FINDING OF NO SIGNIFICANT IMPACT

WOLF TRAP ALTERNATE OPEN WATER PLACEMENT SITE NORTHERN EXTENSION ENVIRONMENTAL ASSESSMENT VIRGINIA WATERS OF THE CHESAPEAKE BAY

The U.S. Army Corps of Engineers, Baltimore District (Corps) has conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. The Environmental Assessment (EA) dated 18 December 2019, for the Wolf Trap Alternate Open Water Placement Site Northern Extension (WTAPSNE) addresses the need to provide a safe, reliable, and efficient channel to maintain waterborne commerce to and from the Port of Baltimore.

The Final EA, incorporated herein by reference, evaluated various alternatives that would provide a cost-effective, environmentally-acceptable placement site for dredged material in the lower Chesapeake Bay. The recommended plan is WTAPSNE and includes:

- Establishing an extension of the Wolf Trap Alternate Open Water Placement Site (WTAPS) to the north, increasing the size of the placement site by approximately 3,900 acres.
- Approximately 2.6 million cubic yards (mcy) of dredged material from operation and maintenance of the York Spit Channel would be placed into quadrant 1 of cell NE-6 in WTAPSNE during the initial placement event that is expected to begin in the winter of 2020. After initial placement into WTAPSNE, it is anticipated that approximately 1.5 mcy of dredged material from the York Spit Channel would be placed into the WTAPSNE approximately every 4 years, or until another alternate placement site or method is identified, approved, and implemented.
- WTAPSNE would serve as an open water placement site for dredged material primarily from the York Spit Channel, but may also be used as a placement site for other dredging projects in the lower Chesapeake Bay pending evaluation.
- The proposed action does not include any changes to or consideration of the ongoing maintenance dredging activities or any other actions beyond the establishment of the placement site extension itself.

In addition to a "no action" plan, two alternatives were evaluated. The alternatives included an extension of the Wolf Trap Alternate Open Water Placement Site (WTAPS) and deferred maintenance dredging of the York Spit Channel. Section 6.0 of the EA discusses the formulation and selection of alternatives.

The potential effects of the no-action plan and the recommended plan were evaluated, as appropriate. A summary assessment of the potential effects of the recommended plan are listed in Table 1:

Table 1: Summary of Potential Effects of the Recommended Plan

	Insignificant effects	Insignificant effects as a result of mitigation	Resource unaffected by action
Aesthetics	☐	☐	☒
Air Quality	☒	☐	☐
Bathymetry and Physiography	☒	☐	☐
Benthic Community	☒	☐	☐
Blue Crab	☒	☐	☐
Climate	☐	☐	☒
Cultural Resources	☐	☒	☐
Essential Fish Habitat	☒	☐	☐
Finfish	☒	☐	☐
Fisheries	☒	☐	☐
Geology	☒	☐	☐
Hazardous, Toxic & Radioactive Waste	☐	☐	☒
Hydrology and Water Quality	☒	☐	☐
Water Use	☐	☐	☒
Navigation	☒	☐	☐
Noise	☒	☐	☐
Recreation	☒	☐	☐
Socio-economics/Environmental Justice	☒	☐	☐
Submerged Aquatic Vegetation and Oysters	☐	☐	☒
Threatened and Endangered Species	☒	☐	☐
Tribal Trust Resources	☐	☐	☒
Wild and Scenic Rivers	☐	☐	☒

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the recommended plan. Best management practices (BMPs) as detailed in the EA will be implemented, if appropriate, to minimize impacts.

Available data indicate that WTAPS, particularly the southern portion, supports a high abundance of overwintering female blue crab. The recommended plan would be environmentally preferable compared to the No-Action Alternative, as it would reduce the likelihood of adverse impacts to blue crab by making additional placement areas available, including the deeper, muddy channel, which are usually avoided as an overwintering habitat by blue crab. Refer to Sections 7.5.5 and 8.5.5 in the EA for a discussion on blue crab.

To avoid/minimize adverse effects to Endangered Species Act (ESA)-listed sea turtles, the Corps makes every effort to avoid dredging the York Spit Channel from September 1 through November 14, of any year. Therefore, if dredging does not occur during this time period, dredged material placement at the proposed action area would also not occur. Furthermore, the Corps generally seeks to perform this work in the winter and early spring, subject to availability of

dredging contractors. Avoiding dredging and placement during this time period would also help to avoid and minimize effects to sandbar shark habitat area of particular concern used for pupping and nursery activities (occurring from May 1 to October 30).

No compensatory mitigation is required as part of the recommended plan.

Public review of the draft EA and FONSI was completed on 18 August 2019. An additional public comment period that provided the opportunity to request a public hearing was completed on 28 September 2019. No comments were received during the public review periods. A 60-day state and agency review of the Final EA was completed on 17 September 2019.

Pursuant to section 7 of the ESA of 1973, as amended, the National Marine Fisheries Service (NMFS) issued a biological opinion, dated 5 October 2018, which concluded that operation and maintenance of the lower Chesapeake Bay Channels may adversely affect, but is not likely to jeopardize the continued existence of any distinct population segment (DPS) of Atlantic sturgeon, Kemp's ridley or green sea turtles or the Northwest Atlantic DPS of loggerhead sea turtles, and is not likely to adversely affect leatherback sea turtles, hawksbill sea turtles, shortnose sturgeon, fin whales, sei whales, blue whale, sperm whales, and North Atlantic right whales. NMFS concerns focus principally on dredging, not placement. The Corps determined that the recommended plan would not cause effects that are different or in addition to those considered in the 5 October 2018 biological opinion, and that re-initiation with NMFS was not warranted. NMFS concurred with the Corps' determination on 6 May 2019.

Pursuant to section 106 of the National Historic Preservation Act of 1966, as amended, the U.S. Army Corps of Engineers determined that historic properties may be adversely affected by the recommended plan. The Corps and the Virginia State Historic Preservation Office, as well as two concurring parties, entered into a Programmatic Agreement (PA) dated 11 December 2019. All terms and conditions resulting from the agreement shall be implemented in order to minimize adverse impacts to historic properties.

Pursuant to the Clean Water Act of 1972, as amended, the discharge of dredged or fill material associated with the recommended plan has been found to be compliant with section 404(b)(1) Guidelines (40 CFR 230). The Clean Water Act Section 404(b)(1) Guidelines evaluation is found in Appendix D of the EA.

A water quality certification (WQC) pursuant to section 401 of the Clean Water Act was obtained from the Virginia Department of Environmental Quality. In a letter dated 17 September 2019, the Commonwealth of Virginia stated that the section 401 WQC requirements were met through the coastal zone management (CZM) conditional consistency determination provided by the Virginia Department of Environmental Quality (VADEQ) on 17 September 2019. A Water Protection Permit and section 401 WQC issued by VADEQ in 2013 authorizes use of WTAPS, and is valid through October 2028. All conditions of the water quality certification will be implemented in order to minimize adverse impacts to water quality.

A determination of consistency with the Commonwealth of Virginia CZM program pursuant to the Coastal Zone Management Act of 1972 was obtained from the VADEQ. In a letter dated 17 September 2019, the Commonwealth of Virginia stated that the recommended plan appears to be conditionally consistent with state CZM plan. All conditions of the consistency determination shall be implemented in order to minimize adverse impacts to the coastal zone.

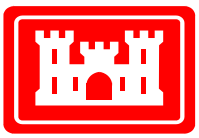
Pursuant to the Magnuson-Stevens Act, the Corps determined that the recommended plan will result in minor, temporary adverse impacts to Essential Fish Habitat (EFH). The Corps submitted a draft EFH Assessment to NMFS on 5 April 2019 and a revised EFH Assessment on 20 July 2019. NMFS concurred with the Corps' determination on 24 September 2019.

All applicable environmental laws have been considered and coordination with appropriate agencies and officials has been completed.

Technical, environmental, and cost effectiveness criteria used in the formulation of alternative plans were those specified in the Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. All applicable laws, executive orders, regulations, and local government plans were considered in evaluation of alternatives. Based on this report, the reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination that the recommended plan would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

14 JAN 20
Date

John T. Litz, PMP
Colonel, U.S. Army
Commander and District Engineer



US Army Corps
of Engineers
Baltimore District

FINAL ENVIRONMENTAL ASSESSMENT

WOLF TRAP ALTERNATE OPEN WATER PLACEMENT SITE NORTHERN EXTENSION

VIRGINIA WATERS OF THE CHESAPEAKE BAY

December 18, 2019

Prepared by: **U.S. Army Corps of Engineers, Baltimore District**
2 Hopkins Plaza
Baltimore, Maryland 21201

WOLF TRAP ALTERNATE OPEN WATER PLACEMENT SITE
NORTHERN EXTENSION
FINAL ENVIRONMENTAL ASSESSMENT
December 18, 2019

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1.0 PROJECT BACKGROUND

The U.S. Army Corps of Engineers (USACE), Baltimore District, is responsible for maintaining the Baltimore Harbor and Channels 50-Foot Project (50-Foot Project) to allow large, deep-draft commercial shipping vessels to safely navigate the Chesapeake Bay to and from Baltimore Harbor. The 50-Foot Project was authorized in Section 101 of the River and Harbor Act of 1970 and provides for a 50-foot-deep main shipping channel that extends from the Virginia Capes to Fort McHenry in Baltimore Harbor, Maryland, and a series of branch channels that provide access to various public and private terminals serving the Port of Baltimore. The Maryland Port Administration (MPA) is the non-federal sponsor for the 50-Foot Project. For a comprehensive overview of the Baltimore Harbor and Channels Project, please refer to the 2017 Baltimore Harbor and Channels Dredged Material Management Plan Update (DMMP) (USACE, 2017a).

The York Spit Channel is part of the 50-Foot Project's Chesapeake Bay Approach Channels in Virginia. This channel is located near the center of the Bay, east of the York River Entrance Channel and north of the Chesapeake Bay Bridge Tunnel (Figure 1). The York Spit Channel is approximately 18.4 nautical miles (nm) long and maintained at 800 feet (ft) wide and 50 ft mean lower low water (MLLW). The channel is designed to accommodate vessels in the Ultra-Post Panamax class that routinely call on the Port of Baltimore. This vessel class has a maximum length overall of 1,220 ft, a beam of 161 ft, and a loaded draft of 49 ft. The York Spit Channel undergoes periodic maintenance dredging (typically every 4 years) and each maintenance cycle generates an average of 1.5 million cubic yards (mcy) of material. The channel was last dredged in 2015. To minimize adverse impacts to sea turtles, USACE makes every effort to avoid dredging in the York Spit Channel from September 1 through November 14 in accordance with the National Marine Fisheries Service (NMFS) 2018 Biological Opinion (F/NER/2018/14816) (NOAA, 2018a). Environmental effects resulting from maintenance dredging of the York Spit Channel are discussed in the 1981 General Design Memorandum (GDM) and Environmental Impact Statement (EIS) (USACE, 1981) and in the 1987 Supplemental Information Report #2 to the 1981 GDM and EIS (USACE, 1987). These documents are incorporated by reference, and not further discussed herein.

