

MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Environmental Assessment and Statement of Findings for the Above-Referenced Standard Individual Permit Application

This document constitutes the Environmental Assessment, 404(b)(1) Guidelines Evaluation, as applicable, Public Interest Review, and Statement of Findings for the subject application.

1.0 Introduction and Overview: Information about the proposal subject to one or more of the Corps' regulatory authorities is provided in Section 1, detailed evaluation of the activity is found in Sections 2 through 11 and findings are documented in Section 12 of this memorandum. Further, summary information about the activity including administrative history of actions taken during project evaluation is attached (ORM2 Summary) and incorporated in this memorandum.

1.1 Applicant: Dare County
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1.2 Activity location: Oregon Inlet encompasses the waters between the southern tip of Bodie Island and the northern tip of Pea Island including the ocean bar extending offshore and the connecting channels and waters on the Pamlico Sound side of the recently-opened Marc Basnight Bridge (Figure 1.1). The inlet connects the northern end of Pamlico Sound to the Mid-Atlantic Bight region of the Atlantic Ocean. Oregon Inlet is approximately 1.5 miles along its axis and 0.6 miles wide. Oregon Inlet is situated within Cape Hatteras National Seashore (Seashore), which is administered as a unit of the National Park System (16 U.S.C. § 459a-1). The Seashore also includes the submerged lands within Oregon Inlet. The southern end of Bodie Island, including the Oregon Inlet campground and the Oregon Inlet Marina and Fishing Center, is primarily used for recreational and charter boat fishing. The southern shoulder of the inlet is home to the Pea Island National Wildlife Refuge (Refuge). The Refuge lies within the boundaries of the Seashore and is administered by the U.S. Fish and Wildlife Service (USFWS). The Refuge consists primarily of barrier island beach, dunes, and coastal wetlands. A former U.S. Coast Guard Station building is at the northern end of Hatteras Island. The Station is listed on the National Register of Historic Places (NRHP).



Figure 1.1 Location Map

- 1.3 Description of activity requiring permit: Dare County is proposing to utilize a yet-to-be-constructed, privately-owned hopper dredge in the same manner and under the same conditions as what is currently authorized for the U.S. Army Corps of Engineers Wilmington District (Corps) to perform maintenance dredging of small and/or isolated, regularly occurring shoals within Oregon Inlet and its connecting channels as defined in the Corps' 2004 Finding of No Significant Impact entitled "*Use of Government Plant to Dredge in Federally Authorized Navigation Projects in North Carolina*" (2004 FONSI). The maintenance dredging conducted by the privately-owned dredge would not replace dredging performed by the Corps' dredge fleet; rather it would complement the Corps' existing efforts.

The dredging dimensions of the federal project under consideration in this action are: 1) a 14-foot deep by 400-foot wide channel through Oregon Inlet and the ocean bar, 2) an approximate 16,050-foot long portion of the channel from Oregon Inlet to Hell's Gate (12-foot deep by 100-foot wide), and 3) an approximate 2,850-foot long portion of Old House Channel (12-foot deep by 100-foot wide). The 2004 FONSI allows for the maintenance dredging to follow "best water;" therefore, the footprints of the areas to be dredged are not fixed. A "dredging corridor" has been developed and will serve as the domain in which dredging could be performed under this permit (Figure 1.2). Bathymetric surveying will be performed prior to each dredge event in an effort to determine the location of the best water for the channel.

The disposal sites for material dredged under this authorization would be the same as what is currently authorized by the Corps. These areas include, a) nearshore disposal in the ocean off the north end of Pea Island, and b) within deep scour holes beneath the Herbert C. Bonner Bridge (Bonner Bridge). The majority of the existing bridge will be demolished in the near future and the remaining 1,000 feet of bridge connected to Pea Island will be repurposed as a public access fishing pier. The disposal of material for this proposed action will also include areas of scour surrounding the remaining bridge pilings. No other disposal areas are authorized under this action.

The Applicant is seeking authorization to perform maintenance dredging on a year-round basis utilizing the privately-owned dredge. Pursuant to the 2004 FONSI, the new dredge will be constructed to the specifications that were developed by the Corps to reduce the potential impacts to threatened and endangered species.

It is anticipated that the volume of material that will be dredged from the Oregon Inlet bar, as well as the connecting channels, will average between 900,000 and 1,000,000 cubic yards annually.

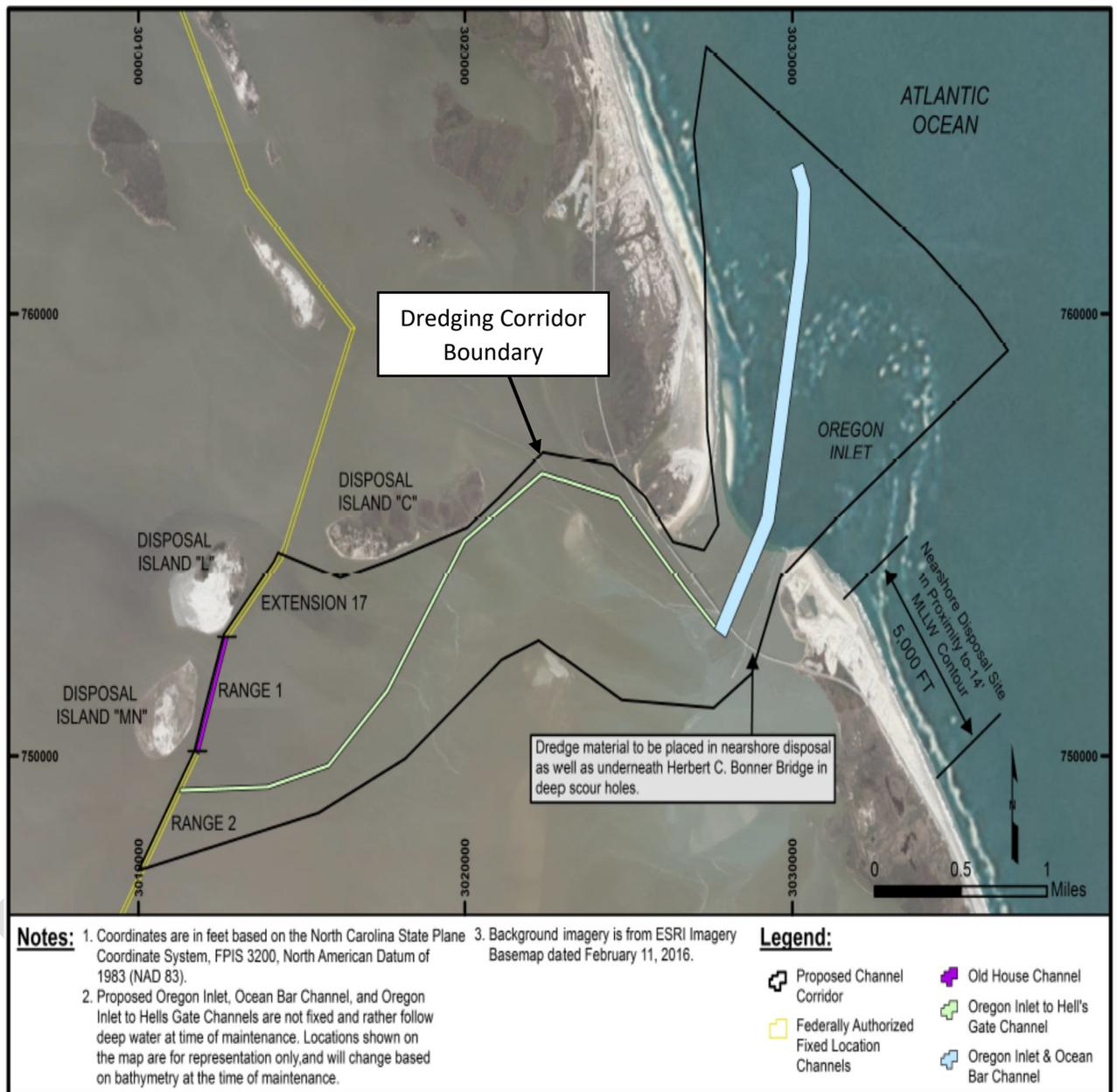


Figure 1.2 Corridor Map

1.3.1 Proposed avoidance and minimization measures: A complete alternatives analysis was performed and reviewed for this project. This included the evaluation of a no-action alternative and the preferred alternative. Additional alternatives were considered during the early planning stages, but were dismissed from further analysis for environmental, geological, technical, or economic reasons. Additional monitoring activities before, during, and after dredging will be required and must be in conformance with the 2004 FONSI and

the associated National Marine Fisheries Service (NMFS) Biological Opinion (BO). Special conditions will also be incorporated into the permit to ensure the protection of threatened and endangered species, water quality and natural resources from dredging related impacts (See Section 11.0).

1.3.2 Proposed compensatory mitigation: No compensatory mitigation is proposed by the Applicant due to the impacts being to an open water environment and no special aquatic sites will be impacted by dredging or spoil disposal. The Applicant will be required to comply with the terms and conditions stipulated in the Department of the Army (DA) permit, the NC Division of Water Resources 401 Water Quality Certification, NC Division of Coastal Management permit, and the National Park Service Special Use Permit that will be issued after the DA permit is issued. The Applicant will also be responsible for monitoring activities before, during, and after dredging in conformance with the permits issued for this project.

1.4 Existing conditions and any applicable project history: The primary navigation channel, Oregon Inlet Channel, extends approximately 3 miles and is aligned southwestward coming from the Atlantic Ocean and then turns northwestward to Old House Channel, into Pamlico Sound. Davis Channel, a secondary route just west of Pea Island, runs to the southwest for 2.5 miles and is especially susceptible to shoaling. Because the old Bonner Bridge has been replaced, the new 2.8-mile Marc Basnight Bridge is located just west of the old bridge and has seven navigation spans providing an average of 300 feet of horizontal clearance between spans and a vertical clearance of 70 feet. The navigation zone (navigation span height and width) would be 1,600 to 2,000 feet long. A majority of the original bridge is now being demolished with the exception of a 1,000-ft section at the south end that will be repurposed into a fishing pier.

Like most inlets, the geomorphology of Oregon Inlet is dynamic. During relatively storm-free periods, an elongated spit forms along the southern shoulder of Bodie Island and the cross-section of the inlet assumes a narrow, but deep configuration with steep banks. However, during times of stormy weather, when Oregon Inlet's shoulders are well-rounded, the configuration is a shallow channel with wide overbanks on one or both sides. Since its formation following a hurricane in 1846, Oregon Inlet has migrated approximately 2.3 miles south as shifting sands have built up the northern side while eroding its southern side. The erosion of the south side of the inlet was abated by the construction of a Terminal Groin on the northern end of Pea Island in 1991. As sand continues to shift, shoaling often occurs within the confines of the inlet creating chronically shallow and unsafe conditions within the federal navigation channel. As such, the Corps, along with the State of North Carolina and Dare County, have spent much time and resources attempting to maintain navigable depths and restore

safety for mariners. In 1950, Congress authorized the Corps to dredge a channel in the inlet to a depth of 14 feet. Later, in 1970, Congress authorized construction of two jetties and extended the depth of the ocean bar navigation channel within the inlet to 20 feet. However, after several decades of studies and debate, the jetty project was ultimately rejected largely due to environmental concerns leaving maintenance dredging as the sole means of inlet management.

