nitrogen dioxide ($NO_2$), lead (Pb), sulfur dioxide ($SO_2$), hydrocarbons (HC) and particulate matter (PM), an emissions analysis was performed to estimate the levels of each of these pollutants that may be generated during project construction. In cooperation with BOEM, ENVIRON International Corp. and the Woods Hole Group developed a Dredging Project Emissions Calculator (DPEC) to estimate the emissions levels that will be generated by proposed beach nourishment and coastal restoration projects (ENVIRON International Corp. and Woods Hole Group, 2013). This Microsoft Access program can be used to calculate emissions during multiple phases of a project, from dredging, to pump-out and sand placement, thereby providing a basis to determine conformity with regulations and impacts analysis. The analysis was run for the Duval County SPP using a large hopper dredge with 6,540 CY hopper capacity, and Borrow Area Shoal S, which represents the farthest distance the dredge will need to travel. The hopper dredge is the likeliest methodology employed for this project. Alternatively, the total emissions would likely increase by approximately 20% should a cutterhead dredge be used to complete this project. The following analysis also included auxiliary equipment (such as tenders, tow boats and crew boats) as well as shore-based equipment (such as loaders and excavators). Estimated emissions levels generated by the DPEC for this project are shown in Table 4-2. These emissions are from the initial renourishment effort considered in this SEA but could be repeated with similar air quality impacts for future borrow area use requests. The total project emissions are dominated by $CO_2$ followed by NOx (represents the sum of Nitric oxide (NO) and $NO_2$ emissions). $CH_4$ emission factors are 2% of HC emission factors (USEPA, 2022) and were also calculated as part of this emissions analysis. $CH_4$ emissions from diesel engines are of minor importance (Cooper and Gustafsson, 2004).

There will be no long-term accumulation of particulates in the project area because offshore sea breezes are likely to disperse pollutants away from the coast and the construction activity is brief and temporary in nature. Exhaust from the construction equipment will have an effect on the immediate air quality around the construction operation but should not impact areas away from the construction area. These emissions will subside upon cessation of operation of heavy equipment. No air quality permits are required for this borrow area lease.

Federal actions for the project are exempt from the Clean Air Act General Conformity Regulations because the project is not located in a designated nonattainment area. The State of Florida does not regulate emissions from off-road equipment or marine vessels (FDEP, 2012); however, implementation of the SPP at Borrow Area Shoal S will result in minor, temporary degradation of air quality due to emissions during dredging operations. Air quality is expected to revert to background levels following the completion of construction.

## 4.4 ECONOMIC ENVIRONMENT AND TRENDS

**Alternative 1: No Action**
A lack of renourishment will result from this alternative and will have an adverse, moderate, and long-term effect to the natural buffer resulting in increased erosion of the dune and berm. It will also result in an increased probability and magnitude of structural and content damage.

**Table 4-2. Summary of project emissions by source and location for hydrocarbons (HC), volatile organic compounds (VOC), carbon monoxide (CO), NOx (represents the sum of Nitric oxide (NO) and nitrogen dioxide ($NO_2$) emissions), particulate matter (PM), carbon dioxide ($CO_2$), and methane ($CH_4$).**

| Type | Mode | Emissions (tons) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | HC | VOC | CO | NOx | $PM_{10}$ | $PM_{2.5}$ | $CO_2$ | $CH_4$ |
| **Inside State** | **Waters** | | | | | | | | |
| **Crew Boat** | | 0.05 | 0.06 | 0.32 | 2.01 | 0.05 | 0.05 | 136.30 | 0.0010 |
| **Tender 1** | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.0000 |
| **Tow Boat** | | 0.11 | 0.11 | 0.72 | 3.69 | 0.08 | 0.07 | 272.61 | 0.0022 |
| **Bulldozer** | | 0.01 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 | 24.47 | 0.0002 |
| **Bulldozer** | | 0.01 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 | 24.47 | 0.0002 |
| **Excavator** | | 0.01 | 0.01 | 0.01 | 0.02 | 0.00 | 0.00 | 24.74 | 0.0002 |
| **Dredge Vessel Generator** | Transit | 0.01 | 0.01 | 0.06 | 0.35 | 0.01 | 0.01 | 24.30 | 0.0002 |
| **Dredge Vessel Main** | Transit | 0.09 | 0.09 | 1.58 | 6.71 | 0.13 | 0.13 | 432.21 | 0.0018 |
| **Dredge Vessel Generator** | Pumping | 0.02 | 0.02 | 0.12 | 0.73 | 0.02 | 0.02 | 50.81 | 0.0004 |
| **Dredge Vessel Main** | Pumping | 0.18 | 0.19 | 3.30 | 14.03 | 0.28 | 0.27 | 903.77 | 0.0036 |
| **Outside State Waters** | | | | | | | | | |
| **Dredge Vessel Generator** | Dredging | 0.01 | 0.01 | 0.06 | 0.37 | 0.01 | 0.01 | 25.40 | 0.0002 |
| **Dredge Vessel Main** | Dredging | 0.09 | 0.09 | 1.65 | 7.02 | 0.14 | 0.14 | 451.88 | 0.0018 |
| **Dredge Vessel Generator** | Transit | 0.02 | 0.02 | 0.09 | 0.55 | 0.01 | 0.01 | 38.07 | 0.0004 |
| **Dredge Vessel Main** | Transit | 0.1 | 0.1 | 2.47 | 10.52 | 0.2 | 0.20 | 677.13 | 0.0020 |
| **Total Emissions** | | 0.89 | 0.93 | 13.70 | 59.96 | 1.21 | 1.17 | 3973.26 | 0.0178 |

Additionally, an adverse, moderate, and long-term effect to overall recreational quality and the local economy is expected.

**Alternative 2: Continued Use of Borrow Area Shoal S**

Beneficial, moderate, and long-term economic effects are expected from the continued use of Borrow Area Shoal S. The project beaches will continue to receive nourishments, which in turn continues to mitigate structural damages and improve overall recreational quality. Local business will continue to benefit from increased desirability, visitations, and local expenditures.

### 4.4.1 ENVIRONMENTAL JUSTICE

#### Alternative 1: No Action

No adverse or disproportionate effects to low income or minority populations are expected for two reasons. First, empirical data shows the population is high income and the majority of the population is not made up of minority populations. Second, the benefits of the shoreline protection are distributed uniformly along the beaches and to the population. Therefore, previously mentioned Alternative 1 economic adverse effects (Section 4.4) will be distributed uniformly along the beaches and to the population.

#### Alternative 2: Continued Use of Borrow Area Shoal S

No adverse or disproportionate effects to low income or minority populations are expected for two reasons. First, empirical data shows the population is high income and the majority of the population is not made up of minority populations. Second, the benefits of the shoreline protection are distributed uniformly along the beaches and to the population. Continued use of Borrow Area Shoal S and the resulting shoreline protection means continued prevention of structural damages and increased overall recreational quality for the entire population.

# 5 PREFERRED ALTERNATIVE

This section compares the alternatives and provides the basis for the selection of the Preferred Alternative.

## 5.1 COMPARISON OF ALTERNATIVES AND SELECTION

The CEQ regulation, 40 CFR § 1501.3(b)(2), states: "[i]n considering the degree of the effects, agencies should consider the following, as appropriate to the specific action: (i) Both short- and long-term effects; (ii) Both beneficial and adverse effects; (iii) Effects on public health and safety; (iv) Effects that would violate Federal, State, Tribal, or local law protecting the environment." Table 5-1 summarizes the major features and consequences of the proposed alternatives for comparison purposes, sufficiently addressing items (i) and (ii). Section 4, Environmental Effects, provides more detailed discussion of effects of the alternatives carried forward for detailed scientific analysis. Effects considerations (iii) and (iv) were used in the development and selection of the alternatives and addressed in detail in Sections 1.6, 3, and 4. These considerations are also discussed in Table 5-1 for the relevant resources.