The authorized placement site for material dredged from the York Spit Channel is the Wolf Trap Alternate Open Water Placement Site (WTAPS)[1]. Environmental effects from placement of dredged material in WTAPS were evaluated in the 1987 Supplemental Information Report #2 to the 1981 General Design Memorandum (GDM) and Environmental Impact Statement (EIS) (USACE, 1987), and in the 2005 Baltimore Harbor and Channels (Maryland and Virginia) DMMP and Final Tiered EIS (USACE, 2005). The WTAPS covers approximately 2,300 acres and is

[1] As a point of clarification, the *existing* dredged material placement site, WTAPS, is termed "alternate" because it superseded a historic placement site further to the east called the Wolf Trap Primary Placement Site. That Wolf Trap Primary Placement Site is shown on the National Oceanic and Atmospheric Administration (NOAA) navigation charts, but has been inactive for decades.

located approximately 5 miles east of New Point Comfort and south of Wolf Trap Light, east of Mathews County, Virginia between the Piankatank River and Mobjack Bay. The USACE, Baltimore District has been placing dredged material from the York Spit Channel into WTAPS since the late 1980s. The USACE, Norfolk District has also placed dredged material from the York River Entrance Channel and the Wormley Creek Channel into WTAPS (Figure 1). The most recent placement event in WTAPS occurred in 2017 for placement of approximately 59,000 cubic yards (cy) of dredged material from the Wormley Creek Channel (Table 1). At this time, there are no future plans to place dredged material from the York River Entrance Channel or the Wormley Creek Channel into WTAPS. The remaining capacity of WTAPS is approximately 40 mcy, which assumes placement of dredged material within the site boundaries up to an approximate depth of -30 ft MLLW.

Table 1. Placement history in the Wolf Trap Alternate Open Water Placement Site from 1998 to 2017.

Year	Source Channel	Quantity (cubic yards)	USACE District
1998	York Spit	371K	Baltimore
1998/1999	York River Entrance	1.224M	Norfolk
2000	Wormley Creek	21K	Norfolk
2002	York Spit	1.3M	Baltimore
2003/2004	York River Entrance	380K	Norfolk
2004	York Spit	327K	Baltimore
2007	York Spit	500K	Baltimore
2009	York Spit	375K	Baltimore
2015	York Spit	1.5M	Baltimore
2017	Wormley Creek	59K	Norfolk

2.0 PROPOSED ACTION

The proposed action would establish an extension of WTAPS to the north, increasing the size of the placement site by approximately 3,900 acres, and is herein referred to as the "WTAPS Northern Extension" (WTAPSNE) (Figures 2-4). The WTAPSNE would serve as an open water placement site for dredged material primarily from the York Spit Channel, but may also be used as a placement site for other dredging projects in the lower Chesapeake Bay pending evaluation. At this time, there are no plans to place dredged material from the York River Entrance Channel or the Wormley Creek Channel into WTAPSNE.

The WTAPSNE has been recommended by agencies of the Commonwealth of Virginia as an alternative to the currently-used WTAPS due to the potential for a high abundance of female blue crab to overwinter in the southern portion of WTAPS. Coordinates for WTAPSNE were provided by the Commonwealth. Water depths shallower than in the proposed northern expansion site (which would govern placement capacity) and existing usage (deep draft anchorage and presence of Cape Charles Harbor channel) would likely rule out placing in other directions (east, south or west of WTAPS). Blue crab winter dredge survey data collected by the Virginia Institute of Marine Science (VIMS) between 2009 and 2016 indicate that WTAPSNE provides less suitable habitat for

overwintering female blue crab than WTAPS (Lipcius & Knick, 2016 (Appendix F)). Placement of dredged material into either WTAPS or WTAPSNE while female crab are not overwintering (generally from early April to mid-November) presents a higher risk of adverse impacts to sea turtles. The increased risk is not related to the placement site, but to the use of hopper dredges during times of year when the water is warmer. Sea turtles are not present in the Chesapeake Bay during the coldest winter months (NOAA, 2018a).

The proposed action does not include any changes to the historic maintenance dredging activities. The only change to the project is the proposed use of the placement site extension. Impacts from maintenance dredging activities were evaluated in the EIS for the 2005 Baltimore Harbor and Channels (Maryland and Virginia) DMMP and other previous National Environmental Policy Act (NEPA) documents.

The capacity of WTAPSNE is over 30 mcy, which assumes placement of dredged material within the site boundaries up to an approximate depth of -30 ft MLLW. Approximately 2.6 mcy of dredged material from operation and maintenance (O&M) of the York Spit Channel would be placed into quadrant 1 of cell NE-6 in WTAPSNE (Figure 4) during the initial placement event that is expected to begin in the winter of 2020. After initial placement into WTAPSNE, it is anticipated that approximately 1.5 mcy of dredged material from the York Spit Channel would be placed into the site approximately every 4 years, or until another alternate placement site or method is identified, approved, and implemented. Each dredging cycle and the associated placement activities (mobilization to demobilization of the dredging operation) lasts for approximately 4½ months. Maintenance dredging would be allowed 24 hours per day and 7 days per week. Based on previous maintenance dredging, it is expected that approximately 15,000 cubic yards would be dredged per day, resulting in 2 to 5 loads of dredged material being placed at WTAPSNE per day. The USACE would make every effort to avoid placement into WTAPSNE during the dredge closure period for sea turtles, from September 1 through November 14.

Dredged material would be placed into WTAPSNE using a hopper dredge because they are better suited than other types of dredge vessels for maintaining the York Spit Channel. The volume and frequency of dredged material placement events during maintenance dredging is a function of the rate of dredging production, the number of hopper vessels in use, and their size, speed and capacity. Hopper dredge capacity is expected to range from 3,600 to 8,600 cy depending on the dredging contractor used. Depending on the amount of material dredged from the York Spit Channel during one maintenance dredging cycle, the thickness of the material that would be deposited in one cycle would range from 2 inches to 2 ft thick.

The dredging contractors open the hopper of hopper dredges while they are moving to assist in spreading the material. The hopper operators attempt to slowly release material, but the process is difficult to control and may take 5 to 10 minutes to completely empty, with about 75 percent or more of the material discharged within the first minute. If significant mounds are formed during placement, or if placement accumulates above the allowable depth, the contractor is required to drag the area to make the bottom more uniform. The USACE considered requiring the contractor to smooth all deposits to a roughly uniform thickness, but reworking the sediments in this way would be extremely costly, time consuming and likely ineffective.

A Phase I archaeological survey identified ten targets within WTAPSNE that could represent historic properties. Cells NE-1, NE-2, NE-3, and NE-5 had one target each within their boundaries. One of the targets was identified as the *Polynia*, a steam yacht later converted to a barge that sank in 1917. This target is immediately adjacent to Cell NE-5. The remaining five targets are located within the buffer area outside the placement cells. Section 7.0 discusses the historic and cultural resources of the project action area in greater detail.

The USACE is planning to only place dredged material in Cell NE-6 since this cell does not contain any historic properties. For future placement cycles that would place material in cells that contain potential historic properties, USACE developed a Programmatic Agreement (PA) in consultation with the Virginia Department of Historic Resources (VADHR). The PA addresses procedures for evaluating the project's effects to historic properties in future placement cycles outside of Cell NE-6. The PA was executed with VADHR on December 11, 2019, and is located in Appendix E.

A DMMP update process for the Virginia Channels will be initiated in 2020. The DMMP framework is a consistent and logical procedure by which dredged material management alternatives can be identified, evaluated, screened, and recommended so that dredged material placement operations are conducted in a timely, environmentally sensitive, and cost-effective manner. Any consideration of future placement options will include opportunities for the public, stakeholders, and agencies to provide their ideas and concerns for material placement during a scoping period and opportunities to comment on the draft management plan. Additional study and design may be necessary at the conclusion of the DMMP process in order to implement the recommended placement plan.

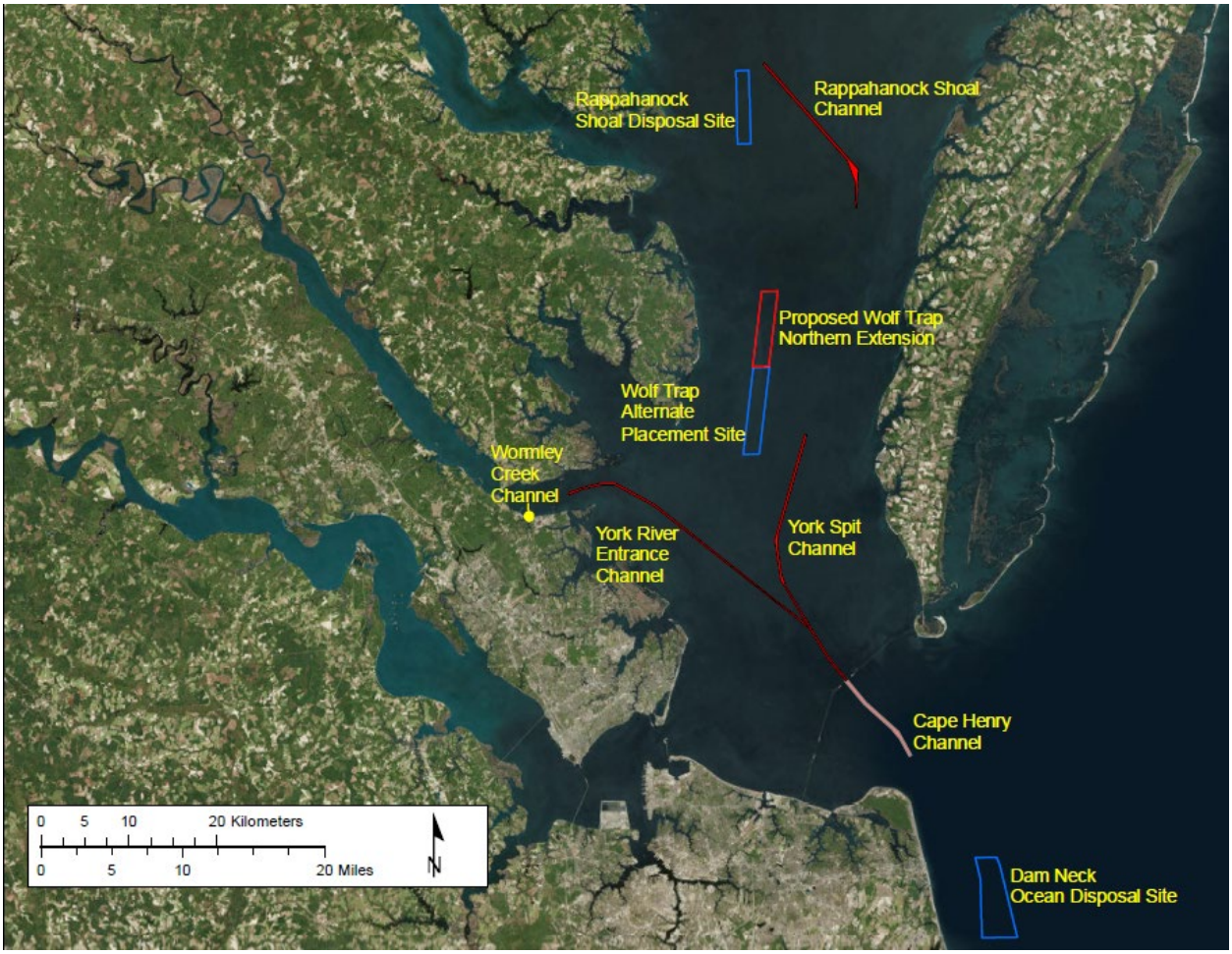

Figure 1. Map of the Baltimore Harbor and Channels Project Lower Bay Channels and Open Water Placement Sites and the York River Entrance and Wormley Creek Channels.