Historically, dredging operations within the inlet have been performed by a combination of the Corps' dredge fleet (sidecast dredge and special purpose hopper dredges) and contract dredges including both pipeline and hopper dredges. According to dredge data from the North Carolina Beach and Inlet Management report, between 1975 and 2015 more than 32 million cubic yards of material has been dredged from within Oregon Inlet (Moffatt & Nichol, 2016). A national decrease in federal funding for shallow draft inlets resulted in decreased funding for dredging of Oregon Inlet. The overall downward trend in federal funding prompted the North Carolina Department of Environmental Quality (Formerly NC Department of Environment and Natural Resources) to execute a Memorandum of Agreement with the Corps in November 2013 (2013 MOA), allowing the State and Local Governments to contribute funds to the Corps for maintenance dredging of "Shallow Draft Navigation Channels".

A number of factors prompted the State to modify the 2013 MOA. The first factor was a noticeable trend of decreased federal funding to maintain Oregon Inlet between 2013 and 2016. The second factor had to do with the ineffectiveness of an approximately \$9 million pipeline dredge project conducted by the Corps (contract dredge) in 2014. The channel, which was dredged to approximately 18 feet deep, shoaled to a depth of less than 4 feet in a matter of months. This led to local officials and the Corps concluding that continuous maintenance of Oregon Inlet year round was necessary to avoid navigation closures of the inlet. However, that amount of dredging would have exceeded the \$4 Million cap included in the original MOA. A third factor included the nearing of the expiration of the 2013 MOA, scheduled to expire in September 2017. The 2013 MOA was amended in July 2016, increasing the annual cap from \$4 Million to \$12 Million.

Although the State and Dare County have taken initiatives to provide the necessary supplemental funding to maintain the Oregon Inlet Channel, dredge plant availability has become an issue as the Corps' dredge plants are in high demand to maintain navigation channels throughout the East and Gulf Coasts.

Recognizing the need for greater dredging capacity, Senate Bill 99 of Session 2017 was passed by the North Carolina Senate and provides for the construction of a privately-owned dredge that can be utilized to maintain shallow draft

navigations channels within the State including Oregon Inlet. Section 13.7(a-h) of the bill States:

“...the maintenance of the State’s shallow draft navigation channels in a manner that keeps those channels navigable and safe and minimizes their closure or degradation is a vital public purpose and proper governmental function and that declines in federal funding and dredging activity have significantly and adversely impacted the ability of the federal government to maintain these channels in a timely manner. The resulting deterioration in these channels damages the significant portion of the economy of the State’s coastal regions that is dependent on the use of the navigation channels by watercraft. Therefore, it is the policy of the State to support and, when necessary to meet the public purposes set forth in this subsection, to supplement federal maintenance of the navigational channels.”

The bill authorized the allocation of up to \$15 million of State funds to be provided, in the form of a forgivable loan to a private partner for the construction and operation of a dredge capable of maintaining shallow draft navigation channels throughout the State. The legislation further authorized the Oregon Inlet Task Force (OITF) to solicit proposals through an RFP, through which a private partner could be selected. Proposals were solicited from interested companies and the OITF selected a private partner to work with. However, prior to significant investments being made by the dredge partner for planning, design, and construction of a dredge plant, it is necessary to have permits in place for the maintenance work for which the dredge is being constructed.

Accordingly, Dare County is seeking the permits and authorizations required to utilize the new dredge to supplement the Corps’ efforts to maintain safe navigation within the confines of Oregon Inlet and certain connecting channels. This proposed action includes the ability to dredge on a year-round basis as is being done now. All aspects of the proposed dredging operations, including the extent of dredging areas, the location for disposal of dredge spoils and the ability to dredge year round would be bound by the same conditions and constraints as defined within the 2004 FONSI. The specific areas to be dredged, as defined in the 2004 FONSI, would include:

“...a 14-foot deep by 400-foot wide channel through Oregon Inlet and the ocean bar. An approximate 16,050-foot long portion of the channel from Oregon Inlet to Hell’s Gate (12-foot deep by 100-foot wide) and an approximate 2,850-foot long portion of Old House Channel (12-foot deep by 100-foot wide) in Dare County.”

Given the channel through Oregon Inlet and the ocean bar as well as the channel from Oregon Inlet to Hell’s Gate are both maintained in a location that follows

best water and are not in a fixed position, a proposed channel corridor has been defined in which maintenance dredging is being requested to align with the channel parameters sited above. The disposal sites proposed for material dredged by the new dredge would also be the same as what is currently authorized by the Corps in the 2004 FONSI.

1.5 Permit Authority: Section 10 of the Rivers and Harbors Act (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344).

2.0 Scope of review for National Environmental Policy Act (i.e. scope of analysis), Section 7 of the Endangered Species Act (i.e. action area), and Section 106 of the National Historic Preservation Act (i.e. permit area)

2.1 Determination of scope of analysis for National Environmental Policy Act (NEPA):

The scope of analysis includes the specific activity requiring a Department of the Army permit. Other portions of the entire project: are included because the Corps does have sufficient control and responsibility to warrant federal review.

Final description of scope of analysis:

The Corps scope of analysis includes the regulated activities occurring in navigable waters of the U.S. The following factors were considered in this determination:

1. Whether or not the regulated activity comprises "merely a link" in a corridor type project.

The activity is not a corridor type project.

2. Whether there are aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity.

3. The extent to which the entire project will be within the Corps jurisdiction.

The Corps regulatory control over this project includes the dredging and discharge of dredged material within the confines of the Oregon Inlet corridor and the disposal areas. The entire project corridor including the ocean bar and Pamlico Sound channels include approximately 2,300 acres. As such, the analysis in this document includes the entire project area, including the nearshore disposal area located at the north end of Pea Island.

2.2 Determination of the “action area” for Section 7 of the Endangered Species Act (ESA):

Based on the extent of Section 404 and Section 10 jurisdiction contained within the Applicant’s project boundary, and the need to obtain Section 404 and Section 10 permits from the Wilmington District, it has been determined that for the purposes of Section 7 of the Endangered Species Act, the Action Area includes the entire project area, including the nearshore disposal area.

2.3 Determination of permit area for Section 106 of the National Historic Preservation Act (NHPA):

The permit area includes those areas comprising waters of the United States that will be directly affected by the proposed work or structures . Activities outside of waters of the U.S. are not included because all three tests identified in 33 CFR 325, Appendix C(g)(1) have not been met.

Final description of the permit area: Based on the extent of Section 404 and Section 10 jurisdiction contained within the Applicant’s project boundary and the need to obtain Section 404 and 10 permits from the Wilmington District, it has been determined that for the purposes of Section 106 of the NHPA, the analysis in this document includes the entire project area, include the nearshore disposal area.

3.0 Purpose and Need

3.1 Purpose and need for the project as provided by the applicant and reviewed by the Corps: The purpose of Dare County’s proposed action is to have the ability to operate a privately-owned dredge within the confines of Oregon Inlet in a manner that aligns with current Corps maintenance practices within Oregon Inlet. This includes the ability to conduct maintenance dredging on a year-round basis. The need of this action is to maintain the County and State’s economic viability while preserving environmental quality and human safety.

3.2 Basic project purpose, as determined by the Corps: To perform year-round maintenance dredging within the federal project confines of Oregon Inlet and connecting channels.

3.3 Water dependency determination: N/A, activity is not located in a special aquatic site.

3.4 Overall project purpose, as determined by the Corps: The purpose is to have the ability to operate a privately-owned dredge within the confines of the federal

project in Oregon Inlet and connecting channels on a year-round basis to perform maintenance dredging providing safe navigation for the region.

4.0 Coordination

- 4.1 The results of coordinating the proposal on Public Notice (PN) are identified below, including a summary of issues raised, any applicant response and the Corps' evaluation of concerns.

Were comments received in response to the PN? Yes

Were comments forwarded to the applicant for response? Yes

Was a public meeting and/or hearing requested and, if so, was one conducted?
No, no public hearing or meeting was requested.

Comments received in response to public notice:

Comment 1:

U.S. Fish and Wildlife Service: By letter dated March 1, 2019 commented on the possible effects of the West Indian manatee and Piping plover critical habitat.

Applicant's Response: The Applicant responded that the privately-owned dredge would not operate in intertidal habitats that might affect the piping plover and would also comply with the Service's "Guidelines for Avoiding Impacts to the West Indian Manatee."

Corps Evaluation: The Corps will incorporate the Service's West Indian Manatee guidelines into the special conditions of the permit.

Comment 2:

By letter dated March 6, 2019, the North Carolina Wildlife Resources Commission (NCWRC) stated, *"if all conditions of the USACE's 2004 FONSI are upheld, including dredge design, the NCWRC would have minimal concerns with year-round maintenance activities in the Oregon Inlet project area with regard to sea turtle impacts."*

Applicant's Response: The Applicant assures the Corps that the project will mirror the operation scope and methodologies outlined by the 2004 FONSI.

Corps Evaluation: Special conditions will be included in the permit to ensure the Applicant strictly adheres to the Corps' 2004 FONSI.

Comment 3:

By letter dated March 8, 2019, the National Marine Fisheries Service (NMFS) expressed no objection to the proposed project provided the Applicant adheres to the specifications for dredge operation described in the 2004 FONSI.

Corps Evaluation: Special conditions will be included in the permit to ensure the Applicant strictly adheres to the Corps' 2004 FONSI.

Comment 4:

By email dated March 19, 2019, the Wilmington District's Navigation Branch suggested that the scour holes under the Bonner Bridge should be removed as a disposal option since the federal authorization no longer existed for that option. They also recommended that the placement of dredged material in the nearshore disposal area off the north end of Pea Island occur at approximately minus 10 foot MLW. The Corps also stated that a couple areas shown within the submitted dredge corridor were not authorized to be dredged under the 2004 FONSI.

Applicant's Response: The Applicant responded that they wanted to have the option to dispose of material within deep scour holes under the remaining portions of Bonner Bridge as allowed under the 2004 FONSI. The Applicant also agrees to place material at the nearshore disposal area between the minus 10 foot MLW and the minus 14 foot MLW contours as weather and dredge capacity allows. The Applicant has removed two areas from the initial dredge corridor to reflect the Corps comments regarding the 2004 FONSI (See Figure 1.2).

Corps Evaluation: The Navigation Branch addressed the Applicant's comments by email dated March 18, 2019. The Navigation Branch has no issue with placement of material beneath the remaining Bonner Bridge pilings as they do not believe the material will impact the federal navigation channel in a negative way. However, placement of material at the base of the *terminal groin* has never been authorized or permitted and thus is outside the scope of the 2004 FONSI. The Applicant will only dispose of spoil within deep scour holes under the remaining sections of the Bonner Bridge as necessary and only after coordination with Wilmington District's Regulatory Division and Navigation Branch. A special condition will be included in the permit to

address this. The Applicant also revised the corridor map to reflect the 2004 FONSI and also agreed to dispose of dredged material between the minus 10 foot and minus 14 foot MLW contours.

Additional discussion of submitted comments, applicant response and/or Corps' evaluation: None.