**Table 5-1. Summary of direct and indirect effects compared between the project alternatives at the borrow area.**

| Environmental Factor / Resource | Alternative 1: No Action | Alternative 2: Continued Use of Borrow Area Shoal S |
|---|---|---|
| **Natural Environment** | No effect offshore. Shoreline erosion and degradation of the beach template will continue to occur with an adverse minor to moderate long-term effect. | Temporary, minor to moderate adverse effects (displacement of fish and wildlife during dredging and relocation trawling (if implemented); removal of benthic infauna. |
| **Threatened and Endangered (T&E) Sea turtles:** ***Green (North Atlantic Distinct Population Segment), hawksbill, leatherback, loggerhead, and Kemp's ridley*** | No effect offshore. Shoreline erosion will continue to occur with an adverse moderate long-term effect by reducing available habitat for nesting sea turtles. | Temporary, adverse effect (displacement/avoidance, incidental lethal take during hopper dredging, and non-lethal take relocation trawling if implemented). |
| **Threatened and Endangered (T&E):** ***Smalltooth sawfish, giant manta ray, and sturgeon*** | No effect. | Temporary, minor adverse effect (potential displacement/avoidance during dredging and relocation trawling, if implemented). |
| **Threatened and Endangered (T&E):** ***Oceanic white tip, whales*** | No effect. | No effect to oceanic white tip. Temporary, minor adverse effect to whales (potential displacement/avoidance). |
| **EFH** | No effect. | Minimal short-term adverse effects on EFH (increased light attenuation, noise disturbances, alteration of hydrodynamics and physical habitat, removal of benthic infaunal prey to managed species); no effect on federally managed fisheries along the northeast coast of Florida. |
| **Physical Environment:** ***Water Quality, HTRW, Aesthetics, Recreation, Navigation, and Commercial Fishing*** | No effect offshore or to nearshore physical oceanography and water quality. Shoreline erosion and degradation of the beach template will continue, causing an adverse long-term moderate effect to the physical environment such as a decreased beach template, less space for beach | Short-term, minor adverse effects on water quality (increased turbidity during and shortly after dredging as turbidity dissipates). No effects to HTRW or aesthetics. Negligible effects on recreation, navigation, and commercial fishing. |

| | | |
|---|---|---|
| | recreational activities, and a decline in overall aesthetics. | |
| **Sediment Characteristics** | No effect. | Negligible effects (sediment characteristic exposed on the seafloor are substantially similar to the overlaying sediments). |
| **Tribal Nations** | No effect. | Same as Alternative 1. |
| **Cultural Resources** | Without a project there will be no placement of sand within the Duval County SPP, resulting in continued erosion of the beaches. This poses potential adverse effects to potentially significant cultural resources that were located in the nearshore during a submerged cultural resources assessment survey conducted in 2011 (Krivor, 2012). | No adverse effect contingent upon the maintenance of three avoidance buffers. |
| **UXO/MEC** | No effect. | Unlikely to have an effect. |
| **Air Quality** | No effect. | Negligible to minor temporary adverse effects (primary emissions would result from the burning of fossil fuels by dredging equipment; emissions will subside upon cessation of operation of heavy equipment). Minor release of greenhouse gas emissions. |
| **Economic Environment and Trends** | No renourishment will result in adverse, moderate, and long-term effects to the natural buffer the beaches provide. This in turn results in an increased probability of structural damages and an increased magnitude of damages. There will also be adverse, moderate, and long-term effects to overall recreational quality and the local economy. | Continues to provide beneficial, moderate, and long-term effects in the mitigation of the probability of structural damages, the mitigation of the magnitude of structural damages, overall recreational quality, and the local economy. |

| | | |
|---|---|---|
| **Environmental Justice** | No effect (this area is not comprised of an EJ community). | Same as Alternative 1. |

## 5.2 PREFERRED ALTERNATIVE

Alternative 2 (Continued Use of the Borrow Area Shoal S) is carried forward as the Preferred Alternative. This alternative best meets the objectives for the Federal project and anticipated need for current and future maintenance and emergency renourishment events. The Preferred Alternative has the greatest economic benefit, maintains the authorized project purposes, and is the most engineeringly sound alternative while remaining environmentally acceptable. The Corps has determined this proposed plan is not contrary to public interest and is carried forward as the Preferred Alternative (see Section 3.1.2 for a detailed description of the Preferred Alternative). Selecting Borrow Area Shoal S and dredging it to depletion supports full future use of the south westernmost portions of the ODMDS. Use of these portions of the ODMDS would potentially alter the sediment composition of Borrow Area Shoal S. Therefore, it is preferrable to use Borrow Area Shoal S before other previously analyzed borrow sources are used.

## 5.3 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

The continued use of Borrow Area Shoal S would result in unavoidable adverse effects to the natural environment (e.g., fish and other wildlife, T&E species, EFH) and the physical environment (e.g., water quality, air quality). The effects are summarized in Table 5-1 and detailed analysis can be found in Section 4.

## 5.4 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. This project would require the burning of fossil fuels to operate heavy equipment (e.g., dredging).

An irretrievable commitment of resources is one in which, due to decisions to manage the resource for another purpose, opportunities to use or enjoy the resource as they presently exist are lost for a period of time. Dredging the borrow area would result in the borrow site sand being removed from the offshore system such that it will not be available for other renourishment projects or to benthic organisms.

## 5.5 CONFLICTS AND CONTROVERSY

Dredging would be done in a manner that would avoid or minimize impacts to resources outside the project limits. Jacksonville Harbor projects do include an ODMDS adjacent to Borrow Area Shoal S (Figure 1-1). The closest point is the northwestern edge of the borrow area, approximately 850 feet east of the ODMDS. The release zone is 500 feet from the east and west boundaries and 1000 feet from the north and south boundaries of the ODMDS. To ensure that ODMDS disposal activities do not adversely impact the borrow area, the ODMDS was segmented into multiple release zones, with fine-grained dredged material to be placed in the western release zones farthest from the borrow area and rock and sand placed in the zones closest to the borrow area. This should prevent fine sediments not suitable for beach placement from settling into the sand borrow area. Also, the Site Management and Monitoring Plan (SMMP; USEPA, 2012) for the ODMDS specifies that the release zone closest to the borrow area cannot be used until after the borrow area has been depleted. Beyond the ODMDS, there is no known conflict or controversy associated with the proposed action. The Corps continually strives to include all interested parties in its decision-making process and will continue to do so as issues arise.

## 5.6 MITIGATION, MONITORING, AND ADAPTIVE MANGEMENT

Mitigation of environmental impacts are addressed in terms of avoidance, minimization, and other actions, such as best management practices, that reduce or offset the negative environmental

impacts. Implementation of the continued use of the borrow area is not expected to result in additional environmental impacts that would require compensatory mitigation.

## 5.7 CUMULATIVE EFFECTS

Cumulative effects can be described as impacts on the environment resulting from the incremental effects of the proposed action when added to other past, present, and reasonably foreseeable future actions (32 CFR § 651.16). Actions by federal, non-federal agencies, and private parties must be considered in the project's NEPA document.

Past, present, and reasonably foreseeable actions and plans include beach nourishment projects, maintenance dredging of navigation channels, and general urbanization. In addition, it is expected that the public, State of Florida, and local governments could pursue activities in or around the project area. While the effects of one action may be insignificant, cumulative effects accumulate over time and can result in the degradation of resources. Federal activities are evaluated under NEPA directly for each project. Other projects that include obstructions or alterations of navigable waters of the United States or the discharge of dredged or fill material in retained waters are evaluated by the Corps' Regulatory Division pursuant to its permitting authority under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act of 1899.