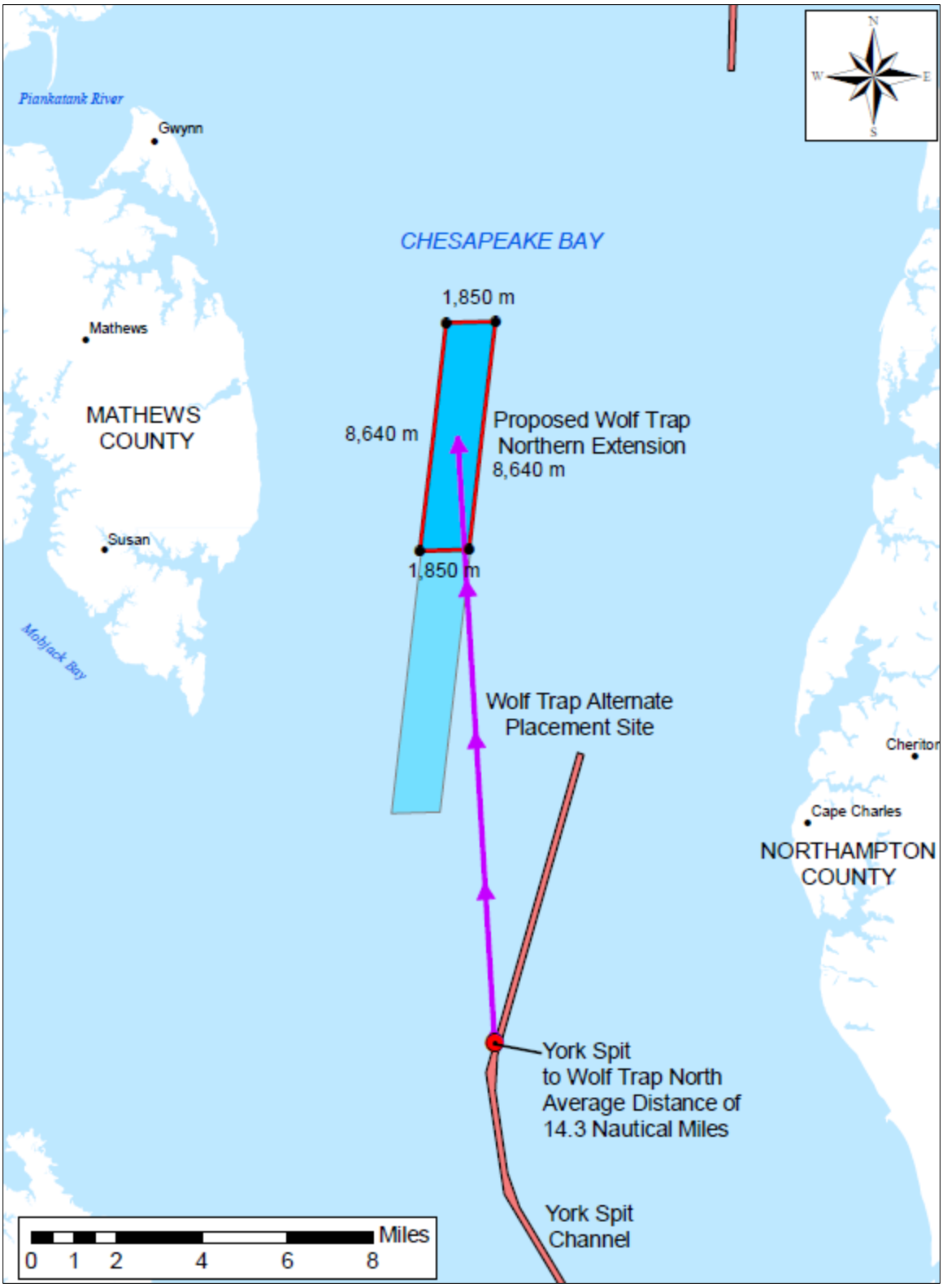

Figure 2. Dimensions of the Proposed Wolf Trap Alternate Open Water Placement Site Northern Extension.

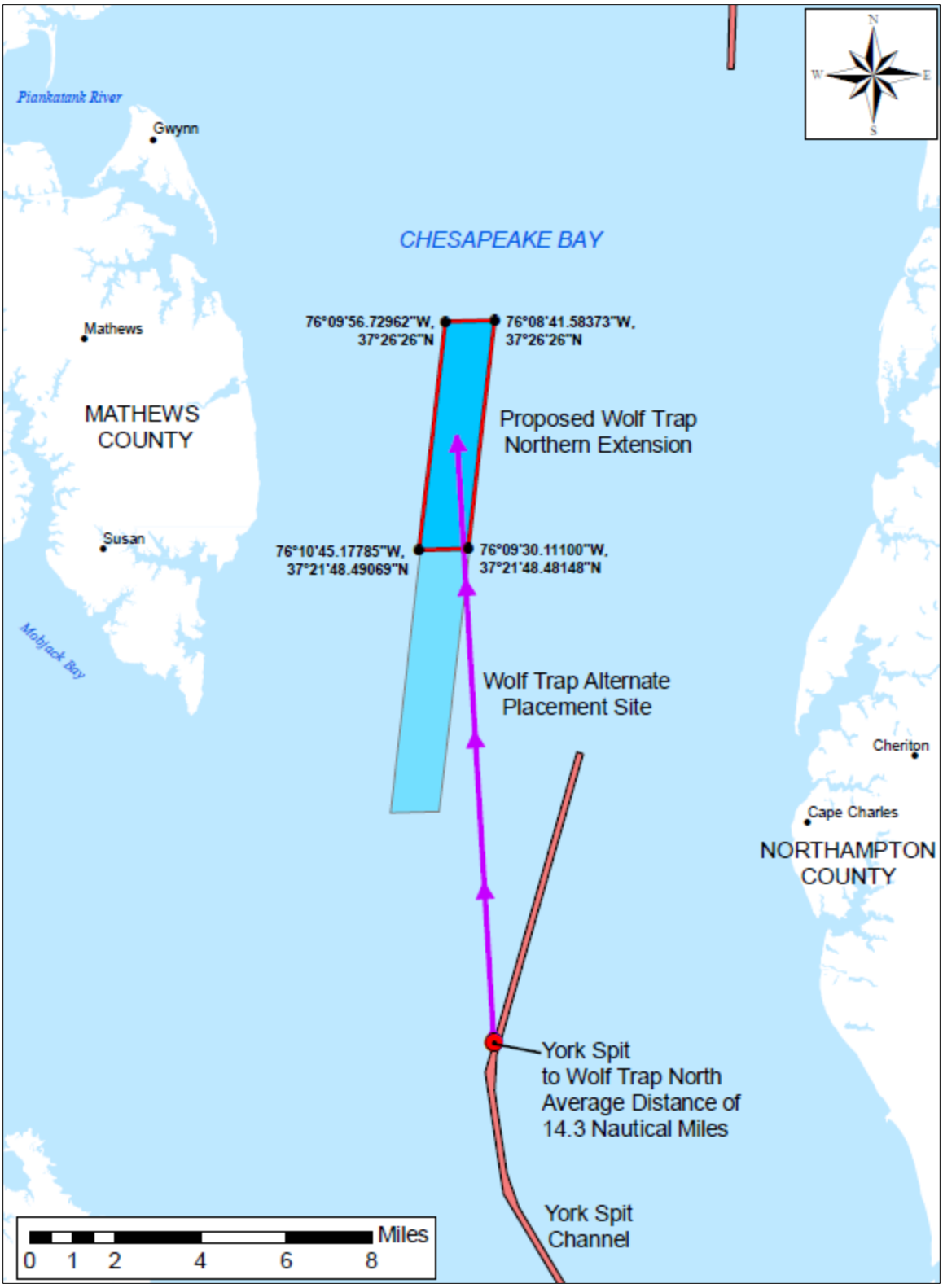

Figure 3. Coordinates of the proposed Wolf Trap Alternate Open Water Placement Site Northern Extension