- 4.2 Were additional issues raised by the Corps including any as a result of coordination with other Corps offices? No
- 4.3 Were comments raised that do not require further discussion because they address activities and/or effects outside of the Corps' purview? No
- 5.0 **Alternatives Analysis** (33 CFR Part 325 Appendix B(7), 40 CFR 230.5(c) and 40 CFR 1502.14). An evaluation of alternatives is required under NEPA for all jurisdictional activities. An evaluation of alternatives is required under the Section 404(b) (1) Guidelines for projects that include the discharge of dredged or fill material. NEPA requires discussion of a reasonable range of alternatives, including the no action alternative, and the effects of those alternatives; under the Guidelines, practicability of alternatives is taken into consideration and no alternative may be permitted if there is a less environmentally damaging practicable alternative.
- 5.1 Site selection/screening criteria: In order to be practicable, an alternative must be available, achieve the overall project purpose (as defined by the Corps), and be feasible when considering cost, logistics and existing technology.

Criteria for evaluating alternatives as evaluated and determined by the Corps:

<u>Issue</u>	<u>Measurement and/or constraint</u>
Dredge footprint impacts	Location and amount of dredging impacts
Dredge disposal Impacts	Linear feet of direct impacts
Dredge volume	Cubic yards
Water Quality/Turbidity	Nephelometric Turbidity Units (NTU)
T & E Species	Effects/modification of critical habitat/takes
Construction Costs	Direct Costs
Economic Considerations	Effects of safe navigation channel

- 5.2 Description of alternatives
 - 5.2.1 No action alternative: Under the *"No-Action Alternative,"* maintenance dredging of the inlet would continue to be performed by the Corps when funds and dredges were available. In the past, Dare County requested that a Corps dredge be

available 340 days per year to maintain navigation through Oregon Inlet and made additional funds available to the Corps to conduct the work via the 2013 MOA. The Corps suggested that if the 2013 MOA was executed, additional crew could be hired to operate a dredge on a 24-hour basis providing the equivalent of 340, 12-hour shifts per year. A subsequent MOA was executed on July 16, 2016 (2016 MOA), increasing the available funds from \$4 Million per year to \$12 million per year. The funding made available through the 2016 MOA allowed for 4,080 hours of dredging within Oregon Inlet annually. Despite the increase in available funds, other Corps maintenance dredging obligations within and outside of the State in 2017 and 2018 resulted in the Corps only being unable to conduct 2,800 hours of maintenance dredging out of the requested 4,080 hours.

5.2.2 Off-site alternatives

Off-site alternative 1: The only off-site alternative presented involved the utilization of Hatteras Inlet to reach the Atlantic Ocean. Access to Hatteras Inlet would be accomplished by navigating deeper Pamlico Sound waters for 40 miles until reaching the Hatteras-Ocracoke NCDOT Ferry navigation channel and then the Atlantic Ocean.

5.2.3 On-site alternatives

On-site alternative 1 (applicant's preferred alternative): The "*Applicant's Preferred-Oregon Inlet Maintenance Supplemented with a New Privately-Owned Hopper Dredge*" consists of utilizing the privately-owned, special purpose dredge to supplement dredging activities conducted by the Corps on a year-round basis. The dredge would operate in the same manner and under the same conditions as what is currently authorized under the 2004 FONSI to perform maintenance dredging within Oregon Inlet and its connecting channels. The Applicant proposes to operate within the confines of the Corps authorization by performing maintenance dredging that "follows the best water." In some cases, the dredging footprint may change as the deep water migrates throughout the inlet. A dredging corridor has been established (Figure 1.2) and bathymetric surveying would be performed prior to each dredge event to determine the location of the best water for the channel.

The Applicant's preferred alternative would also utilize the existing nearshore disposal area in the ocean off the north end of Pea Island that is currently authorized by the 2004 FONSI. The Applicant also proposes to dispose of dredged material within deep scour holes that may form beneath the remaining bridge pilings of Bonner Bridge that will serve as a public access fishing pier. It is anticipated that approximately 615,000 cubic yards of material would be removed from the inlet and ocean bar annually by the subject privately-owned dredge.

Working in conjunction with the Corps' dredges, the amount of material removed from the Oregon Inlet complex each year would average around 1,000,000 cubic yards.

5.3 Evaluate alternatives and whether or not each is practicable under the Guidelines or reasonable under NEPA :

No action alternative: Maintenance dredging of the inlet would continue to be performed by the Corps when funds and dredges are available. This alternative does not meet the project purpose and need as maintenance dredging by the Corps is not adequate to maintain predictable and safe navigation of the inlet and connecting channels on a year-round basis. Additionally, navigation after storm events would continue to be compromised due to time-loss dredge mobilization and lack of funding for the Corps to conduct the work. This alternative is determined to be not practicable.

Off-site alternative 1: Utilizing Hatteras Inlet is problematic for a number of reasons not the least of which is Hatteras Inlet and its connecting channels are similarly dynamic to Oregon Inlet and require routine maintenance dredging to keep them open to boat traffic. Increased dredging costs will be incurred by the Corps and State to conduct the dredging necessary to maintain Hatteras Inlet for the increased boat traffic. Negative logistical considerations include the 40 mile distance commercial and recreational boats would have to travel to reach the Atlantic Ocean. This is likely to result in the loss of commercial and recreational revenues associated with the Oregon Inlet Fishing Center, Pirates Cover Marina, and the Wanchese seafood and boatbuilding industries that would represent economic losses for Dare County. Additionally, the U.S. Coast Guard's manages Oregon Inlet Station and its safety mission would be compromised if funding was funneled away from Oregon inlet to maintain Hatteras Inlet. Accordingly, this alternative is determined to be not practicable.

Onsite Alternative 1 (Applicant's Preferred): This alternative comports with the Corps' 2004 FONSI that also provides sideboards for construction and operation of the private dredge. Senate Bill 99 was passed by the State to provide funding for construction of the dredge that would help the Corps maintain safe navigation throughout Oregon Inlet on a year-round basis. Commercial and recreation boat fleets would be able to safely navigate the inlet maintaining an important tax base for Dare County and the region. The USCG Station Oregon Inlet responds to over 85 distress calls annually and the project would improve the USCG's ability to maintain its operational capabilities serving the northern Outer Banks and the Atlantic Ocean. This alternative is determined to be practicable.

5.4 Least environmentally damaging practicable alternative under the 404(b)(1) Guidelines (if applicable) and the environmentally preferable alternative under NEPA: The Applicant’s preferred alternative (Onsite Alternative 1) is the least environmentally damaging practicable alternative and the environmentally preferred alternative that meets the overall project purpose.

6.0 Evaluation for Compliance with the Section 404(b)(1) Guidelines. The following sequence of evaluation is consistent with 40 CFR 230.5

6.1 Practicable alternatives to the proposed discharge consistent with 40 CFR 230.5(c) are evaluated in Section 5. The statements below summarize the analysis of alternatives.

In summary, based on the analysis in Section 5.0 above, the no-action alternative, which would not involve discharge into waters, is not practicable.

It has been determined that there are no alternatives to the proposed discharge that would be less environmentally damaging. (Subpart B, 40 CFR 230.10(a)). The proposed discharge in this evaluation is the practicable alternative with the least adverse impact on the aquatic ecosystem, and it does not have other significant environmental consequences.

6.2 Candidate disposal site delineation (Subpart B, 40 CFR 230.11(f)). Each disposal site shall be specified through the application of these Guidelines:

Discussion: The disposal areas include, a) nearshore disposal in the ocean off the north end of Pea Island, and b) within deep scour holes beneath the Herbert C. Bonner Bridge (Bonner Bridge). The majority of the existing bridge will be demolished in the near future and the remaining 1,000 feet of bridge connected to Pea Island will be repurposed as a public access fishing pier. The disposal of material for this proposed action will also include areas of scour surrounding the remaining bridge pilings. No other disposal areas are authorized under this action.

6.3 Potential impacts on physical and chemical characteristics of the aquatic ecosystem (Subpart C 40 CFR 230.20). See Table 1:

Table 1 – Potential Impacts on Physical and Chemical Characteristics						
Physical and Chemical Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Substrate				X		

Table 1 – Potential Impacts on Physical and Chemical Characteristics						
Physical and Chemical Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Suspended particulates/ turbidity				X		
Water			X			
Current patterns and water circulation			X			
Normal water fluctuations		X				
Salinity gradients		X				

Discussion: Substrate is rated a minor effect (short-term) because of the similarity of the dredged material to the substrate on which it will be disposed. The dynamic nature of the inlet also supports rapid assimilation of sediments.

Suspended Particulates/Turbidity is rated a minor effect (short-term) because turbidities will increase during the dredging and disposal activities. However, due to the composition of the spoil material (sand and shell fragments) and the dynamic nature of the inlet, these impacts are expected to be short-term and minimal.

Water is rated a negligible effect because dredged sediments are generally inert and do not contain foreign material that will dissolve quickly in sea water or otherwise not change water chemistry.

Current Patterns and Water Circulation are rated a negligible effect because routine dredging and spoiling activities have been conducted in the area in the past and due to the dynamic nature of the inlet complex, effects to current patterns and water circulation are undetectable.

Normal Water Fluctuations are rated no effect because the project will not change tides, wave energy or water levels within the inlet.

Salinity Gradients are rated no effect because the project does not involve sediments that would change the salt and/or water chemistry of the inlet.

6.4 Potential impacts on the living communities or human uses (Subparts D, E and F):

6.4.1 Potential impacts on the biological characteristics of the aquatic ecosystem (Subpart D 40 CFR 230.30). See Table 2:

Table 2 – Potential Impacts on Biological Characteristics						
Biological characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Threatened and endangered species				X		
Fish, crustaceans, mollusk, and other aquatic organisms				X		
Other wildlife				X		

Discussion: Due to the fact that maintenance dredging and disposal is ongoing, the proposed minimal impact dredging methodologies, low suction/slow speed dredge plant, and permit terms and conditions implemented to avoid and minimize impacts to species, effects are expected to be minor and short term. Fish and other highly mobile aquatic organisms and wildlife will experience minimal short-term impacts during dredging events. For more information see Section 10.1.1 of this document.

6.4.2 Potential impacts on special aquatic sites (Subpart E 40 CFR 230.40). See Table 3:

Table 3 – Potential Impacts on Special Aquatic Sites						
Special Aquatic Sites	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Sanctuaries and refuges			X			
Wetlands	X					
Mud flats	X					
Vegetated shallows	X					
Coral reefs	X					

Discussion: During operations, indirect effects may include increased noise levels and visual effects in the immediate vicinity of northern Pea Island National Wildlife Refuge. All effects would be temporary and cease with completion of

each dredging event. Some increase in boat traffic may result from more consistently navigable channels.

6.4.3 Potential impacts on human use characteristics (Subpart F 40 CFR 230.50). See Table 4:

Table 4 – Potential Impacts on Human Use Characteristics						
Human Use Characteristics	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Municipal and private water supplies		X				
Recreational and commercial fisheries						X
Water-related recreation						X
Aesthetics		X				
Parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves				X		

Discussion: Positive effects to recreational and commercial fisheries, as well as seafood processing/packing and boat building, are rated major because Oregon Inlet is considered to be one of the most commercially vital inlets along the coast of North Carolina. The State-wide overall economic impact of Oregon Inlet is over \$500 million dollars while supporting 4,300 jobs.

Water-related recreation is rated a major positive effect as boat building and tournament fishing have a positive economic benefit to the area. Safe navigation of the inlet would support thousands of recreational fisherman each year.

Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves are rated as a minor short-term effect as Oregon Inlet is situated within Cape Hatteras National Seashore, which is administered as a unit of the National Park System (16 U.S.C. § 459a-1). The Seashore includes the submerged lands within Oregon Inlet. Activities within the Seashore, including navigation channel maintenance, must comply with the NPS Organic Act of 1916, the Seashore’s enabling legislation, the NPS Management Policies, NPS regulations, Service wide guidance documents, and applicable

park management documents. The Applicant must also obtain a NPS Special Use Permit.

6.5 Pre-testing evaluation (Subpart G, 40 CFR 230.60):

The following has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. See Table 5:

Physical characteristics	X
Hydrography in relation to known or anticipated sources of contaminants	
Results from previous testing of the material or similar material in the vicinity of the project	
Known, significant sources of persistent pesticides from land runoff or percolation	
Spill records for petroleum products or designated (Section 331 of CWA) hazardous substances	
Other public records or significant introduction of contaminants from industries, municipalities, or other sources	
Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities	

Discussion: There is no known contamination in the proposed dredged sediments, which consist of ~99 percent sand or granular sized material [mostly quartz and calcium carbonates (shell)]. Because the dredge corridor is within the inlet complex, away from any freshwater river discharges, the likelihood of contaminated sediments is negligible.

It has been determined that testing is not required because the proposed material is not likely to be a carrier of contaminants because it is comprised of sand, gravel or other naturally occurring inert material.

6.6 Evaluation and testing (Subpart G, 40 CFR 230-61):

Discussion: N/A

6.7 Actions to minimize adverse impacts (Subpart H). The following actions, as appropriate, have been taken through application of 40 CFR 230.70-230.77 to ensure minimal adverse effects of the proposed discharge. See Table 6:

Actions concerning the location of the discharge	X
Actions concerning the material to be discharged	X
Actions controlling the material after discharge	X
Actions affecting the method of dispersion	X
Actions affecting plant and animal populations	X
Actions affecting human use	X

Discussion: The Applicant proposes to utilize the existing nearshore disposal area in the ocean off Pea Island that is currently authorized by the 2004 FONSI. Disposal of material will occur between the minus 10 foot MLW and the minus 14 foot MLW contours that is considered within the active littoral system where natural wave and energy processes will rapidly disperse the material. The Applicant also proposes to dispose of dredged material within deep scour holes that may form beneath the remaining bridge pilings of the old Bonner Bridge that will be utilized as public access fishing pier. The Applicant will be required to conduct bathymetric surveying and coordinate with the Wilmington District Regulatory Division and Navigation Branch before spoiling in this area.

Dredged material will be discharged in a manner that allows for water flow and currents to rapidly disperse the material, minimizing the effects on aquatic life. The disposal sites are located within the Oregon Inlet complex and while navigability of the inlet may be effected during maintenance dredging events, it is anticipated that those impacts will be short-term and minimal and will have no negative effect on human use.

- 6.8 Factual Determinations (Subpart B, 40 CFR 230.11). The following determinations are made based on the applicable information above, including actions to minimize effects and consideration for contaminants. See Table 7:

Site	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Physical substrate				X		
Water circulation, fluctuation and salinity			X			
Suspended particulates/turbidity				X		

Table 7 – Factual Determinations of Potential Impacts						
Site	N/A	No Effect	Negligible Effect	Minor Effect (Short Term)	Minor Effect (Long Term)	Major Effect
Contaminants		X				
Aquatic ecosystem and organisms				X		
Proposed disposal site				X		
Cumulative effects on the aquatic ecosystem			X			
Secondary effects on the aquatic ecosystem			X			

Discussion:

Physical Substrate: The physical substrate of the dredged areas and the disposal sites will be impacted by the proposed activity. However, these areas have been dredged in the past and will be maintained for navigability as a result of this permit. Impacts to the disposal sites are also expected to be minimal as they have been utilized in the past and are located within the dynamic inlet complex.

Water Circulation, Fluctuation, and Salinity: The proposed project is not expected to have an appreciable effect on salinity, temperature, water chemistry, clarity, color, odor, taste, dissolved gas levels or increased/decreased nutrients or eutrophication within the water column. Water fluctuations and salinities are not expected to be affected by the proposed project. Circulation patterns within the inlet complex will be changed slightly due to the proposed dredging activity. Since dredging activities have been conducted in the past and due to the dynamic nature of the inlet, dredging and disposal impacts are expected to be temporary and minimal.

Suspended Particulates/Turbidity: There would be a temporary increase in turbidity levels in the project area during dredging activities. Turbidity would be short-term and localized with minimal adverse impacts to natural resources. The grains of well-sorted sand with a low silt percentage would allow for a short suspension time and containment of sediment during and after dredging. The settling time for the sand grains would be minimal and thus, light penetration would return to normal in a short period of time. Due to the dynamic nature of the inlet, the impacts are expected to be short-term and minimal. Also, best management practices as required in permit conditions would be employed to control the levels of particulates in the water column. Therefore, minimal impacts

on the near shore and estuarine environments would be anticipated. A condition of the Section 401 Water Quality Certification states that a turbidity standard of 25 Nephelometric Turbidity Units (NTU's) shall not be exceeded. The conditions of the water quality certification would be incorporated into the DA permit.

Contaminants: Pursuant to 40 CFR 230.6(a) and (b), the Corps has determined that there is no reason to believe that contaminants are present in the project area. The proposed project area has experienced routine maintenance dredging activities in the past. Due to the dynamic nature of the inlet, material consist of course sand and there have been no known hazardous, toxic or radioactive wastes in the project area.

Aquatic Ecosystem and Organisms: Individual and cumulative impacts to aquatic ecosystems and organisms are expected to be minimal based on the nature and duration of the proposed impacts, and the location of the project in a dynamic environment that is subject to seasonal species variations. During dredging and the disposal of dredged material, immediate localized impacts originating from the removal and covering of substrate and the abrupt increased sedimentation at the disposal area may temporarily affect fish and benthic organisms present in the immediate work areas, but would likely not have permanent appreciable effect on aquatic resources. Fish and other mobile species are expected to leave the project areas during dredging activities and are expected to return upon completion of the project. The project would result in mortality of benthic species during dredging and spoil deposition, but species from nearby unaffected areas are expected to recolonize the affected areas upon completion of the project given that the disposed material will be consistent with the material found within the dredged areas.

The Applicant provided a Biological Assessment including an EFH Assessment with the application for the project. The Corps reviewed those assessments and coordinated with the USFWS and NMFS concerning threatened and endangered species and EFH. The USFWS concurred with the Corps regarding effects to threatened and endangered species. The NMFS has no objection to the project as long as it follows the conditions set forth in the 2004 FONSI.

Proposed Disposal Site: The dredged material will be discharged in an authorized near shore disposal area in the Atlantic Ocean at the north end of Pea Island as well as deep scour holes beneath the remaining Bonner Bridge pilings. The dredged material would consist of sandy material and would allow for a short suspension time and containment of sediment during and after disposal. As a result, the mixing zone will be confined to the smallest practicable area within the disposal site. The material will likely disperse in areas down-drift of the disposal site by way of natural sediment transport, but the dispersion is not expected to

result in adverse environmental effects. Additionally, the Section 401 Water Quality Certification contains conditions for maintaining appropriate sediment and erosion control measures. These conditions would be incorporated into the DA permit.

Cumulative Effects on the Aquatic Ecosystem: Cumulative effects are discussed below in Section 9 of this document.

Secondary Effects on the Aquatic Ecosystem: Secondary effects are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Minor and short term increases in turbidity are expected within the waters located adjacent to the disposal sites. Turbidity is expected to be short term due to the nature of the coarse, sandy spoil material that is compatible with material found at the disposal sites.

- 6.9 Findings of compliance or non-compliance with the restrictions on discharges (40 CFR 230.10(a-d) and 230.12). Based on the information above, including the factual determinations, the proposed discharge has been evaluated to determine whether any of the restrictions on discharge would occur. See Table 8:

Subject	Yes	No
1. Is there a practicable alternative to the proposed discharge that would be less damaging to the environment (any alternative with less aquatic resource effects, or an alternative with more aquatic resource effects that avoids other significant adverse environmental consequences?)		X
2. Will the discharge cause or contribute to violations of any applicable water quality standards?		X
3. Will the discharge violate any toxic effluent standards (under Section 307 of the Act)?		X
4. Will the discharge jeopardize the continued existence of endangered or threatened species or their critical habitat?		X
5. Will the discharge violate standards set by the Department of Commerce to protect marine sanctuaries?		X
6. Will the discharge cause or contribute to significant degradation of waters of the U.S.?		X
7. Have all appropriate and practicable steps (Subpart H, 40 CFR 230.70) been taken to minimize the potential adverse impacts of the discharge on the aquatic ecosystem?	X	

Discussion: The Applicant’s preferred alternative will be implemented in the most efficient way possible using standard dredging technologies widely applied throughout the world. The method is principally hydraulic and does not require chemicals, harmful additives, or special techniques to facilitate the dredging. Maintenance dredging of Oregon Inlet has occurred on a regular basis since the 1950’s and modern dredging procedures and permit conditions minimize the threat to endangered species and their habitats. Material will be disposed of in previously authorized areas and dredge material will be similar in nature to the material found within the disposal areas. Due to the dynamic nature of the inlet and the disposal areas, impacts to the aquatic environment will be short-term and minimal.

7.0 General Public Interest Review (33 CFR 320.4 and RGL 84-09)

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest as stated at 33 CFR 320.4(a). To the extent appropriate, the public interest review below also includes consideration of additional policies as described in 33 CFR 320.4(b) through (r). The benefits which reasonably may be expected to accrue from the proposal are balanced against its reasonably foreseeable detriments.

7.1 All public interest factors have been reviewed and those that are relevant to the proposal are considered and discussed in additional detail. See Table 9 and any discussion that follows.

Table 9: Public Interest Factors	Effects					
	None	Detrimental	Neutral (mitigated)	Negligible	Beneficial	Not Applicable
1. Conservation: .	X					
2. Economics: The project would provide an overall benefit to the local and State economy though the safe navigability of Oregon Inlet. Positive effects would be experienced throughout the commercial and recreational fishing as well as the boat building and seafood processing/packing industries.					X	

Table 9: Public Interest Factors	Effects					
	None	Detrimental	Neutral (mitigated)	Negligible	Beneficial	Not Applicable
3. Aesthetics: The proposed dredging and disposal will occur directly within the Oregon Inlet complex and the nearshore disposal area. During operations, indirect effects could include increased noise levels, and visual effects in the immediate area. All impacts would be temporary and cease with completion of each dredging event.				X		
4. General Environmental Concerns: Overall, the project is expected to have minimal environmental impacts. The proposed activity is similar to dredging projects completed by the Corps in the past utilizing the same methodologies. Adverse environmental impacts are expected to be negated by the terms and conditions set forth in the permit.				X		
5. Wetlands: No wetlands will be impacted by the proposed project.	X					
6. Historic Properties: In a letter dated January 28, 2019, the North Carolina Department of Cultural Resources State Historic Preservation Office (SHPO) identified three (3) shipwrecks throughout the ebb-tidal delta and requested that the channel corridor be modified to avoid these resources. The Applicant agreed and these recommendations will be reflected in the permit conditions.				X		
7. Fish and Wildlife Values: Impacts to fish and wildlife values are expected to be minimal as a result of the terms and conditions set forth by the permit. No additional comments were received from USFWS or NMFS and no concerns exist provided the Applicant follows the 2004 FONSI.				X		
8. Flood Hazards: The proposed dredging would occur directly within the Oregon Inlet complex. The proposed work is not expected to result in any flood hazards.	X					
9. Floodplain Values: The proposed dredging would occur directly within the Oregon Inlet complex. The proposed work is not expected to adversely affect any floodplain values.	X					
10. Land Use: The proposed project would not change the land use of the project area.	X					