Reasonably foreseeable future actions and plans could include construction and maintenance of the St. John's River jetty and Jacksonville Harbor navigation channel, as well as beneficial use of dredged material and offshore disposal in the Jacksonville ODMDS (Corps, 2012; Corps, 2014). There are active beach renourishment projects in Northeast Florida in Nassau, Duval, St. Johns, and Flagler counties. These projects have separate sufficient sand resources identified, which will not be impacted by the proposed project. Coastal development and urbanization, commercial and recreational fishing, recreational boating, shipping, and homeporting and naval exercises associated with the Naval Station Mayport have historically contributed to and will continue to contribute to onshore and offshore impacts within the project area. Other proposed future actions and plans include Fort George Inlet Continuing Authorities Program Section 111 and the St. Augustine Back Bay Study; however, potential effects of these proposed future actions and plans are speculative and remote currently. Preparation of a separate NEPA document, which would contain detailed analysis of potential effects, will be required during the development of the proposed future projects.

Table 5-2 summarizes the cumulative effects to Benthic Habitat and Communities, Fish and Other Wildlife and EFH, T&E species, water quality, air quality, and Sediment Characteristics in the borrow area resulting from past, present, and reasonably foreseeable future actions in combination with the alternatives. This table illustrates the with-project and without-project condition (the difference being the incremental impact of the project) and the future condition with any reasonable alternatives (or range of alternatives).

**Table 5-2. Summary of cumulative effects within the borrow area.**

| Resource | Past Actions | Present Actions | Alternative 1: No Action Alternative | Alternative 2: Continued Use of Borrow Area Shoal S |
|---|---|---|---|---|
| Benthic Habitat and Communities, Fish and Other Wildlife and EFH | Renourishment and dredging temporarily locally impacted benthic and fish habitat and species, other wildlife (like dolphin), and EFH. Benthic habitat and communities recolonized the borrow areas following dredging during past projects, but individual species recovered at different rates. | Dredging temporarily and locally impact benthic organisms, fish, and other wildlife, and EFH in and around the borrow area, but they are expected to recover between renourishment cycles. Commercial trawling may contribute to benthic disturbance and declines in foraging fish because of reduced prey, bi-catch, and over-fishing. | Commercial trawling may contribute to benthic disturbance and declines in foraging fish because of reduced prey, bi-catch, and overfishing. | Negligible incremental contributions are expected. Locally, sand ridges are diminished or depleted, and productive benthic habitat and fisheries habitat is reduced. Recurrent dredging may have a greater effect on the recovery of benthic populations, but benthic and fish communities should recovery following renourishment, especially if dredging occurs outside recruitment windows. Changes in faunal community structure may persist for more than 3 years but should result in minimal loss of productivity following cessation of dredging. |
| T&E species | Dredging temporarily locally relocated mobile organisms. Construction of inlet jetties increased vessel traffic in vicinity of St. Johns River and led to increased strike of protected whales, manatees, and turtles. | Continued temporary displacement when dredging activities are underway. Unintended strike from vessel traffic from commercial, recreational, and naval vessel traffic. Strike risk minimized with seasonal management and protection measures. | Unintended strike from vessel traffic from commercial, recreational, and naval vessel traffic. Strike risk minimized with seasonal management and protection measures. | Negligible incremental contribution because of limited duration and frequency of dredging operations that displace organisms and implementation of observer and speed restriction requirements. |

| Resource | Past Actions | Present Actions | Alternative 1: No Action Alternative | Alternative 2: Continued Use of Borrow Area Shoal S |
|---|---|---|---|---|
| Water Quality | Reduced water quality in the St. Johns River associated with coastal development, pollutant, and poor land-use practices. Debris and hazardous and nonhazardous waste from recreational, commercial fishery, and naval vessels degraded water quality and contributed to seasonal eutrophication. Turbidity varies under natural conditions, especially during storm events and hurricanes. | Pollution prevention measures help maintain Class III designation. Water quality may continue to deteriorate due to anthropogenic sources of pollution such as stormwater and effluent runoff to nearshore coastal areas. Temporary increase in turbidity with renourishment and maintenance dredging activities, bottom trawling, and offshore dredged material disposal. | Some local, short-term turbidity impacts would be avoided. Natural sedimentation and turbidity rates would continue based upon storm activity, rainfall, currents, and other natural phenomena. Water quality may deteriorate due to unrelated anthropogenic sources, maintenance dredging, and offshore disposal. | Local, short-term impacts of turbidity and sedimentation will occur within and adjacent to offshore borrow area. Preventative measures and monitoring during construction should minimize impact. These impacts have negligible incremental contributions to the regional water quality. |
| Sediment Characteristics | Use of the old borrow area depleted resources in the area such that the sediment characteristics on the surface changed and were not suitable for beach renourishment. | Dredging from the current borrow area has been such that sediment characteristics in the vicinity have not changed. | No impacts would occur to sediment characteristics. | The overall characteristic of sediments exposed on the seafloor by dredging to -58 feet are very similar to the overlaying sediments. The proposed multiple uses of the borrow area considered here will have negligible effects to the local sediment characteristics of the borrow area where the sediment is disturbed below -58 feet depth. This would constitute a negligible incremental contribution to the regional seafloor sediment characteristics. |

| Resource | Past Actions | Present Actions | Alternative 1: No Action Alternative | Alternative 2: Continued Use of Borrow Area Shoal S |
|---|---|---|---|---|
| Air Quality | Estimated emissions were within national ambient air quality standards. | Estimated emissions will be within national ambient air quality standards. Adverse impacts not anticipated. Release of greenhouse gases will occur but will be a minor incremental contribution. | No impacts would occur to air quality. | Estimated emissions will be within national ambient air quality standards. Adverse impacts not anticipated. Release of greenhouse gases will occur but will be a minor incremental contribution. |

# 6 ENVIRONMENTAL COMMITMENTS AND COMPLIANCE

This section documents compliance of the Preferred Alternative with NEPA and its implementing regulations.

## 6.1 ENVIRONMENTAL COMMITMENTS

Continued use of the borrow site will be conducted in accordance with all applicable conditions of 401 Water Quality Certification (WQC), SARBO, and the BOEM lease agreement. The contractor is required to train their personnel in all phases of environmental protection. Prior to the start of construction, the Contractor will submit an Environmental Protection Plan (EPP), which requires the Contractor to describe how they will implement the protective measures in the project specifications. The Corps reviews and approves the EPP to ensure all minimization measures and environmental protections are considered and will be appropriately implemented to comply with applicable laws and regulations. The Corps and its contractors commit to avoiding, minimizing, or mitigating for adverse effects during construction activities. The commitments described in Table 6-1 will be included in the contract's specifications.

**Table 6-1. Corps' environmental commitments.**

| Resource | Corps' Commitment |
|---|---|
| **Fish and Wildlife Resources (other than T&E Species)** | The Contractor will describe in their EPP how they will implement protective measures for species that require specific attention, methods for protection of features (e.g., vegetation, animals, water) to be preserved within authorized work areas, and procedures to be implemented that will provide the required environmental protection to comply with applicable laws and regulations. |
| **T&E Species** | Adverse effects to T&E species will be avoided and/or minimized. Contractor personnel training will include instructing personnel about the potential presence of T&E species and marine mammals, the appropriate protocols if they are encountered, and advisement that there are civil and criminal penalties for harming, harassing, or killing T&E species and marine mammals. Additionally, all onsite personnel are responsible for observing water-related activities for the presence of protected species and proper disposal of marine debris discovered during dredging operations. The Corps will include applicable Terms and Conditions (T&Cs) and PDCs of the SARBO in the project plans and specifications (see SARBO Appendices B, F, G, H, and I). Incidental take of listed species may occur if a hopper dredge and/or capture trawling is used; however, implementation of standard protection conditions, best management practices (BMPs), and SARBO PDCs (especially Appendices H and I) will ensure that the potential adverse effects to these species are reduced to the maximum extent practicable. The Contractor will describe T&E species protection criteria and how it will be implemented during the project in the EPP. |