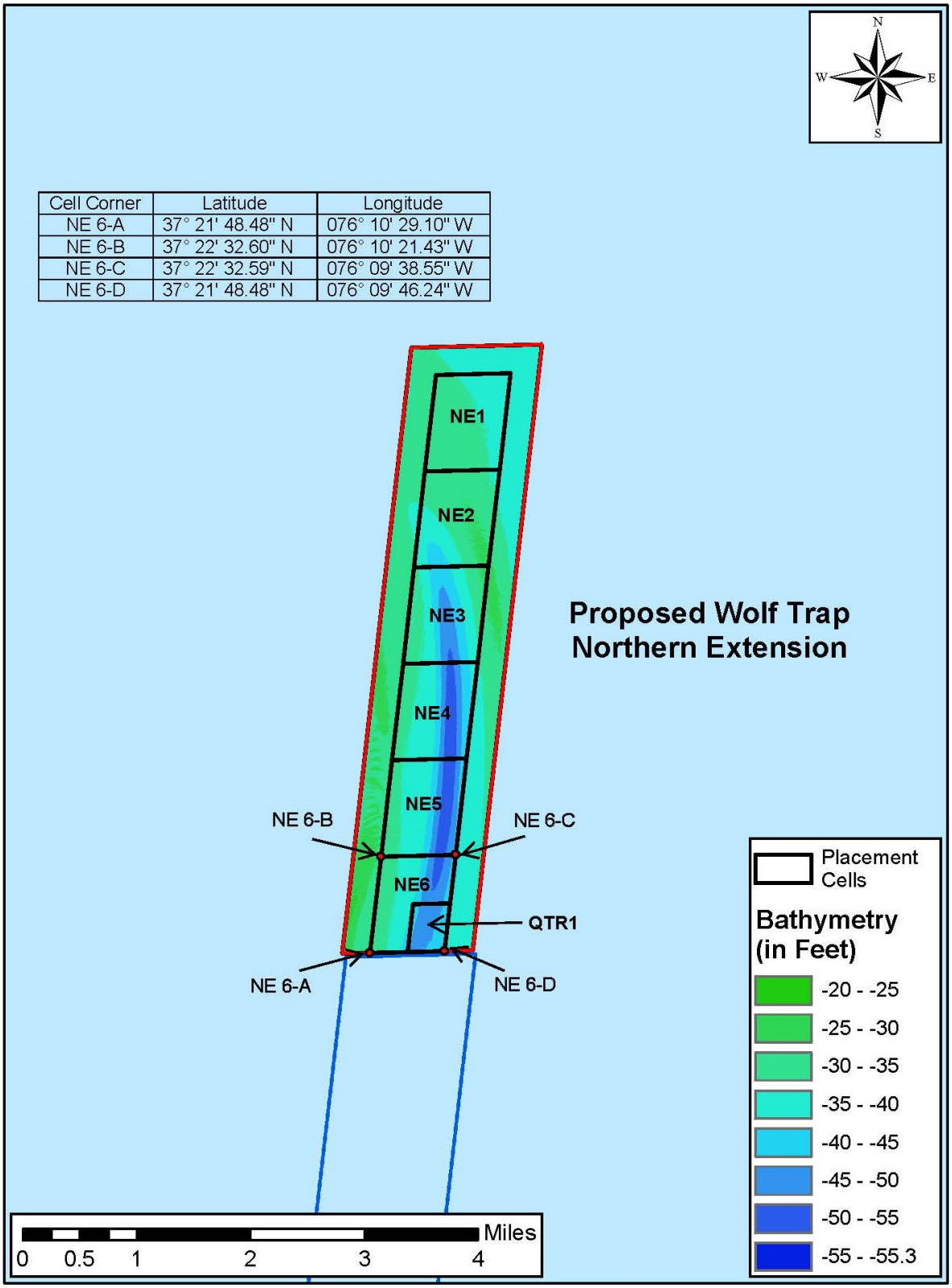

Figure 4. Placement Cells of the Proposed Wolf Trap Alternate Open Water Placement Site Northern Extension.

3.0 PURPOSE AND NEED

The purpose of the proposed action is to provide a cost-effective, environmentally-acceptable dredged material placement site that minimizes adverse impacts to overwintering female blue crab in response to a recommendation by agencies of the Commonwealth of Virginia. The proposed action is needed to provide safe, reliable, and efficient channels to maintain waterborne commerce and national defense.

4.0 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

This document is intended to comply with NEPA of 1969, as amended, and the regulations for implementing NEPA promulgated by the Council on Environmental Quality (CEQ) (40 CFR 1500-1508) and USACE (33 CFR 230); USACE guidance promulgated by 33 C.F.R. §§ 335 – 338 for USACE dredging projects that involve the discharge of dredged material into waters of the U.S.; as well as the federal statutes and executive orders listed in Table 8.

The WTAPSNE is located east of Mathews County, Virginia in the Virginia waters of the Chesapeake Bay between the Piankatank River and Mobjack Bay. The WTAPSNE has been recommended by agencies of the Commonwealth of Virginia as an alternative to the currently-used WTAPS due to the potential for a high abundance of female blue crab to overwinter in the southern portion of WTAPS.

Resources that may be affected by the proposed action include fisheries, cultural resources, and fish and wildlife resources including threatened and endangered species, finfish, essential fish habitat, the benthic community, and blue crab. Effects to these resources are evaluated in Section 8.0. SAV and wetlands are not found in the proposed action area and are not evaluated in this EA.

5.0 AGENCY AND TRIBAL COORDINATION AND PUBLIC INVOLVEMENT

In February and April of 2019, USACE sent coordination letters to the following agencies soliciting comments on the proposed action: U.S. Environmental Protection Agency (USEPA); U.S. Fish and Wildlife Service (USFWS); NOAA NMFS; Virginia Department of Environmental Quality (VADEQ); Virginia Marine Resources Commission (VMRC); Virginia Department of Conservation and Recreation (VADCR), Virginia Department of Game and Inland Fisheries (VADGIF); VIMS; VADHR; Pamunkey Indian Tribe, and Delaware Nation. The coordination letters sent by Baltimore District and comments received from various agencies and tribal nations are located in Appendix A.

Consultation with NOAA NMFS and USFWS under the Endangered Species Act and the Magnuson-Stevens Act is documented in Appendix B: Endangered Species Act Coordination and Appendix C: Essential Fish Habitat Assessment.

A public notice was issued on July 19, 2019, soliciting public, agency and tribal input on the draft EA. A supplemental public notice that provided an opportunity to request a public hearing was issued on September 14, 2019. No public comments were received. The draft EA is available via

a posting on the USACE website located at: https://www.nab.usace.army.mil/Missions/Civil-Works/Dredged-Material-Management-Plan-DMMP/

On July 19, 2019, the draft Finding of No Significant Impact (FONSI), EA and appendices were submitted to VADEQ's Office of Environmental Impact Review. A consistency determination with Virginia's Coastal Zone Management Plan and a request for a Section 401 Water Quality Certification (WQC) were also submitted to VADEQ. On September 17, 2019, VADEQ conditionally concurred that the proposed action is consistent with Virginia's CZM program. The Section 401 WQC requirements were met through the CZM consistency determination. The 2013 VADEQ Water Protection Permit with the Section 401 WQC authorizes use of current WTAPS, and is valid through October 2028.

6.0 ALTERNATIVES ANALYSIS

Pursuant to the requirements of NEPA and the regulations for implementing NEPA promulgated by CEQ (40 CFR 1500-1508) and USACE (33 CFR 230), this section presents alternatives to the proposed action, including the No-Action Alternative.

Alternative placement options for dredged material from the York Spit Channel were formulated in the 2005 Baltimore Harbor and Channels (Maryland and Virginia) DMMP and Final Tiered EIS (USACE, 2005). Those alternatives were revisited and were found to be infeasible and were not analyzed in this EA. These alternatives will be revisited and other placement options will be evaluated in the Virginia Channels DMMP. Those alternatives and a brief explanation of why they were not carried forward for further evaluation in this EA are listed in Table 2 below.

Table 2. Alternative Placement Sites from the 2005 DMMP and EIS Not Analyzed in this EA.

Alternative Name	Reason Not Carried Forward for Further Evaluation in this EA
Upland Placement – Craney Island Confined Disposal Facility	Dredged material from the Baltimore Harbor Channels is not permitted to be placed in this facility. Lack of non-federal sponsor to pay the costs above the federal standard.
Ocean Placement – Norfolk Ocean Open Water Site	This alternative would cost several million dollars more per dredging cycle than the No-Action Alternative. Lack of non-federal sponsor to pay the costs above the federal standard.
Beneficial Use – Beach Nourishment	The percentage of sand in the material from the York Spit Channel is below the percentage appropriate for beach nourishment. Lack of a non-federal sponsor to pay the costs above the federal standard. Preparation of an EIS may be required.
Beneficial Use – Shoreline Restoration	Lack of a non-federal sponsor to pay the costs above the federal standard. Preparation of an EIS may be required.
Beneficial Use – Large Island Restoration	Lack of a non-federal sponsor to pay the costs above the federal standard. Preparation of an EIS would be required.
Beneficial Use – Artificial Island Creation	Lack of a non-federal sponsor to pay the costs above the federal standard. Preparation of an EIS would be required.

The Federal Standard[2] for the placement of material dredged from the York Spit Channel is WTAPS. Any alternatives that increase costs above the Federal Standard would require a non-federal sponsor and cost sharing for the increment that exceeds the federal requirements for planning. Alternatives carried forward for further analysis are described in Sections 6.1 through 6.3 below.

6.1 ALTERNATIVE 1: NO ACTION

Inclusion of the No-Action Alternative is prescribed by CEQ regulations as the benchmark against which proposed federal actions are to be evaluated. The No-Action Alternative in this case is to continue placing dredged material in WTAPS. Average transport distance from the York Spit Channel to WTAPS is approximately 8.5 nm. The estimated cost (in FY 19 dollars) for this

[2] The Federal Standard is identified in USACE regulations under 33 CFR 335 through 338. Specifically, 33 CFR 335.7 defines the Federal Standard as follows: "Federal Standard means the dredged material disposal alternative or alternatives identified by the Corps which represent the least costly alternatives consistent with sound engineering practices and meeting the environmental standards established by the 404(b)(1) evaluation process or ocean dumping criteria."

alternative is approximately $13,409,000 per dredging cycle ($7.38 per cubic yard of dredged material), or $67 million over a 20-year planning period.[3] Adverse impacts to overwintering female blue crab in WTAPS are of concern to agencies of the Commonwealth of Virginia, and is the purpose for preparing this EA.

Alternative 1 (No Action) is the current Federal Standard for placement of dredged material from the York Spit Channel and has a non-federal sponsor. As such, it represents the least costly alternative consistent with sound engineering practices, and meets the environmental standards established by the 404(b)(1) evaluation process. This alternative is feasible and has been retained for further assessment. Impacts of the No-Action Alterative are compared to the impacts of implementing the Preferred Alternative in Section 8.0 below.

6.2 ALTERNATIVE 2: WOLF TRAP ALTERNATE OPEN WATER PLACEMENT SITE NORTHERN EXTENSION

Alternative 2 would establish an extension of the existing WTAPS site to the north, increasing the size of the placement site by approximately 3,900 acres. This alternative has been recommended by agencies of the Commonwealth of Virginia to minimize adverse impacts to overwintering female blue crab, which have the potential to be highly abundant in the southern portion of WTAPS. Aside from the increased travel distance (average distance of 14.3 nm vs. 8.5 nm), this alternative would otherwise be identical to the No-Action Alternative, and would rely upon the same methods, equipment, schedule and other factors. It would generate additional carbon emissions from project vessels, due to the increased travel distance, although the project area is in attainment for air quality standards. This alternative is not expected to have any other significantly different environmental impacts, relative to the No-Action Alternative. The estimated cost (in FY 19 dollars) for this alternative exceeds the No-Action Alternative by approximately $4.4 million per cycle ($10.30 per cubic yard of dredged material), or $21.9 million over a 20-year planning period, due to the increased travel distance and fuel consumption between the dredging and the placement site. WTAPSNE is being pursued as the non-federal sponsor's locally preferred plan under the condition that the sponsor pay any costs above placement at WTAPS (Federal Standard).