Table 9: Public Interest Factors	Effects					
	None	Detrimental	Neutral (mitigated)	Negligible	Beneficial	Not Applicable
11. Navigation: Navigation within the Oregon Inlet complex would be expected to improve as a result of this action. Other than the presence of dredges within the inlet and disposal areas, no other adverse effects to navigation are expected from the proposed project. These effects will be limited to the dredging/spoil disposal period and are expected to be short-term and minimal. The dredges and any associated equipment will be marked in accordance with U.S. Coast Guard requirements to eliminate potential hazards to navigation.					X	
12. Shoreline Erosion and Accretion: There will be no effect on the adjacent shoreline as a result of the proposed work.	X					
13. Recreation: The purpose of the proposed project is to maintain safe navigation within Oregon Inlet which will have a direct beneficial effects to local and State recreational fisheries.					X	
14. Water Supply and Conservation: The proposed project will have no effect on water supply and conservation.	X					
15. Water Quality: A Section 401 Water Quality Certification No. 20190264 was issued by the NC Division of Water Quality on April 26, 2019. Provided the Applicant complies with the special conditions associated with the certification, no appreciable impacts to water quality standards will occur.				X		
16. Energy Needs: N/A	X					
17. Safety: The proposed project would be expected to result in navigation channels that are more consistent with the authorized federal project which would have a beneficial effect on the safety of commercial and recreational boating interests.					X	
18. Food and Fiber Production: N/A						X
19. Mineral Needs: N/A						X
20. Consideration of Property Ownership: All proposed work will be done entirely in the Oregon Inlet complex within the confines of the federal project area. A Special Use Permit must be issued by the National Park Service before the work authorized by this permit may commence.			X			

Table 9: Public Interest Factors	Effects					
	None	Detrimental	Neutral (mitigated)	Negligible	Beneficial	Not Applicable
21. Needs and Welfare of the People: The proposed project would have positive effects by supporting existing recreational and commercial opportunities to the people of Dare County and the State by maintaining safe navigation within Oregon Inlet.					X	

Additional discussion of effects on factors above: None.

7.1.1 Climate Change. The proposed activities within the Corps federal control and responsibility likely will result in a negligible release of greenhouse gases into the atmosphere when compared to global greenhouse gas emissions. Greenhouse gas emissions have been shown to contribute to climate change. Aquatic resources can be sources and/or sinks of greenhouse gases. For instance, some aquatic resources sequester carbon dioxide whereas others release methane; therefore, authorized impacts to aquatic resources can result in either an increase or decrease in atmospheric greenhouse gas. These impacts are considered de minimis. Greenhouse gas emissions associated with the Corps' federal action may also occur from the combustion of fossil fuels associated with the operation of construction equipment, increases in traffic, etc. The Corps has no authority to regulate emissions that result from the combustion of fossil fuels. These are subject to federal regulations under the Clean Air Act and/or the Corporate Average Fuel Economy (CAFE) Program. Greenhouse gas emissions from the Corps action have been weighed against national goals of energy independence, national security, and economic development and determined not contrary to the public interest.

7.2 The relative extent of the public and private need for the proposed structure or work:

The proposed project is to perform year-round maintenance dredging within the Oregon Inlet complex with a privately-owned hopper dredge. Commercial and recreational boaters, seafood processing/packaging businesses, and boat building sectors rely heavily on safe navigation through the inlet and have an economic impact of over \$400 million while supporting over 3,000 jobs in Dare County alone. Currently, Dare County relies on the Corps' dredge plants to maintain safe navigation in and around Oregon Inlet. In some cases, storm events or routine shoaling prevent safe navigation through the inlet. Routine

maintenance supplemented by a privately-owned dredge as well as Corps dredge plants would ensure the safe, year-round navigation throughout the inlet complex.

- 7.3 If there are unresolved conflicts as to resource use, explain how the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work was considered.

Discussion: No unresolved conflicts exist.

- 7.4 The extent and permanence of the beneficial and/or detrimental effects that the proposed work is likely to have on the public and private use to which the area is suited:

Detrimental effects are expected to be minimal and temporary.

Beneficial effects are expected to be more than minimal and long term.

With the preferred alternative, minor navigation disruptions may occur during the dredging and disposal events. These impacts have occurred on a regular basis with the extensive maintenance dredging of the inlet. These impacts will be minimal and short term. Upon completion of a dredging event, the safe navigability of the inlet will have a more than minimal beneficial effect on the local/regional economy.

- 8.0 Mitigation** (33 CFR 320.4(r), 33 CFR Part 332, 40 CFR 230.70-77, 40 CFR 1508.20 and 40 CFR 1502.14)

- 8.1 Avoidance and Minimization: When evaluating a proposal including regulated activities in waters of the United States, consideration must be given to avoiding and minimizing effects to those waters. Avoidance and minimization measures are described above in Sections 1 and 3.

Were any other mitigative actions including project modifications discussed with the applicant implemented to minimize adverse project impacts? (see 33 CFR 320.4(r)(1)(i)) Yes

Measures will be taken to ensure the proposed project has minimal environmental impacts while achieving the Applicant's purpose and need. This includes permit terms and special conditions that are designed to reduce adverse impact on threatened and endangered species, native aquatic environments, water quality, and the human environment. The permit special conditions can be found in Section 11.2 of this document.

- 8.2 Is compensatory mitigation required to offset environmental losses resulting from proposed unavoidable impacts to waters of the United States? No

Provide rationale: Compensatory mitigation is not proposed by the Applicant due to the impacts being to an open water environment with no special aquatic sites affected. Furthermore, the Applicant will undertake mitigative measures to reduce impacts to fish and animal populations including dredging methods, dredge designs, and operational restrictions.

9.0 **Consideration of Cumulative Impacts**

(40 CFR 230.11(g) and 40 CFR 1508.7, RGL 84-9) Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor direct and indirect but collectively significant actions taking place over a period of time. A cumulative effects assessment should consider how the direct and indirect environmental effects caused by the proposed activity requiring DA authorization (i.e., the incremental impact of the action) contribute to cumulative effects, and whether that incremental contribution is significant or not. .

- 9.1 Identify/describe the direct and indirect effects caused by the proposed activity:

In the immediate project area during maintenance dredging events, direct effects would be the dredging and the disposal activity itself. Dredges would be located within the inlet complex during these events possibly having a short-term, temporary impact on navigation. Dredges would also be traversing the inlet to and from disposal locations. Dredges and work zones will be clearly marked for the safety of the surrounding vessels. There will be a direct impact on the federal navigation channel and disposal areas, but due to the highly dynamic nature of the inlet and the extensive maintenance dredging performed in the past, these impacts are expected to be minimal. Another possible direct effect from dredge operations would be encounters with endangered species such as sea turtles, sturgeon, manatees, or whales. Should one of these species be observed, prescribed mitigation procedures contained within the permit special conditions would immediately go into effect, and the dredge would either stop operations, or relocate to a different area.

Fish and other mobile species in the vicinity of the dredge and disposal areas during dredging activities are least likely to be affected because of their ability to avoid the disturbed areas. Impacts to anadromous fish and other estuarine-dependent organisms are not expected to be substantial because dredging-related activities in the inlet complex will be localized. Benthic organisms in the immediate area being dredged will be largely eliminated during dredging.

However, initial re-colonization of the dredged areas by opportunistic species is expected to occur soon after cessation of dredging activities. Further recovery is expected from re-colonization by migration of benthic organisms from adjacent areas and by larval transport.

Dredged material will be disposed of within the authorized nearshore disposal area in the Atlantic Ocean off the north end of Pea Island and in deep scour holes below remaining Bonner Bridge pilings. Turbidity will increase in the immediate area of sand deposition but will be placed in high velocity flow areas to maximize dispersion. Most of the fine material deposited at the nearshore disposal area is expected to be washed seaward and migrate to the outer bar during dredging as is occurring now.

Immediately after a dredge event, the direct effects would be a navigation channel that is more consistent with the authorized federal project. Shoaled areas of the inlet and connecting channels would be removed allowing for safer navigation in and around Oregon Inlet.

During operations, indirect effects may include increased noise levels, and visual effects in the immediate area. All impacts would be temporary and cease with completion of each dredge event. Indirect effects are expected to include increased use of the inlet by commercial and recreational boaters.

- 9.2 The geographic scope for the cumulative effects assessment is:
The geographic area for this assessment is limited Oregon Inlet and its associated channels, disposal areas, the immediately adjacent Dare County beaches, and the dredge travel corridor in between.
- 9.3 The temporal scope of this assessment covers: The period from January 1, 2000, to the present. Data evaluated was obtained from the OMBIL Regulatory Module (ORM2) for the geographic area of consideration. This timeframe was selected based on the reliability of available data. Challenges exist with the former RAMS database that was further exacerbated by the transition from RAMS to the ORM2 database prior to 2000. It has been determined that data from January 1, 2000, to the present offers a reasonable representation of impacts for this analysis. Note that this data would not show all impacts that have occurred since implementation of the Section 404 Regulatory Program, but it does indicate a general trend of impacts in the area. Eight (8) permits have been issued in the Oregon Inlet vicinity during this time period, all associated with navigation, shoreline stabilization, and bridge construction projects.
- 9.4 Describe the affected environment: The affected environment has been defined as a discrete area within the Oregon Inlet complex including the waters and

shoals surrounding the inlet complex running west to Hell's Gate and the nearshore disposal area off Pea Island. This area includes a number of habitats including marine and estuarine waters, intertidal flats and shoals, sandy soft bottoms, and other areas within the Oregon Inlet complex. While impacts to the aquatic community will be minimized, the dynamic nature of the inlet complex will continue and any effects are expected to be short term and minimal. Impacts to aquatic species located within this environment are expected to be minimal as the more mobile species will relocate during dredging activities.

- 9.5 Determine the environmental consequences: Environmental consequences of the proposed action area expected to be minimal in regards to similar projects that have taken place within the geographic area of consideration. Regular maintenance dredging has taken place within the Oregon Inlet complex since the 1950's and in 2004, the U.S. Army Corps of Engineers issued a Finding of No Significant Impact (FONSI) for the maintenance dredging of Oregon Inlet and its associated channels as proposed by the subject action. The Corps and contract dredging companies have continued maintenance dredging of the inlet under the 2004 FONSI since that time. Due to the highly complex nature of these inlets and the likelihood of major storm events, maintenance dredging projects are expected to recur on a permanent basis.
- 9.6 Discuss any mitigation to avoid, minimize or compensate for cumulative effects: Pursuant to Subpart H of the 404(b)(1) Guidelines as described in Section 6.7 above, the Applicant will undertake actions to minimize the adverse effects of this project. Dredging projects usually involved two distinct types of impacts, those that occur in the immediate dredged area, and those that occur at the dredged material disposal site. As the purpose of this project is to improve navigability within the federal channel at the Oregon Inlet complex, similar activities have been conducted in the past in the same immediate areas utilizing the same methodologies. Corps dredge plants have been used in the past throughout Oregon Inlet. These dredges have been found to have minimal impacts to threatened and endangered species and other aquatic species due to slow suction speeds and smaller drag heads of the hopper dredges. The privately-owned dredge will work within same footprint as previous maintenance dredging events and will be built and operated using the same specifications as the Corps' special purpose hopper dredges to ensure minimal impacts to threatened and endangered species. Impacts will occur in the immediate dredged area but these impacts are expected to be in areas previously dredged and the aquatic communities within these areas are expected to recover quickly due to the already high energy complex in which they occur. More mobile aquatic species will be relocated during dredging times but no adverse impact is expected to occur. Dredged material will be disposed of within the approved nearshore disposal area off the north end of Pea Island and within deep scour holes around the

remaining Bonner Bridge pilings. Dredged material will be placed in high velocity current flow areas to maximize dispersion and impacts are expected to be minimal. Material will also be placed at the nearshore disposal area in minus 10 foot to minus 14 foot MLW depths within the active littoral zone. Other minimization measures are discussed in Section 11.2.