| | |
|---|---|
| **Water Quality** | Contractor personnel training will include methods of detecting and avoiding pollution, familiarization with pollution standards (both statutory and contractual), and installation and care of facilities to insure adequate and continuous environmental pollution control. The Contractor's quality control and supervisory personnel will be thoroughly trained in the proper use of monitoring devices and abatement equipment and would be thoroughly knowledgeable of Federal, State, and local laws, regulations, and permits as listed in the EPP. Implementation of design and procedural controls will prevent oil, fuel, or other hazardous substances from entering the air or water. All wastes and refuse generated by project construction will be removed and properly disposed. Contractors will implement a spill contingency plan for hazardous, toxic, or petroleum material. Conditions imposed by the BOEM Lease Agreement and WQC will be incorporated into the plans and specifications for implementation to minimize adverse effects to water quality such as turbidity regulatory limits of 0 Nephelometric Turbidity Units (NTU) above background within an Outstanding Florida Water (OFW) and 29 NTU within Class III waters. |
| **Cultural Resources** | The Corps is committed to avoiding impacts to and protecting cultural resources, including adhering to previously established avoidance buffers within the borrow area. All project specifications include a clause for unanticipated discoveries, consistent with 36 CFR 800.13. This clause states that if, during construction activities, items that may have historic or archaeological origin are observed, such observations are to be reported immediately to the Contracting Officer so that the appropriate Corps staff may be notified. Cease all activities adjacent to the discovery that may result in the destruction of these resources and prevent employees from further removing, or otherwise damaging, such resources. Once reported, Corps staff will initiate coordination with the appropriate federal, tribal and state agencies to determine if archaeological investigation is required. Additional work in the area of the discovery will be suspended at the site until all federal and state regulations have been successfully complied with and the Corps staff members provide further directive. Project activities in the vicinity of the discovery may not resume until the Contracting Officer approves work to proceed. |

## 6.2 ENVIRONMENTAL COMPLIANCE

This SEA has been prepared pursuant to NEPA and its implementing regulations. The status of the proposed project's compliance with environmental acts and E.O.s are provided in Table 6-2. The status of environmental compliance is described as follows:

> **Compliant**: Meets all requirements of the statute for the current stage of planning (either pre-authorization or post-authorization).

**In Progress**: Not having met some of the requirements that normally are met in the current stage of planning or pending due notice of availability and comment public/agency comment period.

**Not Applicable**: No requirements for the statute required for planning/ construction.

**Table 6-2. Status of environmental compliance.**

| Reference | Law, Policy, and Regulations | Status |
|---|---|---|
| 42 United States Code (U.S.C.) § 4321 *et seq*. | National Environmental Policy Act of 1969, as amended | Compliant |
| 43 U.S.C. 2101-2106 | The Abandoned Shipwrecks Act, as amended | Compliant |
| 42 U.S.C. §§ 1996 and 1996a | American Indian Religious Freedom Act | Compliant |
| 16 U.S.C. §§ 757A-757G | Anadromous Fish Conservation Act | Compliant |
| 54 U.S.C. 320301-320303 and 18 U.S.C. 1866(b) | Antiquities Act of 1906, as amended | Not Applicable |
| 16 U.S.C. 469-469c | Archaeological and Historic Preservation Act | Compliant |
| 54 U.S.C. § 312501-312508 | Archaeological Resources Protection Act, as amended | Compliant |
| 42 U.S.C. § 7401 *et seq*. | Clean Air Act of 1972 | Compliant |
| 33 U.S.C. § 1341 and 33 U.S.C. § 1344(b) | Clean Water Act of 1972, Section 401 and Section 404(b) | Compliant |
| 16 U.S.C. § 3501 *et seq*. | Coastal Barrier Resources Act and Coastal Barrier Improvement Act of 1990 | Not Applicable |
| 16 U.S.C. § 1451 *et seq*. | Coastal Zone Management Act of 1972 | Compliant |
| 16 U.S.C. § 1531 *et seq*. | Endangered Species Act of 1973 | Compliant |
| 16 U.S.C. §§ 1221-26 | Estuary Protection Act of 1968 | Not Applicable |
| 16 U.S.C. § 460l-12 *et seq*. | Federal Water Project Recreation Act, as amended | Compliant |
| 16 U.S.C. §§ 661-666c | Fish and Wildlife Coordination Act | Compliant |
| 7 U.S.C. § 4201 *et seq*. | Farmland Protection Policy Act | Not Applicable |
| 16 U.S.C. § 1801 *et seq*. | Magnuson-Stevens Fishery Conservation and Management Act of 1976, as amended | Compliant |
| 16 U.S.C. § 1361 *et seq*. | Marine Mammal Protection Act of 1972, as amended | Compliant |
| 33 U.S.C. § 1401 *et seq*. | Marine Protection, Research, and Sanctuaries Act | Not Applicable |

| Reference | Law, Policy, and Regulations | Status |
|---|---|---|
| 16 U.S.C. §§ 703-712, 715 | Migratory Bird Treaty Act and Migratory Bird Conservation Act | Compliant |
| 54 U.S.C. § 300101 *et seq.* | National Historic Preservation Act of 1966, as amended | Compliant |
| 25 U.S.C. § 3001 *et seq.* | Native American Graves Repatriation Act | Compliant |
| 33 U.S.C. § 403 | Rivers and Harbors Act of 1899, Section 10 | Compliant |
| 43 U.S.C. § 1301 *et seq*. | Submerged Lands Act of 1953 | Compliant |
| 42 U.S.C. § 4601 *et seq*. | Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 | Not Applicable |
| 16 U.S.C. § 1271 *et seq*. | Wild and Scenic River Act of 1968 | Not Applicable |
| E.O. 11593 | Protection and Enhancement of the Cultural Environment | Compliant |
| E.O. 11988 | Floodplain Management | Compliant |
| E.O. 13007 | Indian Sacred Sites | Not Applicable |
| E.O. 11990 | Protection of Wetlands | Not Applicable |
| E.O. 12898 | Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations | Compliant |
| E.O. 13045 | Protection of Children from Environmental Health Risks and Safety Risks | Compliant |
| E.O. 13089 | Coral Reef Protection | Not Applicable |
| E.O. 13112 | Invasive Species | Compliant |
| E.O. 13175 | Consultation and Coordination with Indian Tribal Governments | Compliant |
| E.O. 13186 | Responsibilities of Federal Agencies to Protect Migratory Birds | Compliant |
| Memorandum | Memorandum on Government-to-Government Regulations with Native American Tribal Governments | Compliant |

### 6.2.1 NATIONAL ENVIRONMENTAL POLICY ACT OF 1969, AS AMENDED

This Act requires the opportunity for public participation and comment on Federal projects, and requires agencies to cooperate with other Federal agencies, State, and local governments, and to involve public stakeholders. Environmental information on the project has been compiled and this SEA and Finding of No Significant Impact (FONSI) have been prepared and coordinated for public, state, and Federal agency review. The project is in compliance with NEPA.

### 6.2.2 ABANDONED SHIPWRECK ACT

The Abandoned Shipwreck Act (ASA) of 1987 establishes government ownership over the majority of abandoned shipwrecks located in waters of the United States of America and creates

a framework within which shipwrecks are managed. There are no known shipwrecks within the project area for the preferred alternative; therefore, the project is in compliance with this Act.

### 6.2.3 AMERICAN INDIAN RELIGIOUS FREEDOM ACT OF 1978

The Act requires policies of all governmental agencies to accommodate access to, and use of, Native American religious sites to the extent that the use is practicable and is consistent with an agency's essential missions. The project does not inhibit access to, and use of, Native American religious sites. The project is in compliance with this Act.

### 6.2.4 ANADROMOUS FISH CONSERVATION ACT

The Anadromous Fish Conservation Act requires a commitment to the conservation, development, and enhancement of anadromous fishery resources. Atlantic and shortnose sturgeon may be present in the borrow area during dredging activities; however, the project will adhere to applicable PDCs of the SARBO to minimize any interactions or potential take. The project is in compliance with the Act.

### 6.2.5 ANTIQUITIES ACT OF 1906

This Act applies to activities taking place within the boundaries of a national monument. The proposed action does not take place within the boundaries of a national monument. Therefore, this Act is not applicable to this action.