Alternative 2 is feasible, as it would rely on typical equipment and methods, and would be supported by the current non-federal sponsor (MPA). It would be environmentally preferable compared to the No-Action Alternative, as it would reduce the likelihood of adverse impacts to blue crab by making additional placement areas available, including the deeper, muddy channel, which are usually avoided as an overwintering habitat by blue crab (Lipcius and Knick, 2016). This alternative is feasible and has been retained for further assessment.

[3] Cost estimates presented for these alternatives include the estimated cost of dredging, which is not part of the proposed action. These estimates are for comparison only.

6.3 ALTERNATIVE 3: DEFER MAINTENANCE DREDGING OF THE YORK SPIT CHANNEL

Under this alternative, maintenance dredging of the York Spit Channel would be deferred indefinitely. No maintenance dredging would occur within the York Spit Channel to remove shoaled sediments and thus, no placement of dredged material would be required. Shoaling of sediment typically requires maintenance dredging every 4 years to remove about 1.5 mcy. Deferral of maintenance dredging would result in accumulation of sediment and reduction of the effective depth of the navigation channel. The York Spit Channel would become draft limiting for vessels transiting to and from Baltimore, which with regular channel maintenance can accommodate vessels with a loaded draft of 49 ft. A reduction in draft results in decreased shipping efficiency and ultimately a reduction in regional economic benefits. This alternative would forego potential regional and national economic benefits accruing from improvements in Port of Baltimore berth capacity.

Alternative 9 (defer maintenance dredging) is feasible if the Commonwealth of Virginia imposes restrictions above the Federal Standard and the non-federal sponsor does not pay the incremental cost difference above the Federal Standard. However, USACE finds this alternative unacceptable because it would result in draft restrictions for vessel traffic. Draft restrictions would reduce vessel efficiency and negatively impact regional and national economic development. This alternative would result in no direct environmental impacts from maintenance dredging or the placement of dredged material. Due to the large economic consequence of this alternative, it is not retained for further assessment.

7.0 AFFECTED ENVIRONMENT

This section describes the existing conditions of each environmental, cultural and social resource topic that may be affected by the proposed action. A combination of literature reviews, agency coordination and information from previous Baltimore and Norfolk District projects and NEPA documents were used to focus on relevant issues and sensitive resources to be addressed in this EA. Each environmental, cultural and social resource topic was reviewed for its applicability to the project. Through this analysis, resource topics clearly not applicable to the proposed action were eliminated for further evaluation (summarized in Table 3 below). Potential impacts to these resources would be negligible, localized, and most likely immeasurable.

Table 3. Resource topics not evaluated in this Environmental Assessment.

Resource Topic	Reason for Elimination
Aesthetics	Negligible impact. Temporary presence of one hopper dredge would occur during open water placement activities. The west side of the proposed expansion site is located approximately 3 nm east of the nearest shoreline (Mathews County, Virginia). The vessel would be noticeable from land; however, from this distance, the hopper dredge would most likely blend in with other large vessels (tug and tow vessels, large fishing boats, and cargo ships) transiting through the area. The proposed action would not permanently obstruct the view of the Bay.
Water Use	Negligible impact. Use of the proposed expansion site will temporarily change during open water placement activities as navigation through the area and recreation and fishing activities would be more limited. Effects to navigation, recreation and fisheries are described in Sections 8.8, 8.9 and 8.10, respectively. The proposed action would not permanently change the use of the water in the vicinity of the proposed expansion site.
SAV and Oysters	Not applicable. The VMRC identifies no SAV or oyster beds within the boundaries or adjacent to the proposed expansion site (VMRC, 2019). The SAV is typically limited to depths of less than 2 m, and oysters to depths of less than 8 m in Chesapeake Bay (VIMS, 2019a).
Wild and Scenic Rivers	Not applicable. The proposed expansion site is located in the mainstem of the Chesapeake Bay and there are no designated wild or scenic rivers adjacent to the proposed expansion site.
Climate Change	Negligible impact. USACE policy requires consideration of changes in river flow with climate change (USACE, 2018a). Climate change is anticipated to increase precipitation and change river flow into Chesapeake Bay. This may affect water quality in the lower and middle Bay somewhat, although magnitude of change is uncertain (CBP, 2008). Change over the next several decades appears unlikely to be of a magnitude that would have management implications for the proposed expansion site.
Hazard, Toxic and Radioactive Waste	Not applicable. No hazardous waste, brownfields, voluntary remediation programs, or federal Superfund sites are located in or adjacent to the proposed expansion site (VADEQ, 2019).

7.1 HYDROLOGY AND WATER QUALITY

7.1.1 Hydrology

Water levels in the Chesapeake Bay are dominated by a semi-diurnal tide. Due to its small depth-length ratio (bathymetry described in Section 7.2), the Bay accommodates more than one semidiurnal tidal wave at all times, which results in special tidal characteristics within the Bay. The mean tidal range decreases from 3 ft at the Bay's entrance to a minimum of 1 ft at Annapolis, Maryland, then rises to 2.3 ft at the head of the Bay. The typical tidal range in the action area is approximately 2.85 feet, although this varies significantly with time of the month (spring and neap tides) as well as storm activity, which can create significant storm surges well beyond the normal tidal range. Average tidal current amplitudes decrease from a maximum of 3.38 ft/second (s) at the mouth to a minimum of 0.43 ft/s in the middle Bay, and increase to 1.94 ft/s in the upper Bay (Xiong and Berger, 2010).

Wright et al. (1987) found that bay-stem plains and channels experience relatively strong near-bottom tidal currents. At an elevation of 20 cm above the bed, the tidal current velocity maxima exceed 20 cm/sec while at 1 m above the bed they exceed 40 cm/sec. Also, waves from the ocean (ocean swell) can extend into the Bay about as far north as the mouth of the Potomac River (Boon et al., 1996). Thus under conditions when this occurs, ocean waves could contribute energy moving bottom sediments in WTAPS and the proposed placement area. Past benthic monitoring has not focused on the impacts of sediment movement within WTAPS, though reference sites to the south of placement areas monitored by Schaffner (2010) and monitored sites in WTAPS showed evidence that non-local processes influenced patterns of benthic community recovery. A quarter-mile buffer area has been established for disposal activities at WTAPS, which may limit sediment dispersal to areas outside the designated disposal area.

Water circulation in the Bay is primarily driven by the downstream movement of fresh water from rivers and the upstream movement of salt water from the ocean. A gradient of increasing salinity is produced proceeding oceanward. Generally, salinity in the lower Chesapeake Bay Mainstem is characterized as polyhaline (salinity between 18 and 30 parts per thousand (ppt)), salinity in the middle to upper Bay Mainstem is characterized as mesohaline (salinity between 5 and 18 ppt), and salinity in the upper Bay Mainstem is characterized as oligohaline (0.5 and 5 ppt) and tidal fresh (0 and 0.5 ppt) (Figure 5) (Center for Conservation Biology, 2010). Tides pump water into and out of the Bay. In addition to salinity differences, the earth's rotation affects Bay circulation. Inflowing ocean water hugs the eastern shore, while outflowing Bay water hugs the western shore. Wind can mix the Bay's waters and occasionally reverse the direction of the flows. Major storm and flood events cause general circulation patterns to break down (CBP, 2019a).

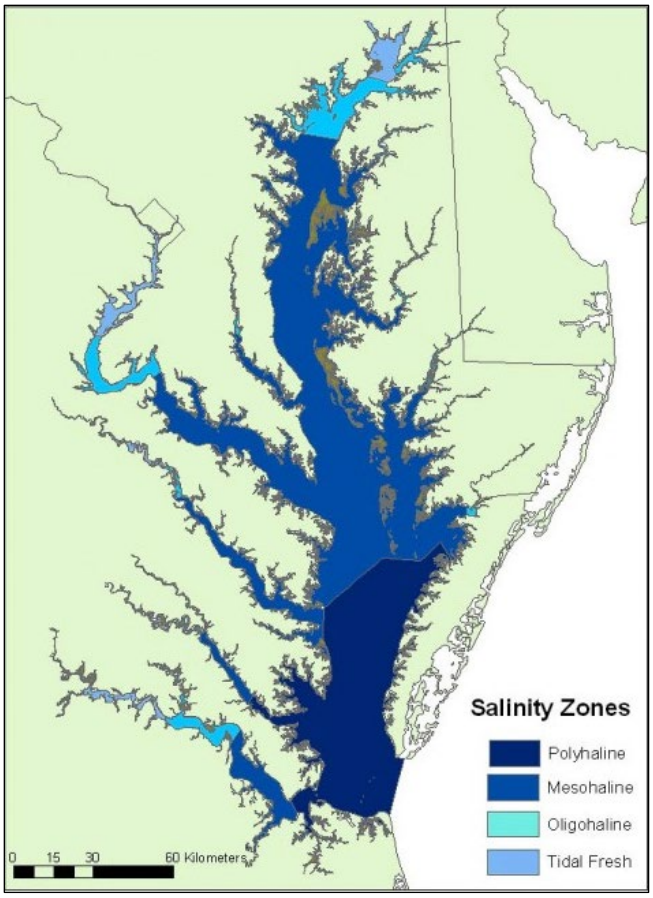

Figure 5. Salinity gradients in the Chesapeake Bay.

Less dense, fresher surface water layers are seasonally separated from saltier and denser water below by a zone of rapid vertical change in salinity known as the pycnocline. The pycnocline plays an important role in Bay water quality acting to prevent deeper water from being reoxygenated from above. Pycnocline depth varies in the Bay as a function of several factors. It shows general long-term geographic patterns, but varies over shorter time periods as a function of precipitation and winds. When substantial freshwater inflow occurs during warm weather months, it promotes stronger stratification that can last for extended periods during a year. Conversely, sustained winds in a single direction for several days can cause the pycnocline to tilt, bringing deeper water up into shallows on the margins of the Bay (CBP, 2019a).