9.7 Conclusions regarding cumulative impacts:

When considering the overall impacts that will result from the proposed activity, in relation to the overall impacts from past, present, and reasonably foreseeable future activities, the incremental contribution of the proposed activity to cumulative impacts in the area described in section 9.2, are not considered to be significant. Compensatory mitigation will not be required to help offset the impacts to eliminate or minimize the proposed activity's incremental contribution to cumulative effects within the geographic area described in Section 9.2. Mitigation required for the proposed activity is discussed in Section 8.0.

10.0 Compliance with Other Laws, Policies, and Requirements

10.1 **Section 7(a)(2) of the Endangered Species Act (ESA):** Refer to Section 2.2 for description of the Corps action area for Section 7.

10.1.1 Are there listed species or designated critical habitat present or in the vicinity of the Corps' action area? Yes

Effect determination(s), including no effect, for all known species/habitat, and basis for determination(s):

Piping Plover — No Effect. The proposed project will have no effect on piping plover as no work is proposed above normal water level (NWL).

Roseate Tern — No Effect. The proposed project will have no effect on piping plover as no work is proposed above NWL.

Rufa Red Knot — No Effect. The proposed project will have no effect on rufa red knot as no work is proposed above NWL.

Atlantic Sturgeon — May affect, not likely to adversely affect. The dredging corridor, defined for the Applicant's Preferred Alternative, does not include suitable spawning grounds for the Atlantic sturgeon, as the closest spawning grounds are located in the Tar-Pamlico and Roanoke rivers. However, the capturing of individuals in past tagging studies indicates at least a small presence within Pamlico Sound. Because this species transits from riverine spawning habitat to the ocean, Atlantic sturgeon do migrate through Oregon Inlet. Atlantic sturgeon spend much of their life history in the marine environment and can be

found there year-round; therefore, the possibility that this species may transit through or near the nearshore disposal area cannot be ruled out.

The potential for Atlantic sturgeon to be present in the dredging area creates the possibility for interactions with the dredge and draghead. Any Atlantic sturgeon passing through the inlet will likely be subadults or adults, and will therefore be larger than 36 inches. The size and inherent mobility of these individuals are expected to allow them to avoid approaching slow-moving dredges and entrapment in the small dragheads. These conclusions are consistent with those made for shortnose sturgeon in the 1999 Biological Opinion regarding the use of special-purpose dredges and sidecast dredges in U.S. Coastal waters (NMFS, 1999).

Dredging and disposal activities will not occur near spawning and juvenile Atlantic sturgeon and therefore will not pose any impacts. Although unlikely, the only potential for interaction with this species would be adult individuals within, or migrating through, the inlet and the disposal sites. The size and mobility of adult Atlantic sturgeon that would occur in these areas makes it highly unlikely that any adverse impacts will occur. It is therefore determined that the potential impacts to Atlantic sturgeon are insignificant and unlikely to affect this species adversely.

Monitoring activities before, during, and after dredging will be required and must be in conformance with the conditions of this permit in order to reduce impacts to threatened and endangered species.

Shortnose Sturgeon — May affect, not likely to adversely affect. Although it is highly unlikely, adult shortnose sturgeon may be present in areas where dredging would occur under the Applicant's Preferred Alternative. Encounters in or near the dredge site would be most likely to occur in the winter and spring, after spawning and the migrations to feeding areas in downstream estuarine waters (NMFS, 1999). These individuals will be larger than 45 cm in length, which is too large to become entrained by the small dragheads used on the privately-owned dredge that will be built to Corps' special purpose dredge standards. Furthermore, because of their mobility, it is presumed these individuals would be capable of avoiding and out-maneuvering the slow-moving dredges, greatly reducing any chances of collision or interaction with the dredge at the disposal sites. For these reasons, it is determined that the potential impacts to shortnose sturgeon are insignificant and extremely unlikely.

Seabeach Amaranth — No effect. The proposed project will have no effect on Seabeach Amaranth as no work is proposed above NWL.

Whales — May affect, not likely to adversely affect. The North Atlantic right whale is the species of whale with the highest likelihood of being in the vicinity of the dredge activity. All other whale species, including finback whales, are not expected to utilize waters in the immediate vicinity of the proposed project.

Marine mammal observers will be stationed on board dredge(s) to alert crews to take evasive action and suspend work to avoid collisions.

The Applicant will also be required to participate in the Right Whale Early Warning System as well as follow any conditions set forth in the permit and the SARBO that reduce potential impacts. Effects of the proposed project are considered to be insignificant or discountable; therefore, the proposed project may affect, but is not likely to adversely affect, any protected whale species with the potential to occur in the project vicinity.

Sea Turtles — May affect, not likely to adversely affect. It is likely that sea turtles will be in the vicinity during dredging activities. Minimization measures will be followed including on-board sea turtle monitors to reduce the likelihood of lethal take. Small modified-hopper dredges are known to have little to no impact on sea turtles due to their low operating speeds and low draghead suction as stated in the 1999 NMFS Biological Opinion associated with the 2004 FONSI. It is unlikely that an incidental take would occur. Therefore, the proposed project may affect, but is not likely to adversely sea turtles in the near-shore waters within the project boundary. Permit conditions will address avoidance and minimization measures as well as monitoring procedures should a sea turtle be spotted during dredging activities or in the event of a take.

10.1.2 Has another federal agency been identified as the lead agency for complying with Section 7 of the ESA with the Corps designated as a cooperating agency and has that consultation been completed? No

10.1.3 Consultation with either the National Marine Fisheries Service and/or the U.S. Fish and Wildlife Service was initiated and completed as required, for any determinations other than “no effect” (see the attached ORM2 Summary sheet for begin date, end date and closure method of the consultation).

By letter dated March 1, 2019, the USFWS concurred with the Corps’ opinion that this project “may affect, not likely to adversely affect” the West Indian manatee during this project by adhering to permit special conditions. Permit special conditions associated with this permit have been utilized by NMFS on a historical basis to greatly reduce the impacts to threatened and endangered species. Informal consultation with NMFS concluded that the proposed dredge *“is a small modified hopper that does not allow for monitoring of take and is assumed not to result in take due to the small draghead size and low intake velocity”* (email from Ms. Nicole Bonine (NMFS) dated June 27, 2019). In order to minimize any impacts to threatened and endangered species associated with this work, this permit will incorporate conditions from both the SARBO and the 1999 NMFS Biological Opinion to reduce impacts on those species. Based on a review of the above information, the Corps has determined that it has fulfilled its responsibilities under Section 7(a)(2) of the ESA. The documentation of the consultation is incorporated by reference.

10.2 Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Essential Fish Habitat (EFH).

10.2.1 Did the proposed project require review under the Magnuson-Stevens Act? Yes. By letter dated March 8, 2019, the NMFS has no objection to the proposed permit provided the Applicant adheres to the specifications for dredge operation described in the 2004 FONSI.

10.2.2 If yes, EFH species or complexes considered: The proposed project will not adversely affect EFH or HAPC for those species managed by SAFMC and MAFMC. Coordination with NMFS and the North Carolina Division of Marine Fisheries (NCDMF) was conducted and determined that this project as proposed is not likely to adversely affect any resources of concern. Pre-dredge event coordination will continue throughout the life of the project in order to ensure that all parties are aware of any potential fisheries impacts. Additionally, both NMFS and NCDMF will be provided with information from any required project surveys. Via letter dated March 8, 2019, the NMFS stated it had no objection to the project provided Dare County adhered to the 2004 FONSI.

10.2.3 Has another federal agency been identified as the lead agency for complying with the EFH provisions of the Magnuson-Stevens Act with the Corps designated as a cooperating agency and has that consultation been completed? No

10.2.4 Consultation with the National Marine Fisheries Service was initiated and completed as required (see the attached ORM2 Summary sheet for consultation type, begin date, end date and closure method of the consultation). Based on a review of the above information, the Corps has determined that it has fulfilled its responsibilities under EFH provisions of the Magnuson-Stevens Act.

10.3 Section 106 of the National Historic Preservation Act (Section 106): Refer to Section 2.3 for permit area determination.

10.3.1 Known historic properties present? The Corps has reviewed the documentation provided by the agency and determined it is sufficient to confirm Section 106 compliance for this permit authorization, and additional consultation is not necessary.

Effect determination and basis for that determination: By letter dated January 22, 2018, the SHPO provided comments and concerns over three (3) areas that contain the remains of shipwrecks located within the dredging corridor. Special conditions will be added to the permit to ensure these areas are avoided.

10.3.2 Has another federal agency been identified as the lead federal agency for complying with Section 106 of the National Historic Preservation Act with the

Corps designated as a cooperating agency and has that consultation been completed? No

If yes, identify that agency, and whether the undertaking they consulted on included the Corps undertaking(s). Briefly summarize actions taken by the lead federal agency. N/A

10.3.3 Consultation was initiated and completed with the appropriate agencies, tribes and/or other parties for any determinations other than “no potential to cause effects” (see the attached ORM2 Summary sheet for consultation type, begin date, end date and closure method of the consultation). Based on a review of the information above, the Corps has determined that it has fulfilled its responsibilities under Section 106 of the NHPA. Compliance documentation incorporated by reference.

10.4 Tribal Trust Responsibilities

10.4.1 Was government-to-government consultation conducted with Federally-recognized Tribe(s)? No

Provide a description of any consultation (s) conducted including results and how concerns were addressed. There are no federally recognized tribes affected. The Corps has determined that it has fulfilled its tribal trust responsibilities.

10.4.2 Other Tribal including any discussion of Tribal Treaty rights? N/A

10.5 Section 401 of the Clean Water Act – Water Quality Certification (WQC)

10.5.1 Is a Section 401 WQC required, and if so, has the certification been issued, waived or presumed? Yes. An individual water quality certification is required and has been issued by the certifying agency. NC Division of Water Resources, certification number DWR # 20190264, dated April 26, 2019.

10.6 Coastal Zone Management Act (CZMA)

10.6.1 Is a CZMA consistency concurrence required, and if so, has the concurrence been issued, waived or presumed? Yes. An individual CZMA consistency concurrence is required and has been issued by the appropriate agency. NC Division of Coastal Management permit No. 49-19, dated June 24, 2019.

10.7 Wild and Scenic Rivers Act

10.7.1 Is the project located in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system? No

10.8 Effects on Corps Civil Works Projects (33 USC 408)

10.8.1 Does the applicant also require permission under Section 14 of the Rivers and Harbors Act (33 USC 408) because the activity, in whole or in part, would alter, occupy or use a Corps Civil Works project? Yes. The Regulatory Division coordinated closely with the Wilmington District's Section 408 coordinator. It has been determined that the activities authorized do not impair the usefulness of the Corps' navigation project and are not injurious to the public interest.