### 6.2.6 ARCHAEOLOGICAL AND HISTORIC PRESERVATION ACT

This Act requires that Federal agencies provide for "...the preservation of historical and archeological data (including relics and specimens) which might otherwise be irreparably lost or destroyed as the result of...any alteration of the terrain caused as a result of any Federal construction project of federally licensed activity or program". The Corps has determined that this Project will have no effect to historical or archaeological data. The Florida SHPO has concurred with this determination. Therefore, the project is in compliance with this Act.

### 6.2.7 ARCHAEOLOGICAL RESOURCES PROTECTION ACT

This Act applies to federally owned and tribally owned lands, including Reservation lands. The Preferred Alternative does not anticipate the need to excavate or in any way disturb potentially significant cultural resources existing on federal lands. Any seabed disturbances will take place within Holocene sediments and will not disturb paleo-landforms of tribal interest. The project is in compliance with the Act.

### 6.2.8 CLEAN AIR ACT OF 1972

The Clean Air Act (CAA) requires Federal actions to conform to an approved state implementation plan designed to achieve or maintain an attainment designation for air pollutants as defined by the NAAQS. The NAAQS were designed to protect public health and welfare. The criteria pollutants include carbon monoxide (CO), ozone ($O_3$), nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), particulate matter ($PM_{2.5}$ and $PM_{10}$), and lead (Pb).

The existing air quality within Duval County, Florida meets the NAAQS. Therefore, the project is exempt from the CAA conformity requirements because it is located in a federal attainment area (40 CFR § 81.310; Rule 62-204.340, F.A.C.). No Federal permits are required. The State of Florida does not regulate emissions from off-road equipment or marine vessels; however, it can be assumed that insignificant emissions will be produced by the dredge and construction equipment during construction activities. The Preferred Alternative will not cause or contribute to violations of the NAAQS. The project complies with this Act.

### 6.2.9 CLEAN WATER ACT, SECTION 401 AND SECTION 404(B)(1)

A Section 401 water quality certification was obtained by the City of Jacksonville from the State of Florida (FDEP) on September 18, 2015 (Permit No. 0228528-005-JC). All state water quality requirements will be met, and the Corps will ensure that turbidity standards in Outstanding Florida Waters (OFWs) adjacent to the project area are met. A Section 404(b)(1) Guidelines Evaluation is included in this report as Appendix C to address continued use of the borrow area. The project is in compliance with this Act.

### 6.2.10 COASTAL BARRIER RESOURCES ACT AND COASTAL BARRIER IMPROVEMENT ACT OF 1990

The Coastal Barrier Resources Act (CBRA) and the Coastal Barrier Improvement Act limit federally-subsidized development within the CBRA Units to limit the loss of human life by discouraging development in high-risk areas, to reduce wasteful expenditures of Federal resources, and to protect the natural resources associated with coastal barriers. CBRA provides development goals for undeveloped coastal property held in public ownership, including wildlife refuges, parks, and other lands set aside for conservation ("otherwise protected areas," or OPAs). These public lands are excluded from most of the CBRA restrictions, although they are prohibited from receiving federal flood insurance for new structures.

The official U.S. Fish and Wildlife Service (USFWS) Coastal Barrier Resources System (CBRS) maps were reviewed (https://www.fws.gov/CBRA/Maps/Mapper.html). The closest CBRS unit is Talbot Islands, which is located north of the project footprint across the St. Johns River (Figure 6-1). No work associated with the Preferred Alternative occurs within or will affect CBRS units; therefore, these Acts are not applicable.

### 6.2.11 COASTAL ZONE MANAGEMENT ACT OF 1972

The goal of the Coastal Zone Management Act (CZMA) is to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone". The CZMA requires that Federal actions that are reasonably likely to affect any land or water use or natural resource of the coastal zone be consistent with enforceable policies of a State's federally-approved coastal management program.

Pursuant to Subpart D of the implementing regulations for the CZMA (15 CFR 930), the City of Jacksonville obtained a consistency concurrence from the DEP, dated April 18, 2005, indicating the Duval County SPP was consistent with Florida's Coastal Management Program (No. 0228528-001-JC). The Corps determined that continued use of the borrow area remains consistent with the State of Florida's enforceable policies of the Florida Coastal Management Program and a new consistency determination is not required. The Corps provided the draft SEA to the Florida State Clearinghouse during the NEPA public review period. In an email dated August 24, 2023, the Florida State Clearinghouse stated that "a permit was obtained by the City

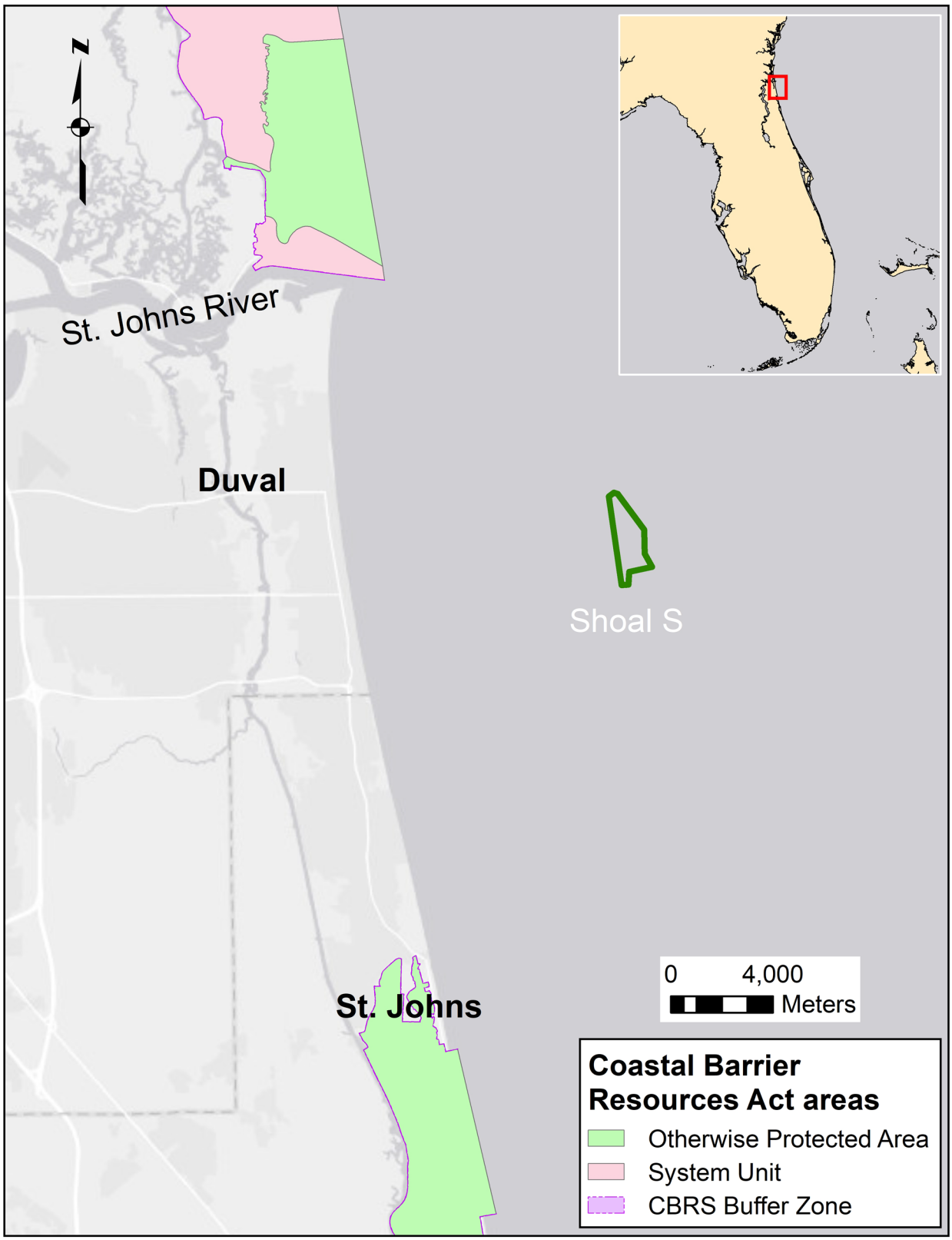


**Figure 6-1. Location of CBRS Unit Talbot Islands (north) and Guana River (south) in the vicinity of Duval County SPP. SOURCE: https://www.fws.gov/CBRA/Maps/Mapper.html (modified in ArcGIS).**

of Jacksonville from the FDEP on September 18, 2015 (Permit No. 0228528-005-JC) for this sand source and project. Therefore, Coastal Zone concurrency has been issued until 2030." The project complies with this Act.