Because of this partial seasonal separation into layers, or strata, the Bay is classified as a partially stratified estuary. Division of surface from deeper waters varies depending on the season, temperature, precipitation, and winds. In late winter and early spring, melting snow and high streamflow increase the amount of fresh water flowing into the Bay, initiating stratification for the calendar year. During spring and summer, the Bay's surface waters warm more quickly than deep waters, and a pronounced temperature difference forms between surface and bottom waters, strengthening stratification. In autumn, fresher surface waters cool faster than deeper waters and freshwater runoff is at its minimum. The cooler surface water layer sinks and the two layers mix

rapidly, aided by winds. During the winter, relatively constant water temperature and salinity occurs from the surface to the bottom (CBP, 2019a).

Seasonal stratification produces vertical salinity differences in warm weather months in the middle and lower Bay. Waters below the pycnocline may be several to more than 10 ppt greater in salinity than surface waters in warm water conditions. Vertical salinity differences are greatest when substantial freshwater inflow occurs during warm weather months (Maryland BayStat, 2019).

7.1.2 Water Quality

Water quality information for the proposed expansion site was obtained using the Watershed Assessment, Tracking and Environmental Results System (WATERS) GeoViewer and Water Quality Assessment Report from the USEPA Office of Water (USEPA, 2019b; USEPA, 2019d). The proposed expansion site is located in segment "CB6PH", which is located in the northeastern half of the Virginia portion of the Chesapeake Bay between the mouths of the James and Rappahannock Rivers, hydrologic unit code (HUC) 02080101. Segment CB6PH is listed as impaired under USEPA's 303d list for reporting year 2014. The causes of impairment in this segment are dissolved oxygen and polychlorinated biphenyls (PCBs)[4] in fish tissue. A total maximum daily load (TMDL) has been developed for segment CB6PH for nutrients (nitrogen and phosphorus) resulting in decreased levels of dissolved oxygen. Probable sources contributing to the dissolved oxygen impairment include agriculture, atmospheric deposition – nitrogen, industrial point source discharge, internal nutrient recycling, loss of riparian habitat, municipal point source discharges, unspecified non-point source discharge, sources outside state jurisdiction, and wet weather discharges (point source and combination of stormwater). The source of the PCB impairment is unknown (USEPA, 2019b).

Long-term dissolved oxygen (DO) data, salinity and temperature data for the proposed expansion site was obtained from the Virginia Estuarine and Coastal Observing System (VECOS). Data was obtained from monitoring station "CB6.3 – Lower West Central Chesapeake Bay", which is located in the center of the proposed expansion site (VIMS, 2019b).

Dissolved Oxygen

The DO is critical to aquatic life in the Chesapeake Bay. Aquatic creatures, other than some microbes, need oxygen to survive. The DO concentrations vary depending on location and time of year, and are based on temperature, salinity, nutrient levels, and biological uptake. Many factors interact to determine the DO content of Chesapeake Bay tidal waters. Nutrient loading, water column stratification, wind and tidal mixing, and water temperatures are important factors (CBP, 2019a).

The DO concentrations of 5 mg/L (milligrams per liter) or greater allow Bay aquatic life to thrive. At DO levels below 2 mg/L, the water is considered hypoxic, and when DO drops below 0.2 mg/L,

[4] PCBs are a class of man-made compounds manufactured in the 20th century until 1979 that were used for a variety of industrial applications. PCBs are suspected human carcinogens. PCBs in sediments can be resuspended into the water column. PCBs bioaccumulate and biomagnify in some aquatic organisms, with accumulations/concentrations of concern occurring in bottom-oriented fish (ICPRB, 2007).

it is considered anoxic. The DO levels tolerable by aquatic life vary; with some organisms being more tolerant of low DO than others. Non-mobile and poorly mobile organisms, such as oysters, clams, and benthic invertebrates such as some worms, are unable to relocate when low DO conditions occur. Mobile organisms, such as fish and crab, can avoid low DO waters. However, chronically low levels of DO in the Chesapeake Bay reduces availability of inhabitable deep-channel and deep open-water habitat on a large scale. Availability of associated forage food for demersal (bottom-dwelling) fish species is also consequently reduced substantially. Hypoxia (low oxygen) consequently reduces the numbers and catch of demersal fish species (Buchheister et al., 2013). Severe near-absence of oxygen conditions (anoxia) occur perennially in the deep channel (below 39 feet in depth) in the middle Bay and in certain bowl-shaped areas of the Bay's bottom (CBP, 2019a; Versar, 2017). The WTAPSNE site is closer to the middle Bay areas with chronic low DO problems than is the WTAPS site.

Data from monitoring station CB6.3 show that typical bottom DO levels in the proposed expansion site reach near-hypoxic levels below 4 milligrams/liter (mg/l) during the summer months while surface DO remains above hypoxic levels at 6 mg/l during the summer months. DO levels potentially reach severe lower oxygen levels in the deeper channel during the summer months. During the winter months, both the surface and the bottom DO levels remain above hypoxic levels with a typical range of 8 to 12 mg/l at the bottom and a range of 10 to 12 mg/l at the surface (VIMS, 2019). Figure 6 shows the average surface and bottom DO levels in the proposed expansion site from 1984 to 2018 (CBP, 2019a).

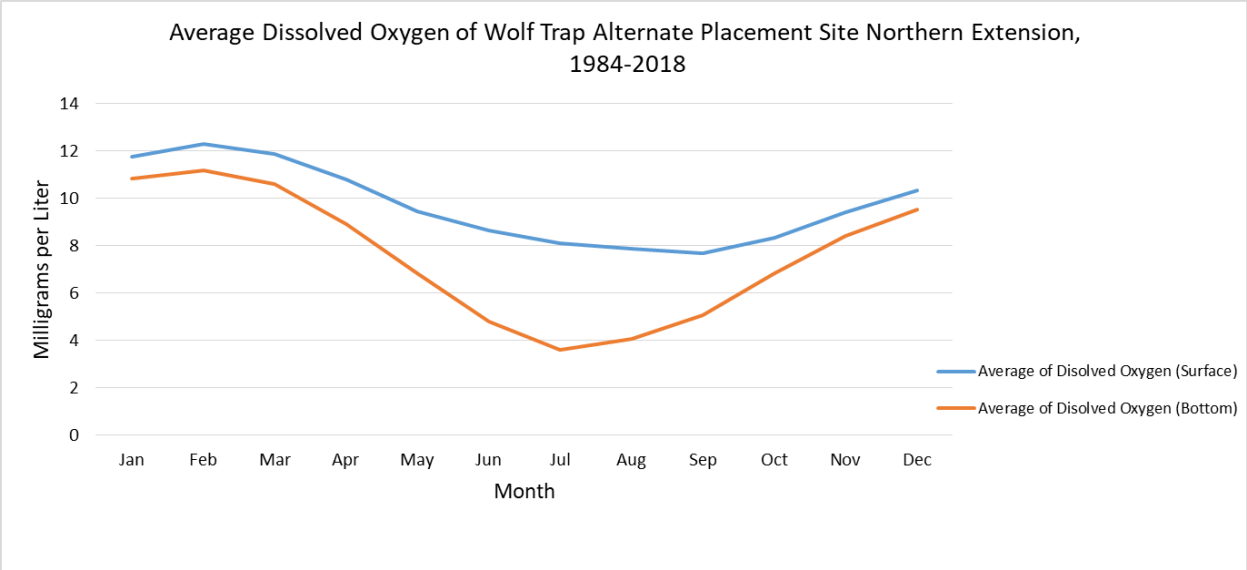

Figure 6. Average surface and bottom dissolved oxygen levels in the proposed Wolf Trap Alternate Open Water Placement Site Northern Extension from 1984 to 2018.

Water Temperature

Water temperatures in the Chesapeake Bay fluctuate widely throughout the year, ranging from 1° Celsius (C) in the winter to 29°C in the summer. Changes in water temperature influence when fish and crab feed, reproduce and migrate (CBP, 2019a). Figure 7 shows the average surface and bottom temperatures in the proposed expansion site from 1984 to 2018 (CBP, 2019a).

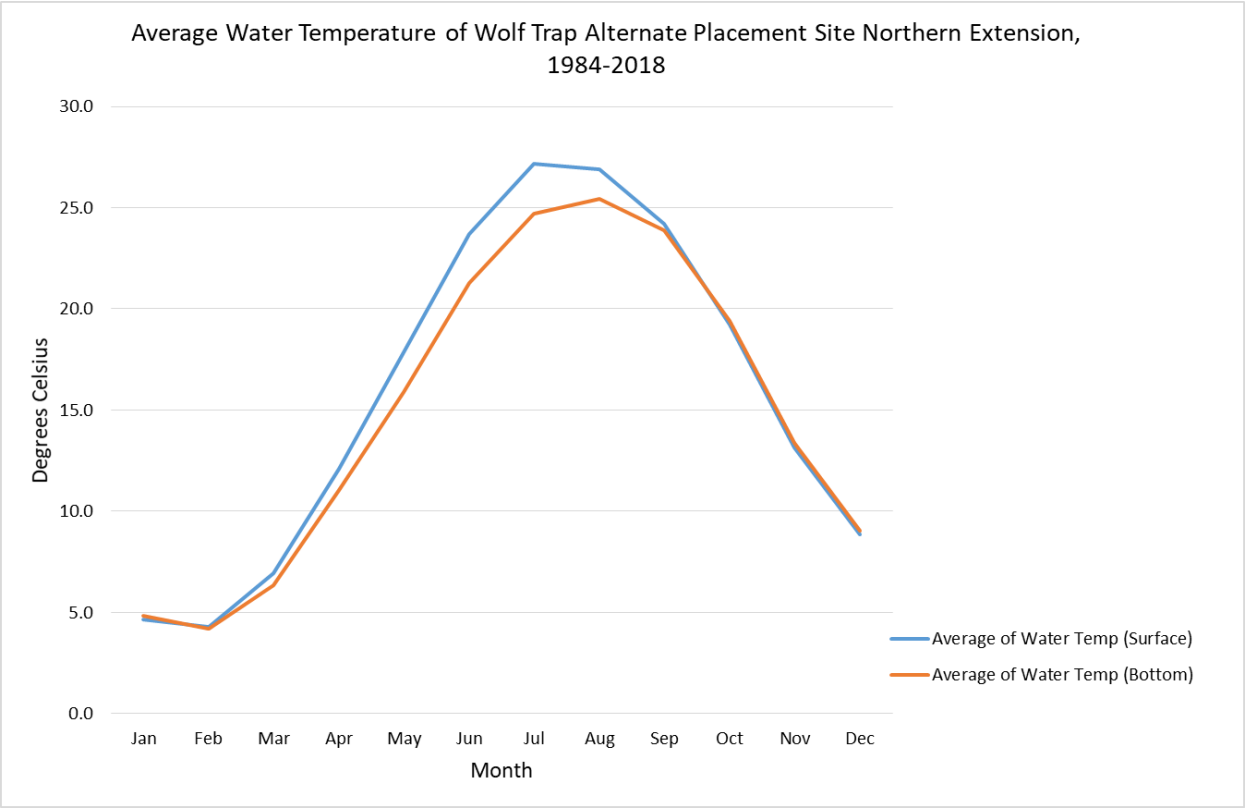

Figure 7. Average surface and bottom water temperatures in the proposed Wolf Trap Alternate Open Water Placement Site Northern Extension from 1984 to 2018.