10.9 Corps Wetland Policy (33 CFR 320.4(b))

10.9.1 Does the project propose to impact wetlands? No

10.9.2 Based on the public interest review herein, the beneficial effects of the project outweigh the detrimental impacts of the project.

10.10 Other (as needed): N/A

11.0 Special Conditions

11.1 Are special conditions required to protect the public interest, ensure effects are not significant and/or ensure compliance of the activity with any of the laws above? Yes

11.2 Required special condition(s)

Special condition(s)::

In accordance with 33 U.S.C. 1341(d), all conditions of the North Carolina Division of Coastal Management Permit # 49-19 and the North Carolina Division of Water Quality 401 Water Quality Certification DWR # 20190264, as well as the **National Park Service Special Use Permit ###** are incorporated as part of the Department of the Army permit. Therefore they are not listed as special conditions.

WORK LIMITS

1. All work authorized by this permit shall be performed in strict compliance with the attached permit plans dated January 8, 2019, which are a part of this permit. The Permittee shall ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Any modification to the attached permit plans must be approved by the U.S. Army Corps of Engineers (Corps) prior to any active construction in waters or wetlands.
2. Except as authorized by this permit or any Corps-approved modification to this permit, no excavation, fill or mechanized land-clearing activities shall take place

at any time in the construction or maintenance of this project, within waters or wetlands. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities connected with this project.

3. The Permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit. A copy of this permit, including all conditions and drawings shall be available at the project site during construction and maintenance of this project.
4. The Permittee shall conduct a quarterly meeting between its representatives, the contractor's representatives and the appropriate U.S. Army Corps of Engineers Project Manager prior to undertaking any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all terms and conditions contained within this Department of the Army permit. The Permittee shall schedule the quarterly meeting for a time frame when the Corps, NCDCM, and NCDWR Project Managers can attend. The Permittee shall invite the Corps, NCDCM, and NCDWR Project Managers a minimum of thirty (30) days in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting. The thirty (30) day requirement can be waived with the concurrence of the Corps.
5. The Permittee shall notify the U.S. Army Corps of Engineers in writing prior to beginning any work authorized by this permit and again upon completion of the work authorized by this permit.
6. Before each dredging event, the Permittee shall conduct a bathymetric survey to determine the location of the natural deep water for the channel. This survey will be coordinated with the Wilmington District Navigation Section, prior to commencement of dredging. All correspondence related to the Wilmington District Navigation Section will be coordinated through the address below:

Mr. Roger Bullock
Chief of Navigation
Wilmington District
U.S. Army Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28403
(910) 251-4822 Office
Roger.D.Bullock@usace.army.mil

7. Prior to undertaking any spoil disposal activities within deep scour holes under

the remaining pilings of the former Herbert C. Bonner Bridge, the Permittee shall conduct a bathymetric survey to determine the depth and exact location of the deep scour holes. The survey must be coordinated with the U.S. Army Corps of Engineers, Wilmington District Washington Field Office, Attn: Josh Pelletier at (910) 251-4605, or josh.r.pelletier@usace.army.mil prior to any disposal event.

8. The Permittee shall comply with all U.S. Coast Guard regulations for dredging operations. The Permittee shall contact Commander, Fifth Coast Guard District at 757-398-6220 or CGD5Waterways@uscg.mil at least 30 days prior to construction to request a notice in the Local Notice to Mariners. The Permittee shall notify the U.S. Army Corps of Engineers, Regulatory Division, Washington Regulatory Field Office, Attn: Mr. Josh Pelletier, 2407 West 5th Street, Washington, North Carolina, 27889, and by telephone at: (910) 251-4605 or email josh.r.pelletier@usace.army.mil when this coordination with the U.S. Coast Guard has commenced.
9. All reports, documentation and correspondence required by the conditions of this permit shall be submitted to the following address: U.S. Army Corps of Engineers, Regulatory Division, Washington Regulatory Field Office, Attn: Mr. Josh Pelletier, 2407 West 5th Street, Washington, North Carolina, 27889, and by telephone at: (910) 251-4605. The Permittee shall reference the following permit number, SAW-2019-00175 on all submittals.
10. Work authorized under this permit shall strictly adhere to the work at Oregon Inlet described in the document entitled *"Finding of No Significant Impact, Use of Government Plant to Dredge in Federally Authorized Navigation Projects in North Carolina, dated September 2004."* Specifically, this permit only authorizes: *"A 14-foot deep by 400-foot wide channel through Oregon Inlet and the ocean bar. An approximate 16,050-foot long portion of the channel from Oregon Inlet to Hell's Gate (12-foot deep by 100-foot wide) and an approximate 2,850-foot long portion of Old House Channel (12-foot deep by 100-foot wide) in Dare County. The nearshore disposal site for material dredged by a hopper dredge is located on the south side of Oregon Inlet, off the north end of Pea Island, and in deep sour holes beneath the Herbert C. Bonner Bridge."*
11. Dredging activities authorized by this permit shall not in any way interfere with those operations of the USACE Civil Works dredging and navigation projects. Specifically, there shall not be any interference with the USACE maintenance dredging of Oregon Inlet or Federal channels in the vicinity of Oregon Inlet.

RELATED LAWS

12. All mechanized equipment will be regularly inspected and maintained to prevent contamination of waters and wetlands from fuels, lubricants, hydraulic fluids, or

other toxic materials. In the event of a spill of petroleum products or any other hazardous waste, the Permittee shall immediately report it to the N.C. Division of Water Quality at (919) 733-3300 or (800) 858-0368 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

CZMA

13. The Permittee shall fully abide by all conditions of the CAMA Major Development #49-19, issued on June 24, 2019, by the North Carolina Division of Coastal Management, which are incorporated herein by reference.

CULTURAL RESOURCES

14. The Permittee shall conduct a comprehensive underwater archeological survey by a qualified archaeologist prior to the dredging of any of the previously “un-dredged areas” identified by the Division of Coastal Management. Potential effects on these resources shall be assessed prior to initiation of any dredging activities within “un-dredged areas” and appropriate no-work zones established, if deemed necessary. Only after the report has been reviewed by the Corps and proper coordination conducted with the Underwater Branch, will dredging in the additional areas be permitted.
15. The Permittee shall avoid the remains of trawlers *Lois Joyce*, *Elizabeth Christine* and the tug *W.G. Townsend* as identified and described in the letter dated January 28, 2019, from the North Carolina Department of Natural and Cultural Resources incorporated herein by reference.
16. If submerged cultural resources are encountered during the operation, the Corps shall be immediately notified so that coordination can be initiated with the Underwater Archeology Branch of the North Carolina Department of Natural and Cultural Resources. In emergency situations, the Permittee shall immediately contact the Underwater Archeology Branch, at telephone (910) 251-7321, so that a full assessment of the artifacts can be made.

PROJECT MAINTENANCE

17. The Permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside the permit area. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).

ENFORCEMENT

18. Violations of these permit conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act shall be reported to the

Corps in writing and by telephone to: Attn: Mr. Josh Pelletier, 2407 West 5th Street, Washington, North Carolina, 27889, and by telephone at: (910) 251-4605, or email josh.r.pelletier@usace.army.mil, within 24 hours of the Permittee's discovery of the violation.

19. The Permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work, will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the waterway to its former conditions. If the Permittee fails to comply with this direction, the Secretary or his representative may restore the waterway, by contract or otherwise, and recover the cost from the Permittee.
20. A representative of the Corps of Engineers will periodically and randomly inspect the work for compliance with these conditions. Deviations from these procedures may result in an administrative financial penalty and/or directive to cease work until the problem is resolved to the satisfaction of the Corps.

ESA

21. The Permittee shall implement all necessary measures to ensure the authorized activity does not kill, injure, capture, harass, or otherwise harm any federally-listed threatened or endangered species. While accomplishing the authorized work, if the Permittee discovers or observes an injured or dead threatened or endangered species, the U.S. Army Corps of Engineers, Wilmington District Washington Field Office, Attn: Josh Pelletier at (910) 251-4605, or josh.r.pelletier@usace.army.mil will be immediately notified to initiate the required Federal coordination.
22. In order to protect the endangered West Indian manatee (*Trichechus manatus*) the Permittee shall implement the U.S. Fish and Wildlife Service's Manatee Guidelines, and strictly adhere to all requirements therein. The guidelines can be found at http://www.fws.gov/nc-es/mammal/manatee_guidelines.pdf.
23. No material will be placed above mean low water (MLW) to avoid impacts to the federally listed Seabeach amaranth (*Amaranthus pumilus*), Piping Plover (*Charadrius melodus*), Red Knot (*Calidris canutus rufa*), Green sea turtle (*Chelonia mydas*), Hawksbill sea turtle (*Eretmochelys imbricata*), Kemp's ridley sea turtle (*Lepidochelys kempii*), Leatherback sea turtle (*Dermochelys coriacea*) and Loggerhead sea turtle (*Caretta caretta*) and their habitat.
24. Information required to be sent to the USFWS must be submitted to the following address:

Mr. Pete Benjamin, Supervisor
Raleigh Field Office

U.S. Fish and Wildlife Service
Post Office Box 33726
Raleigh, North Carolina 27636-3726
(919) 856-4520

25. The contractor is required to participate in the Right Whale Early Warning System to protect North Atlantic right whales. If a right whale or any other species of whale is reported within the area, then the contractor will be required to follow the enclosed NMFS's Southeast Region Vessel Strike Avoidance Measures and Reporting for Mariners (revised February 2008) (Appendix B), except where specific measures below are in conflict, in which case the measures in this Opinion govern (e.g., a speed restriction to a maximum of 10 knots at all times in right whale calving areas [i.e., federally-protected areas off the southeastern U.S. coast designated and implemented for the protection of right whales and their calves during their calving/migration season] for vessels 65 ft. in length or greater). By law, vessels shall maintain a 500-yd buffer between the vessel and any North Atlantic right whale [as required by federal regulation 50 CFR 224.103 (c)].
26. If a sea turtle is observed within 100 yards of construction operations, all appropriate precautions shall be implemented to ensure protection of the species, including cessation of operation if an animal moves within 50 feet of any moving equipment. Additionally, the conditions require avoiding collisions with swimming sea turtles, monitoring of siltation barriers for entanglement, operation at "no wake/idle" speeds in the construction area, and reporting any collision with and/or injury to a sea turtle to U.S. Army Corps of Engineers, Regulatory Division, Washington Regulatory Field Office, Attn: Mr. Josh Pelletier, 2407 West 5th Fifth Street, Washington, North Carolina, 27889, and by telephone at: (910) 251-4605 and Network for Endangered Sea Turtles (N.E.S.T) at (252) 441-8622 or info@nestonline.org.
27. Any take concerning a manatee, sea turtle, sturgeon (shortnose or Atlantic), or whale (Atlantic only); or sighting of any injured or incapacitated manatees, sea turtles, or whales shall be immediately reported to the U.S. Army Corps of Engineers, Wilmington District Washington Field Office, Attn: Mr. Josh Pelletier at (910) 251-4605, or josh.r.pelletier@usace.army.mil as well as U.S Army Corps of Engineers, Wilmington District Environmental Resources Section, Attn: Mrs. Teresa Russell at (910) 251-4725, or Teresa.E.Russell@usace.army.mil. A copy of the incidental take report shall be provided within 24 hours of the incident. The Permittee shall also immediately report any collision with and/or injury to a manatee to the United States Fish and Wildlife Service. If a sea turtle is taken by the dredge (live or dead), the Permittee shall email a PDF version of the incidental take report to NOAA-Fisheries Southeast Region at the following email address within 24 hours of the take: takereport.nmfsser@noaa.gov, and to Wilmington District Project Manager Mr. Josh Pelletier at josh.r.pelletier@usace.army.mil.