### 6.2.12 ENDANGERED SPECIES ACT OF 1973

Pursuant to Section 7 of the Endangered Species Act of 1973, as amended, (ESA) the Corps has determined the project meets eligibility criteria for coverage by the NMFS' South Atlantic Regional Biological Opinion for Dredging and Material Placement Activities in the Southeast United States (SARBO). The project will be conducted in accordance with the ESA, as amended, and specifically in compliance with NMFS' 2020 SARBO. The dredging of the borrow area has been evaluated under the ESA through previous NEPA documents (described in Section 1.4.2). A discussion on the existing conditions and potential effects to T&E species are included in Sections 2.3.1 and 4.2.1, respectively. The Corps' effect determinations are included in Table 4-1 of Section 4.2.1.

**Effect determinations for species under NMFS jurisdiction:**

For potential effects to federally listed T&E species under the NMFS jurisdiction, the project meets the eligibility criteria to be covered by the SARBO. The SARBO covers dredging (e.g., maintenance, advance maintenance, minor channel modifications, borrow area dredging, and muck dredging), transportation of dredged material, dredged material placement, geotechnical and geophysical surveys, and species handling in the southeast U.S., specifically from North Carolina/Virginia border through and including Key West, Florida and the islands of Puerto Rico and the U.S. Virgin Islands. The following types of dredges and dredging methods are covered by the SARBO: mechanical (e.g., clamshell and backhoe), hydraulic (e.g., cutterhead suction/pipeline dredging and hopper), side-cast/split hull, and agitation (e.g., bed leveling, water injection dredging) as well as dredging pipelines and support vessels. The SARBO also covers ESA-listed species handling, and aerial surveys. The project will adhere to applicable SARBO PDCs (as described in Section 6.1). The project complies with this Act.

### 6.2.13 ESTUARY PROTECTION ACT OF 1968

The Estuary Protection Act requires Federal agencies to consider estuaries and their natural resources when planning for the development of water and land resources. No estuaries of national significance exist in the project area; therefore, the Act is not applicable.

### 6.2.14 FEDERAL WATER PROJECT RECREATION ACT, AS AMENDED

This Act requires full consideration of recreation and fish and wildlife enhancement in Federal water development projects. Recreational opportunities as well as the effects of the Preferred Alternative on outdoor recreation have been described in Sections 2.5 and 4.4. The project complies with this Act.

### 6.2.15 FISH AND WILDLIFE COORDINATION ACT

The central objective of the Fish and Wildlife Coordination Act (FWCA) is to allow for equal consideration of wildlife resources. A Coordination Act Report was not required for completion of the project, and use of the borrow area has been previously coordinated with USFWS. The Preferred Alternative has been coordinated with USFWS through the NEPA review process. The project is in compliance with this Act.

### 6.2.16 FARMLAND PROTECTION POLICY ACT

The Farmland Protection Policy Act is intended to minimize the impact of the conversion of farmland to nonagricultural uses. No farmland exists in the project area; therefore, the Act is not applicable.

### 6.2.17 MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT OF 1976, AS AMENDED

The MSFCMA reflects the Secretary of Commerce and Fishery Management Council authority and responsibilities for the protection of EFH. Federal agencies that fund, permit, or carry out activities that may adversely affect EFH are required to consult with the NMFS HCD regarding the potential effects of their actions on EFH. Per the January 22, 2019, and October 2, 2018, EFH Findings between NMFS' Southeast Regional Office and SAD, U.S. Army Corps of Engineers and Jacksonville District, respectively, the EFH Assessment for the project is integrated within this SEA. The Corps initiated consultation with NMFS for the Preferred Alternative during the draft SEA's public comment period. The Corps has determined that continued use of the borrow area would have minimal adverse short-term effects on EFH and no adverse effects on federally managed fisheries along the northeast coast of Florida. NMFS's response was received July 16, 2023, with no EFH recommendations (Appendix A). The Corps is complying with the Act through the NEPA review and EFH consultation processes.

### 6.2.18 MARINE MAMMAL PROTECTION ACT OF 1972, AS AMENDED

The Marine Mammal Protection Act prohibits harassing, feeding, hunting, capturing, and/or killing (referred to as "take") and importing of marine mammals and marine mammal products. The project area is accessible to marine mammals, such as the Florida manatee and whales. Noise associated with dredging and vessel strikes in transit areas are known to cause impacts. Incorporation of the USFWS 2011 Standard Manatee Conditions for In-water Work, best management practices (BMPs), as well as applicable terms and conditions (T&Cs) and PDCs of the SARBO into the projects' plans and specifications will ensure that the potential adverse effects to these species are reduced to the maximum extent practicable. Implementation of the safeguards used to protect T&E species during construction and operation would extend protections to marine mammals within the area. No take of marine mammals is anticipated. The project is in compliance with the goals of this Act and will be in full compliance with the Act at the time of construction through implementation of referenced safeguards.

### 6.2.19 MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT

The Marine Protection, Research, and Sanctuaries Act regulates the placement of dredged material into the ODMDS. Ocean disposal of dredge material is not proposed as part of the Preferred Alternative; therefore, the Act is not applicable.

### 6.2.20 MIGRATORY BIRD TREATY ACT AND MIGRATORY BIRD CONSERVATION ACT

These Acts prohibit the take (e.g., killing, capturing, selling, or trading) and/or transporting of protected migratory bird species without prior authorization by USFWS. Migratory and resident bird species have been observed within the study area and are likely to use available habitat for foraging, nesting, and breeding. The Preferred Alternative is not expected to destroy migratory birds, their active nests, their eggs, or their hatchlings. The Preferred Alternative will not pursue, hunt, take, capture, kill or sell migratory birds. The Preferred Alternative is in compliance with these Acts.

### 6.2.21 NATIONAL HISTORIC PRESERVATION ACT OF 1966, AS AMENDED

Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 CFR Part 800, provides a regulatory framework for the identification, documentation, and evaluation of historic and cultural resources that may be affected by Federal undertakings. Formal consultation on potential effects to cultural resources has occurred with the Florida SHPO, the Seminole Tribe of Florida (STOF), the Miccosukee Tribe of Indians of Florida (MTIF), Thlopthlocco Tribal Town (TTT), and the Seminole Nation of Oklahoma (SNO). The Corps has determined that the Preferred Alternative will have no adverse effect on historic properties eligible or potentially eligible for listing in the National Register of Historic Places (NRHP) contingent upon the maintenance of three avoidance buffers within the borrow area. The Florida SHPO concurred with this determination by letter dated April 1, 2016 (DHR Project File No.: 2016-1371; see Appendix A). The Preferred Alternative is in compliance with Section 106 of the NHPA, as amended (PL 89-665).

### 6.2.22 NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT

This Act applies to federally owned and tribally owned lands, including Reservation lands. The Preferred Alternative proposes impacts to federally owned lands; however, archaeological surveys of those lands do not indicate the presence of Native American graves or other burial resources. Therefore, the Preferred Alternative is in compliance with this Act.

### 6.2.23 RIVERS AND HARBORS ACT OF 1899

Section 10 of the Rivers and Harbors Act of 1899 prohibits obstruction to navigation of the waterway, unless recommended by the Chief of Engineers and authorized by the Secretary of the Army. The Preferred Alternative would not obstruct navigable waters of the United States; therefore, the project is in compliance with this Act.