Salinity

Salinity in the Chesapeake Bay varies from season to season and year to year depending largely on the amount of freshwater flowing into the Bay. Generally, salinity in the lower Chesapeake Bay is characterized as polyhaline (between 18 and 30 ppt) (The Center for Conservation Biology, 2010), illustrated in Figure 5. Normal surface salinities in the proposed expansion site vary from 10 to 24 ppt, with an average of 17.9 ppt. Normal bottom salinities vary from 14 to 28 ppt, with an average of 22.2 ppt. Figure 8 shows the average surface and bottom salinities in the proposed expansion site from 1984 to 2018 (CBP, 2019a).

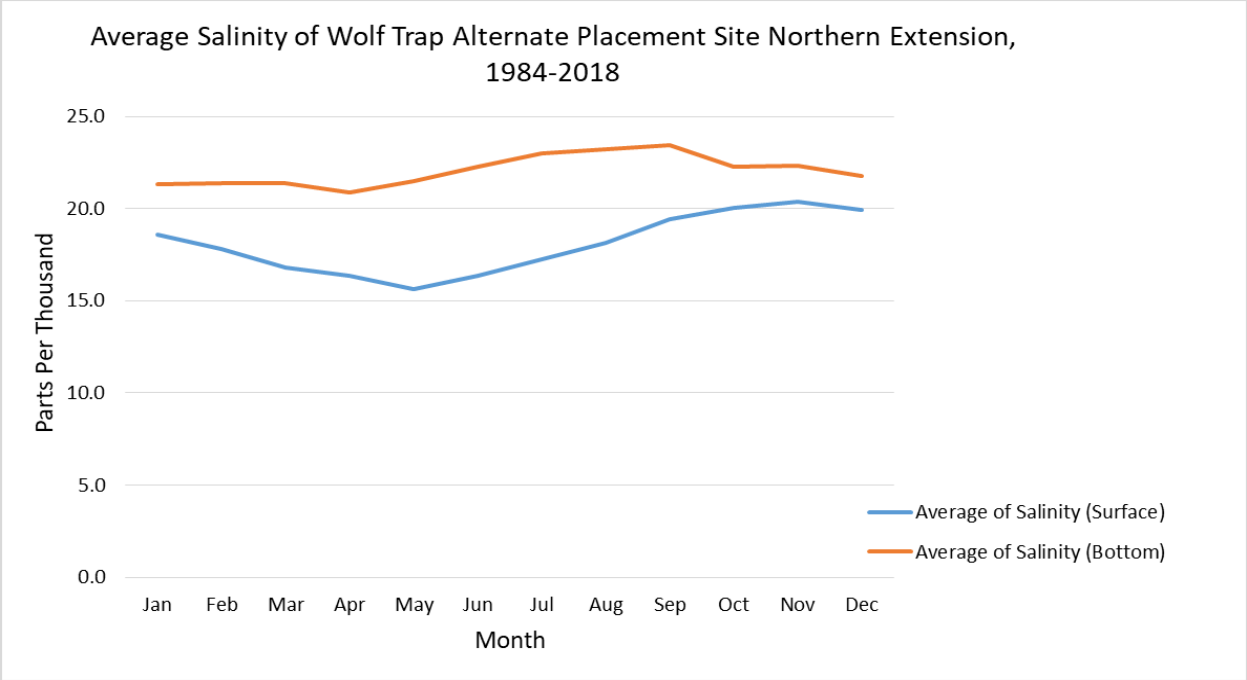

Figure 8. Average surface and bottom salinities in the proposed Wolf Trap Alternate Open Water Placement Site Northern Extension from 1984 to 2018.

7.2 BATHYMETRY

The Chesapeake Bay is located in the middle Atlantic Coastal Plain Province and is a large drowned river valley. Water depths in the Bay are relatively shallow; approximately 50 percent of the Bay is less than 20 ft deep, 35 percent has depths greater than 30 ft, 18 percent greater than 40 ft, and only 8 percent greater than 60 ft (Xiong and Berger, 2010).

The bottom of the proposed expansion site is characterized as a flat, relatively featureless plain (termed bay-stem plains by Wright et al. 1987) with a deep channel running lengthwise through the site (termed bay-stem channel by Wright et al. 1987) (Figure 9). Based on bathymetric surveys conducted by Baltimore District in April, July and August of 2017, water depths at the proposed expansion site range from 23 ft to 55 ft MLLW, with an average depth of 36 ft MLLW (Figure 10).

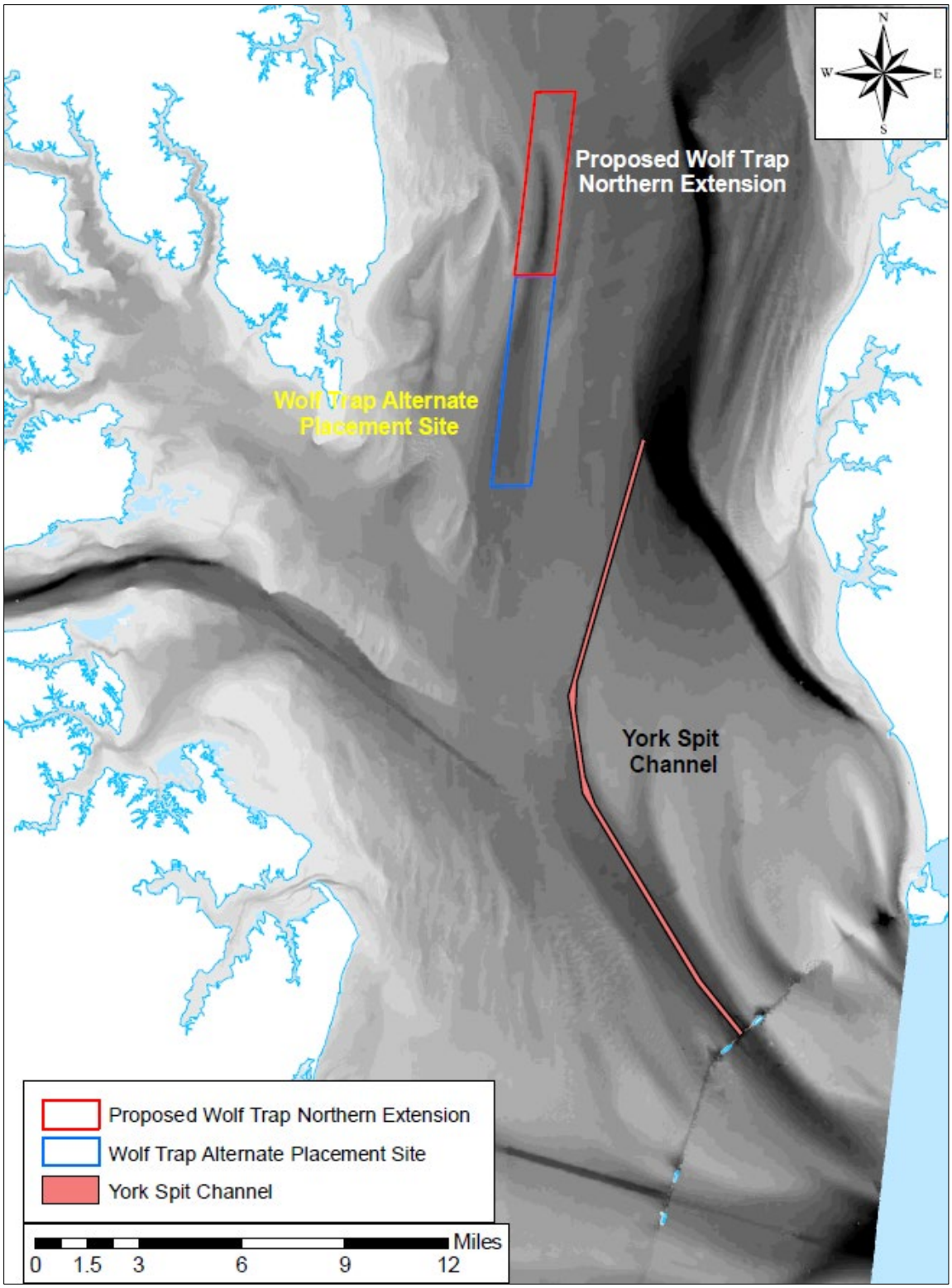

Figure 9. Bottom contours in the proposed Wolf Trap Alternate Open Water Placement Site Northern Extension. Background bathymetry data published by NOAA in 1998.