EXCAVATION/DREDGING

28. The Permittee shall limit their work so that it does not exceed the scope of work at Oregon Inlet described in the document entitled "*Finding of No Significant Impact, Use of Government Plant to Dredge in Federally Authorized Navigation Projects in North Carolina, dated September 2004,*" as well as the corresponding opinion from National Marine Fisheries Service dated March 9, 1999.
29. Vessels operating under this authorization shall operate at speeds of 1 to 3 knots with draghead size ranging from 2 feet by 2 feet to 2 feet by 3 feet. Draghead pumps will operate at an average of 350-horsepower and will not exceed 400-horsepower.
 - a. The Permittee shall ensure that baskets or screening is installed over the hopper inflow(s) and openings range from 5 inches by 5 inches to 5 inches by 8 inches. The method selected shall depend on the construction of the dredge used and shall be approved by the Corps prior to commencement of dredging. The screening shall provide 100% screening of the hopper inflow(s). The screens and/or baskets shall remain in place throughout the performance of the work.
 - b. The drag head shall be buried a minimum of 6 inches in the sediment at all times. Although the over depth prism is not the required dredging prism, the Permittee shall achieve the required prism by removing the material from the allowable over depth prism.
 - c. The Permittee shall not raise the drag head off the bottom to increase suction. The primary adjustment for providing additional mixing water to the suction line should be through water ports. To ensure that suction velocities do not drop below appropriate levels, the Permittee shall monitor production meters throughout the job and adjust primarily the number and opening sizes of water ports. Water port openings on top of the drag head or on raised standpipes above the drag head shall be screened before they are utilized on the dredging project. If a dredge section includes sandy shoals on one end of tract line and mud sediments on the other end of the tract line, the equipment shall be adjusted to eliminate drag head pick-ups to clear the suction line.
 - d. During turning operations the pumps must either be shut off or reduced in speed to the point where no suction velocity or vacuum exists.
 - e. When initiating dredging, suction through the drag heads shall be allowed just long enough to prime the pumps, and then the drag heads must be placed firmly on the bottom. When lifting the drag heads from the bottom, suction through the drag heads shall be allowed just long enough to clear

the lines, and then must cease. Pumping water through the drag heads shall cease while maneuvering or during travel to/from the disposal area. If the required dredging section includes compacted fine sands or stiff clays, a properly configured arrangement of teeth may enhance dredge efficiency, which reduces total dredging hours, and "turtle takes." The operation of a drag head with teeth must be monitored for each dredged section to ensure that excessive material is not forced into the suction line. When excess high-density material enters the suction line, suction velocities drop to extremely low levels causing conditions for plugging of the suction pipe. Dredge operators should configure and operate their equipment to eliminate all low-level suction velocities. Pipe plugging cannot be corrected by raising the drag head off the bottom. Arrangements of teeth and/or the reconfiguration of teeth should be made during the dredging process to optimize the suction velocities

30. The Permittee shall implement the DQM system during dredging and dredged material disposal. The Permittee's DQM system must be certified by the DQM Support Center within one calendar year prior to the initiation of the dredging/disposal. Questions regarding certification should be addressed to the DQM Support Center at 877-840-8024. Additional information about the DQM System can be found at <http://dqm.usace.army.mil/>. The Permittee is responsible for ensuring that the DQM system is operational throughout the dredging and disposal project and that project data are submitted in accordance with the specifications provided at the aforementioned website. In the event the DQM system becomes inoperable, dredging activities will cease and the Permittee must contact the U.S. Army Corps of Engineers, Regulatory Division, Washington Regulatory Field Office, Attn: Mr. Josh Pelletier, 2407 West 5th Fifth Street, Washington, North Carolina, 27889, and by telephone at: (910) 251-4605. Dredging shall not commence until the system has been repaired and verified by the DQM support center and the Regulatory Project Manager notified. The data collected by the DQM system shall, upon request, be made available to the Regulatory Division of the U.S. Army Corps of Engineers, Wilmington District.
31. All dredged material excavated by a special purpose dredge shall be placed in the approved nearshore disposal site off Pea Island in -10MLW to -14MLW depths as well as deep scour holes around Bonner Bridge as depicted in the attached plan.
32. A project report summarizing the results of the dredging and the sea turtle take (if any) must be submitted to USACE within 30 working days of completion. Reports shall contain information on project location, start-up and completion dates, cubic yards of material dredged, problems encountered, incidental takings (include photographs, if available) and sightings of protected species, mitigating actions taken (if relocation trawling, the number and species of turtles relocated), screening type (inflow, overflow) utilized, daily water temperatures, name of dredge, names of endangered species observers, percent observer coverage,

and any other information the BOEM and/or contractor deems relevant. This report must be provided to NMFS's Protected Resources Division and notification of take shall be provided to NMFS at the following email address within 24 hours; takereport.nmfsser@noaa.gov.

33. Upon removal of sea turtle and/or parts from the draghead or screening, observers shall take photographs as to sufficiently document major characteristics of the turtle or turtle parts including but not limited to dorsal, ventral, anterior, and posterior views. For all photographs taken, a backdrop shall be prepared to document the dredge name, observer company name, contract title, time, date, species, load number, location of dredging, and specific location taken (draghead, screening, etc.). Carcass/turtle parts shall also be scanned for flipper and Passive Integrated Transponder (PIT) tags. Any identified tags shall be recorded on the "Sea Turtle Incidental Take Form" that is included in the "Endangered Species Observer Program Forms" located on the web site indicated in Special Condition number 36 below. Turtle parts which cannot be positively identified to species, on board the dredge or barge(s) shall be preserved by the observer(s) for later identification. A tissue sample shall be collected from any lethally taken sea turtle and submitted under the process stated in the "Protocol for Collecting Tissue Samples from Turtles for Genetic Analysis" found in the CONSTRUCTION FORMS AND DETAILS below. All genetic samples collected shall be submitted to NMFS within 30-days of collection and verification of submittal to NMFS shall be provided to the U.S. Army Corps of Engineers, Wilmington District Project Manager. After all data collection is complete, the sea turtle parts shall be placed in plastic bags, labeled as to the time, date, and dredged reach of collection, kept frozen and transported to the Sea Turtle Hospital, Surf City, North Carolina. If no local facility is capable of receiving the sea turtle/parts, they shall be marked (spray paint works well), weighted down and disposed of in accordance with the direction of the Wilmington District Project Manager.
34. The Permittee shall provide a digital camera, with an image resolution capability of at least 300 dpi, in order to photographically report all incidental takes, without regard to species, during dredging operations. Immediately following the incidental take of any threatened or endangered species, images shall be provided, via email, CD or DVD to the Corps in .JPG or .TIF format and shall accompany incidental take forms. The nature of findings shall be fully described in the incidental take forms including references to photographs.
35. The Permittee shall maintain a log detailing all incidents, including sightings, collisions with, injuries, or killing of manatees, sea turtles, sturgeon (Shortnose or Atlantic), or whales occurring during the contract period. The data shall be recorded on forms available on the website as indicated in Special Condition number 35 below. All data in original form shall be forwarded directly to the Wilmington District within 10 days of collection. Following project completion, a report summarizing the above incidents and sightings shall be submitted to:

- a. U.S Army Corps of Engineers, Wilmington District
Washington Regulatory Field Office
2407 West 5th Street
Washington, North Carolina, 27889
 - b. Environmental Resources Branch
U.S. Army Corps of Engineers, Wilmington District
69 Darlington Avenue
Wilmington, North Carolina, 28403
 - c. National Marine Fisheries Service
Protect Species Management Branch
263 13th Avenue South
St. Petersburg, Florida, 33701
 - d. North Carolina Wildlife Resources Commission
Habitat Conservation Program
943 Washington Square Mall
Washington, North Carolina, 27889
 - e. North Carolina Wildlife Resources Commission
1507 Ann Street
Beaufort, North Carolina, 28516
36. In order to avoid use of outdated forms, the Permittee is directed to the following website for forms and attachments required under this permit:
<https://dqm.usace.army.mil/odess/#/home>

NAVIGATION

37. This permit does not authorize the interference with any existing or proposed Federal project, and the Permittee will not be entitled to compensation for damage or injury to the authorized structure or work which may be caused from existing or future operations undertaken by the United States in the public interest.
38. No attempt will be made by the Permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the authorized work. Use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States.
39. The Permittee must install and maintain, at its expense, any signal lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, on all authorized facilities constructed within navigable waters of the United States.

40. The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the Permittee will be required, upon due notice from the U.S. Army Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal, relocation, or alteration.

2.0 Findings and Determinations

- 12.1 Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct or indirect emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.
- 12.2 Presidential Executive Orders (EO):
 - 12.2.1 EO 13175, Consultation with Indian Tribes, Alaska Natives, and Native Hawaiians: This action has no substantial effect on one or more Indian tribes, Alaska or Hawaiian natives.
 - 12.2.2 EO 11988, Floodplain Management: Alternatives to location within the floodplain, minimization and compensatory mitigation of the effects were considered above.
 - 12.2.3 EO 12898, Environmental Justice: The Corps has determined that the proposed project would not use methods or practices that discriminate on the basis of race, color or national origin, nor would it have a disproportionate effect on minority or low-income communities.
 - 12.2.4 EO 13112, Invasive Species: There are no invasive species issues associated with this project.
 - 12.2.5 EO 13212 and EO 13302, Energy Supply and Availability: The proposal is not one that will increase the production, transmission, or conservation of energy, or strengthen pipeline safety.
- 12.3 Findings of No Significant Impact: Having reviewed the information provided by the applicant and all interested parties and an assessment of the environmental

impacts, I find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an environmental impact statement will not be required.

The District has determined that the action described in this EA is not a major federal action significantly affecting the quality of the human environment. This determination is supported by several factors. The project is located within the confines of the Federal project authorized by the United States Congress in 1950. USACE Civil Works has conducted extensive maintenance dredging of Oregon Inlet and connecting channels since its authorization. Because of the lack of federal funding and dredge availability, the Applicant elected to pursue a similar project with local funding and authorization through the Wilmington District's Regulatory Division. The scope of work as well as the dredge specifications will comply with the Corps 2004 FONSI regarding the year-round maintenance dredging of Oregon Inlet. In addition to considering historical documentation, the District has completed an independent review of the project and has taken into account the responses to the solicitation of the public and agency comments.

- 12.4 Compliance with the Section 404(b)(1) Guidelines: Having completed the evaluation above, I have determined that the proposed discharge complies with the Guidelines, with the inclusion of the appropriate and practicable special conditions to minimize pollution or adverse effects to the affected ecosystem.
- 12.5 Public interest determination: Having reviewed and considered the information above, I find that the proposed project is not contrary to the public interest.

PREPARED BY:

Josh Pelletier, Project Manager

Date: _____

REVIEWED BY:

David Lekson, Field Office Chief

Date: _____

APPROVED BY:

Scott McLendon, Division Chief

Date: _____

DRAFT