### 6.2.24 SUBMERGED LANDS ACT OF 1953

According to the Submerged Lands Act, the state holds ownership to submerged lands within three nautical miles of the coastline. The borrow area is located within Federal waters; therefore, dredging would not occur on submerged lands of the State of Florida. The Preferred Alternative has been coordinated with the State through the NEPA review process. The project is in compliance with this Act.

### 6.2.25 UNIFORM RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION POLICIES ACT OF 1970

The purpose of this Act is to ensure that owners of real property to be acquired for Federal and Federally assisted projects area are treated fairly and consistently, and that persons displaced as a result of such acquisition will not suffer disproportionate injuries as a result of projects designed for the benefit of the public as a whole. This Act is not applicable as this project will not be acquiring any real estate interests from private property owners.

### 6.2.26 WILD AND SCENIC RIVER ACT OF 1968

This Act requires that selected wild and scenic rivers be preserved in free-flowing condition with the immediate environment and are protected for the benefit and enjoyment of future generations. There are no designated wild and scenic rivers located within the project area. This Act is not applicable.

### 6.2.27 EXECUTIVE ORDER (E.O.) 11593, PROTECTION AND ENHANCEMENT OF THE CULTURAL ENVIRONMENT

This Act applies to federally and non-federally owned sites, structures, and objects of historical, architectural, or archaeological significance. The project does not impact sites, structures, and objects of known historical, architectural, or archaeological significance. The project complies with this Order.

### 6.2.28 E.O. 11988, FLOODPLAIN MANAGEMENT

E.O. 11988 directs Federal agencies to avoid siting projects in floodplains and to avoid inducing further development of flood-prone areas. To comply with E.O. 11988, the policy of the Corps is to formulate projects that, to the extent possible, avoid or minimize adverse effects associated with the use of the floodplain and avoid inducing development in the floodplain unless there is no practicable alternative.

Per guidance provided in E.O. 11988, the following factors were evaluated:

1. *Determine if a proposed action is in the base floodplain (defined by E.O. 11988 as an "area which has a one percent or greater chance of flooding in any given year").* The borrow area occurs within submerged lands.
2. *Conduct early public review, including public notice.* Public and agency coordination is described in Section 6.3. This SEA was coordinated with interested stakeholders and the public via the NEPA process.
3. *Identify and evaluate practicable alternatives to locating in the base floodplain, including alternative sites outside of the floodplain.* The Preferred Alternative occurs on submerged lands and does not occur within a floodplain.
4. *Identify impacts of the proposed action.* Because the Preferred Alternative occurs on submerged lands and does not occur within a floodplain, no impacts to the floodplain are expected.
5. *Minimize threats to life and property and to natural and beneficial floodplain values. Restore and preserve natural and beneficial floodplain values.* Because the Preferred Alternative occurs on submerged lands and does not occur within a floodplain, no impacts to the floodplain are expected. More details on the project's purpose and need are included in Section 1.5. Details on the environmental commitments are included in Section 6.
6. *Reevaluate alternatives.* Alternatives are described in Section 3. The Preferred Alternative, described in detail in Section 3.1.2, best meets the purpose and need.
7. *Issue findings and a public explanation.* The SEA describes the Preferred Alternative in Section 3.1.2. Public and agency coordination is described in Section 6.3.
8. *Implement the action.* Construction will occur after all appropriate documentation (e.g., agreements, permitting, etc.) is completed and funds are received.

The Corps concludes that the Preferred Alternative will not result in harm to people, property, and floodplain values; will not induce development in the floodplain; and that the project is in the public interest. For the reasons stated above, the project complies with this E.O.

### 6.2.29 E.O. 13007, INDIAN SACRED SITES

This E.O. applies to Indian sacred sites. The project does not involve Indian sacred sites. Therefore, this E.O. is not applicable.

### 6.2.30 E.O. 11990, PROTECTION OF WETLANDS

The objective of this E.O. is to avoid long and short-term adverse impacts associated with the destruction of modification of wetlands. Wetlands are not located within the proposed project footprint. This E.O. is not applicable.

### 6.2.31 E.O. 12898, FEDERAL ACTIONS TO ADDRESS ENVIRONMENTAL JUSTICE IN MINORITY POPULATIONS AND LOW-INCOME POPULATIONS

On February 11, 1994, the President of the U.S. issued E.O. 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. This E.O. mandates that each Federal agency make achieving EJ part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of programs and policies on minority populations and low-income populations. The Corps evaluated the Preferred Alternative in accordance with CEQ's Environmental Justice Guidance under the NEPA, dated December 10, 1997, and E.O. 12898. The Corps determines if a proposed action or its alternatives would result in significant effects related to EJ if the proposed action or an alternative would disproportionately adversely affect an EJ community through its effects on environmental, social, and economic conditions.

The Corps determined that the project would not result in adverse human health or long-term environmental effects. The project would not disproportionately adversely affect any minority population or low-income population. The proposed activity would not (a) exclude persons from participation in, (b) deny persons the benefits of, or (c) subject persons to discrimination because of their race, color, or national origin, nor would the proposed action adversely impact "subsistence consumption of fish and wildlife." Detailed analysis on EJ can be found in Section 2.5.1, and the Preferred Alternative's effects can be found in Section 4.4.1. The project is in compliance with this E.O.

### 6.2.32 E.O. 13045, PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH AND SAFETY RISKS

E.O. 13045 requires each Federal agency to "make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children" and "ensure that its policies, programs, activities, and standards address disproportionate risks to children that results from environmental health risks or safety risks." The Preferred Alternative occurs on submerged lands in the ocean. This E.O. is not applicable.

### 6.2.33 E.O. 13089, CORAL REEF PROTECTION

The objective of E.O. 13089 is to preserve and protect the biodiversity, health, heritage, social and economic value of U.S. coral reef ecosystems and the marine environment. This E.O. directs Federal Agencies to expand their research, preservation, monitoring and restoration efforts with respect to actions that affect coral reef ecosystems. No coral reefs would be impacted by the Proposed Action. This E.O. does not apply.

### 6.2.34 E.O. 13112, INVASIVE SPECIES

E.O. 13122 is aimed to prevent the introduction of invasive species and requires that Federal Agencies provide for their control and minimize the economic, ecological and human health impacts that invasive species can cause. The Preferred Alternative would have no significant impact on invasive species. The project's plans and specifications will include conditions to avoid the introduction and/or promotion of non-native species to the region. Conditions will include thoroughly cleaning all equipment prior to the start of work and reporting all sightings of invasive and nuisance species (not identified in pre-construction conditions) within 24-hours. The Corps will require the Contractor to abide by those requirements as well as submit a plan describing the protection measures (e.g., transfer prevention procedures, designated cleaning sites/locations, etc.) to be implemented by the Contractor. The project is in compliance with the goals of this E.O.

### 6.2.35 E.O. 13175, CONSULTATION AND COORDINATION WITH INDIAN TRIBAL GOVERNMENTS

E.O. 13175 sets forth fundamental principles to guide agencies in formulating and implementing policies that have tribal implications. Members and representatives of the Seminole Tribe of Florida, the Miccosukee Tribe of Indians of Florida, the Seminole Nation of Oklahoma, the Thlopthlocco Tribal Town, and the Muscogee Creek Nation were notified of this action during release of the draft NEPA document (pertinent correspondence can be found in Appendix A). Pursuant to E.O. 13175, U.S. Army Corps of Engineers, Headquarters developed the November 1, 2012, Tribal Policy Memorandum, which dictates Federal responsibilities, including Trust Responsibilities, to Federally recognized Tribes. The Corps will continue to coordinate as required by the E.O. and as specified by the November 1, 2012, Tribal Policy Memorandum. The project is in compliance with this E.O.

### 6.2.36 E.O. 13186, RESPONSIBILITIES OF FEDERAL AGENCIES TO PROTECT MIGRATORY BIRDS

E.O. 13186 requires Federal agencies taking actions which have or are likely to have a measurable negative effect on migratory bird populations to take certain actions which promote the conservation of migratory bird populations. Migratory and resident bird species have been observed within the study area and are likely to use available habitat for foraging, nesting, breeding, and transit. The Preferred Alternative is not expected to destroy migratory birds, their active nests, their eggs, or their hatchlings. The Corps will include applicable standard migratory bird protection requirements in the project plans and specifications and will require the contractor to abide by those requirements. The project is in compliance with the goals of this E.O.

### 6.2.37 MEMORANDUM ON GOVERNMENT-TO-GOVERNMENT REGULATIONS WITH NATIVE AMERICAN TRIBAL GOVERNMENTS

Memorandum signed by President Clinton April 29, 1994 directs the heads of executive departments and agencies to operate within a government-to-government relationship with federally recognized tribal governments; consult, to the greatest extent practicable and to the extent permitted by law, with tribal governments prior to taking actions that affect federally recognized tribal governments; assess the impact of Federal Government plans, projects, programs, and activities on tribal trust resources and assure that tribal government rights and concerns are considered during the development of such plans, projects, programs, and activities; take appropriate steps to remove any procedural impediments to working directly and effectively with tribal governments on activities that affect the trust property and/or governmental rights of the tribes; and work cooperatively with other Federal departments and agencies to enlist their interest and support in cooperative efforts, where appropriate, to accomplish the goals of this

memorandum. The project does not affect federally recognized tribal governments or tribal trust resources. The project is in compliance with this E.O.

## 6.3 PUBLIC AND AGENCY COORDINATION

The following describes public involvement during development of the SEA.

### 6.3.1 AGENCY AND STAKEHOLDER COORDINATION

A Notice of Availability was provided to pertinent Tribal Nations, Federal, state, and local agencies, and other interested stakeholders to notify them of the start of the 30-day review and comment period for the proposed FONSI, draft SEA, and associated appendices. The documents can be downloaded from the Corp's environmental website:
https://www.saj.usace.army.mil/About/Divisions-Offices/Planning/Environmental-Branch/Environmental-Documents/
(Click "Duval" and scroll down to the project name.)

### 6.3.2 PUBLIC COMMENTS RECEIVED AND RESPONSES

A copy of all comments received during the public and agency review and comment period, as well as a summary matrix of the comments and Corps' responses to substantive comments, are included in the final NEPA document's Appendix B. Comments received were in support of the project.

# 7 PREPARERS

**Table 7-1. List of preparers and reviewers.**

| Name and Title | Organization | Discipline/Expertise |
|---|---|---|
| David Weinstein,<br>Coastal NEPA Biologist | Corps | NEPA |
| Kristen Donofrio,<br>Coastal NEPA Lead Biologist | Corps | NEPA |
| Trisston Brown,<br>Coastal NEPA Section Chief | Corps | NEPA |
| Brian Seymour,<br>Archeologist | Corps | Cultural Resources and Tribal Nations |
| Christopher Altes,<br>Lead Archeologist | Corps | Cultural Resources and Tribal Nations |
| Meredith Moreno,<br>Cultural Resources Chief,<br>Environmental Branch Deputy | Corps | Cultural Resources and Tribal Nations |
| Jackson Hooten,<br>Water Quality Specialist | Corps | Water Quality |
| Aaron Lassiter,<br>Lead Environmental Compliance and Section 103 Specialist | Corps | Water Quality / Environmental Compliance |
| Michael Hollingsworth,<br>Lead Water Quality Specialist | Corps | Water Quality |
| Jason Spinning,<br>Water Quality and Environmental Compliance Section Chief | Corps | Water Quality / Environmental Compliance |
| Kenneth Kau,<br>Economist | Corps | Economics / Environmental Justice |
| Barbara Nist, P.G.,<br>Geologist | Corps | Geotechnical |
| Jason Harrah,<br>Project Manager | Corps | Project Management |
| Gretchen Ehlinger,<br>Environmental Branch Chief | Corps | NEPA |
| Jennifer Bucatari,<br>Oceanographer | BOEM | NEPA, Air Quality, Biology |

# 8 ACRONYM LIST

| Acronym | Definition |
|---|---|
| ASA | Assistant Secretary of the Army |
| ASA | Abandoned Shipwreck Act |
| ASA(CW) | Assistant Secretary of the Army for Civil Works |
| BMP | Best Management Practices |
| BOEM | Bureau of Ocean Energy Management |
| CAA | Clean Air Act |
| CBRA | Coastal Barrier Resources Act |
| CBRS | Coastal Barrier Resource System |
| CEQ | Council on Environmental Quality |
| CFR | Code of Federal Regulations |
| Corps | U.S. Army Corps of Engineers, Jacksonville District |
| CWA | Clean Water Act |
| CY | Cubic Yards |
| CZMA | Coastal Zone Management Act |
| DCH | Designated Critical Habitat |
| DHR | Division of Historical Resources |
| DPEC | Dredging Project Emissions Calculator |
| EA | Environmental Assessment |
| EFH | Essential Fish Habitat |
| EIS | Environmental Impact Statement |
| EJ | Environmental Justice |
| EM | Engineering Manual |
| EO | Executive Order |
| EPP | Environmental Protection Plan |
| ESA | Endangered Species Act |
| FAC | Florida Administrative Code |
| FCCE | Flood Control and Coastal Emergencies |
| FDEP | Florida Department of Environmental Protection |
| FR | Federal Register |
| FWCA | Fish and Wildlife Coordination Act |
| FONSI | Finding of No Significant Impact |
| FUDS | Formally Used Defense Site |
| GDP | Gross Domestic Product |
| HAPC | Habitat Areas of Particular Concern |
| HCD | Habitat Conservation Division |
| HTRW | Hazardous, Toxic, and Radioactive Waste |
| MANLAA | May Affect, Not Likely to Adversely Affect |
| MCY | Million Cubic Yards |
| MEC | Munitions of Explosive Concern |
| MLW | Mean Low Water |
| MLLW | Mean Lower Low Water |
| MMRP | Military Munition Response Program |
| MMS | Minerals Management Service |

| | |
|---|---|
| MSFCMA | Magnuson-Stevens Fishery Conservation and Management Act |
| MTIF | Miccosukee Tribe of Indians of Florida |
| NAAQS | National Ambient Air Quality Standard |
| NAVD88 | North American Vertical Datum of 1988 |
| NE | No Effect |
| NFS | Non-federal Sponsor |
| NEPA | National Environmental Policy Act |
| NHPA | National Historic Preservation Act |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Administration |
| NRHP | National Register of Historic Places |
| NTU | Nephelometric Turbidity Unit |
| O&M | Operations and Maintenance |
| OCS | Outer Continental Shelf |
| OCSLA | Outer Continental Shelf Lands Act |
| ODMDS | Ocean Dredged Material Disposal Site |
| OFW | Outstanding Florida Waters |
| OPA | Otherwise Protected Area |
| PA | Probability Assessment |
| PDC | Project Design Criteria |
| PL | Public Law |
| PM | Particulate Matter |
| $PM_{10}$ | Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns |
| $PM_{2.5}$ | Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 microns |
| SAFMC | South Atlantic Fish Management Council |
| SAD | U.S. Army Corps of Engineers, South Atlantic Division |
| SARBO | South Atlantic Regional Biological Opinion for Dredging and Material Placement Activities in the Southeast United States |
| SEA | Supplemental Environmental Assessment |
| SHPO | State Historic Preservation Office |
| SIP | State Implementation Plan |
| SMMP | Site Management and Monitoring Plan |
| SNO | Seminole Nation of Oklahoma |
| SPP | Shore Protection Project |
| STF | Seminole Tribe of Florida |
| T&C | Terms and Conditions |
| T&E | Threatened and Endangered |
| TTT | Thlopthlocco Tribal Town |
| USC | United States Code |
| USEPA | U.S. Environmental Protection Agency |
| USFWS | U.S. Fish and Wildlife Service |
| UXO | Unexploded Ordnances |
| WRDA | Water Resources Development Act |
| WQC | Water Quality Certification |

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