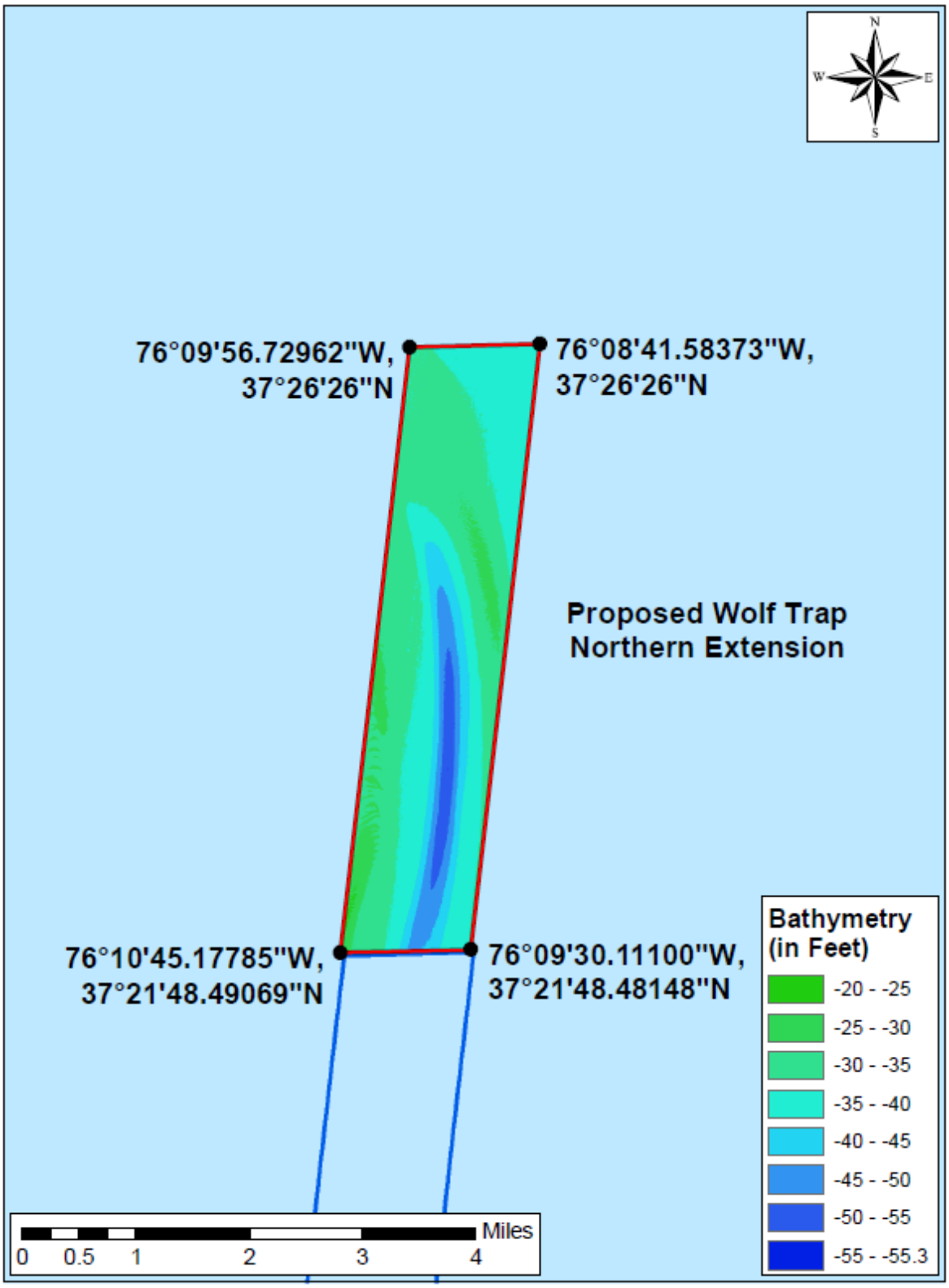

Figure 10. Bathymetry (in feet) in the proposed Wolf Trap Alternate Open Water Placement Site Northern Extension. Data collected by USACE in 2017.

7.3 GEOLOGY AND SEDIMENTS

Naturally deep channels in the lower Chesapeake Bay within the vicinity of the proposed expansion area are remnant features reflecting the Bay's geological evolution. At the time of maximum glaciation in the last Ice Age, what is today the Bay was a large, above sea-level valley of the ancient Susquehanna River and its tributaries. Sea level-rise following the end of the Ice Age to the present flooded the valley. Sediments infilled the valley where major sediment sources were available from rivers and eroding shorelines, or from sediment transported into the Bay from the ocean. The deep channels are far from these major sediment sources, and thus have remained deeper (USGS, 2003). While some bottom scour does occur in the area of interest, the naturally deep channels are not formed or maintained by modern scour processes.

The two bottom types found in the proposed expansion site, bay-stem plains and bay-stem channels, are typically composed of mud or fine sand with silt and clay filling interstices (Wright et al., 1987). No sediment testing has been conducted by USACE in the proposed expansion site. However, sediments in WTAPS are composed of very fine/fine sand and silts consistently throughout the entire site. In the west boundary of WTAPS, grain sizes were smaller with lower percentages of medium sand than in the east boundary (USACE, 2016a). Throughout the lower Bay, bottom sediments are routinely resuspended due to high energy flows from tidal currents. Sediment transport, deposition, and resuspension will vary within the lower Bay by bed variability (Wright et al., 1987).

The USACE conducted physical and chemical sampling of the York Spit Channel O&M material in June 2013 using methods outlined in the Inland Testing Manual, which is national guidance developed by the USEPA and USACE. Sediments from the northern part of York Spit Channel were predominantly comprised of silt and clays (79.5 percent) and were most similar to the sediments at WTAPS (78.4 percent silt/clay). Sediments from the southern part of the York Spit Channel were predominately comprised of sand (81.9 percent) (USACE, 2014).

Concentrations of detected analytes[5] in sediment samples from the York Spit Channel were compared to sediment quality guidelines (SQGs) for marine sediments to assess the sediment quality of the material proposed for dredging. The SQGs were used to identify potential adverse biological effects associated with contaminated sediments. Threshold effects levels (TELs) typically represent concentrations below which adverse biological effects are rarely observed, while probable effects levels (PELs) typically represent concentrations in the middle of the effects range and above which effects are more frequently observed (USACE, 2014).

Of the 18 tested metals[6], 9 of them – arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc – have TEL and PEL values. All of the tested metals were detected in each sediment sample from the York Spit Channel; however, none of the concentrations exceeded TEL

[5] A substance whose chemical constituents are identified and measured.
[6] Rationale for testing these metals is derived from: USEPA/USACE. 1998. (EPA-823-B-98-004). Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual.

or PEL concentrations. In addition to comparing sediment results to sediment quality guidelines, the acid volatile sulfide (AVS) / Simultaneously Extracted Metals (SEM) ratio was calculated to assess the bioavailability of the five simultaneously extracted metals included in the analysis (cadmium, copper, lead, nickel, and zinc). The AVS/SEM ratios for sediments from the York Spit Channel indicated that these metals would most likely be bound to organic matter[7] and would not be expected to be bioavailable to aquatic organisms in these locations. None of the tested polycyclic aromatic hydrocarbons (PAHs)[8] were detected in site water, receiving water, or in the standard elutriates samples taken from the York Spit Channel. This indicates that PAHs are tightly bound to sediments and are not likely to be released into the water column during open water placement. Total PCB concentrations in the York Spit Channel sediments did not exceed TEL values (USACE, 2014).

7.4 AIR QUALITY

The Clean Air Act of 1970 requires the USEPA to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants including ground-level ozone, particulate matter, carbon monoxide, lead, sulfur dioxide, and nitrogen dioxide. The USEPA calls these "criteria air pollutants" because their levels in outdoor air need to be limited based on health criteria. These pollutants are found all over the United States and may cause health problems, harm the environment, and cause property damage (USDOE, 2000). Mathews County, Virginia (the closest county to the proposed expansion site) and neighboring Virginia counties including Gloucester, York and Northampton Counties are all currently in attainment (as of October 2, 2019) with the NAAQS (40 CFR Part 50) for the six principal pollutants. Attainment means that an area is meeting or is below a given safe standard set by the USEPA for the particular criteria pollutant (USEPA, 2019c).

7.5 FISH AND WILDLIFE

7.5.1 Threatened and Endangered Species

Federally-listed Species

Table 4 lists the federally-listed threatened and endangered species under the purview of NMFS as having the potential to occur in the proposed expansion site. No listed species critical habitat is located within the proposed expansion site. This species list was verified by NMFS Protected Resource Division Staff (B. Hopper, pers. comm. April 4, 2019). More details on the species listed in the table below can be found in Appendix B: Endangered Species Act Coordination.

[7] Matter composed of organic compounds that have come from the remains of organisms such as plants and animals and their waste products in the environment.

[8] PAHs form when gas, coal and oil are burned. PAHs are detected at varying concentrations across the watershed, with the highest reported in or near Baltimore Harbor and the Anacostia and Elizabeth rivers (CBP, 2019a).

Table 4. Federally-listed threatened and endangered species under the purview of NMFS that have the potential to be affected by the proposed Wolf Trap Alternate Open Water Placement Site Northern Extension.

Species	Distinct Population Segment (DPS)	Federal Status
Loggerhead Sea Turtle (*Caretta caretta*)	Northwest Atlantic	threatened
Green Sea Turtle (*Chelonia mydas*)	North Atlantic	threatened
Leatherback Sea Turtle (*Dermochelys coriacea*)	n/a	endangered
Kemp's Ridley Sea Turtle (*Lepidochelys kempii*)	n/a	endangered
Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*)	Gulf of Maine Carolina New York Bight Chesapeake Bay South Atlantic	Gulf of Maine – threatened; all other DPSs are endangered
Shortnose Sturgeon (*Acipenser brevirostrum*)	n/a	endangered

The USFWS Environmental Conservation Online System Information for Planning and Consultation (ECOS-IPaC) Website (USFWS, 2019) was used to identify any species under USFWS purview that has the potential to occur in the proposed expansion site. The ECOS-IPaC identified the northern long-eared bat (*Myotis septentrionalis*) as having the potential to occur in the proposed expansion site.

State-listed Species

Table 5 identifies the state-listed threatened and endangered species that have the potential to occur in the proposed expansion site (VADGIF, 2019). More details on the species listed in the table below can be found in Appendix B: Endangered Species Act Coordination.

Table 5. State-listed threatened and endangered species that have the potential to be affected by the proposed Wolf Trap Alternate Open Water Placement Site Northern Extension.

Species	State Status
Loggerhead Sea Turtle (*Caretta caretta*)	threatened
Green Sea Turtle (*Chelonia mydas*)	threatened
Leatherback Sea Turtle (*Dermochelys coriacea*)	endangered
Kemp's Ridley Sea Turtle (*Lepidochelys kempii*)	endangered
Hawksbill Sea Turtle (*(Eretmochelys imbricate)*	endangered
Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*)	endangered
West Indian Manatee (*Trichechus manatus*)	endangered

7.5.2 Finfish

Fish species occurring along the length of the Bay differ as a function of salinity and other factors. The middle and lower regions of the Bay have a greater biomass of fish species that spawn on the Continental Shelf, as well as sharks and rays, as compared to the upper Bay. The upper Bay contains a greater biomass of anadromous species that spawn in low salinity waters. Generally, the lower and middle Bay regions have more diverse and changing fish assemblages than the upper Bay throughout the year, primarily because of migration of many species. However, the upper Bay typically has more fish species occurring at any one place throughout the year because there is less turnover of species (Buccheister et al., 2013).

Low DO levels limit distribution and abundance of fish because fish avoid waters where DO drops below 4 mg/L. Demersal (bottom-oriented) fish of the Bay have had a substantial seasonal reduction in habitat availability with onset of vast anthropogenic hypoxia or anoxia. Forage for demersal fish in the middle Bay is reduced due to hypoxia and eutrophication stress, likely detrimentally affecting Atlantic croaker, white perch, and spot (Buccheister et al., 2013).

The Chesapeake Bay supports 348 species of finfish, 32 of which are year-round residents of the Bay (USACE, 2005; CBP, 2015). Many species enter the Bay either from freshwater streams or the Atlantic Ocean to feed, reproduce, and find shelter. Highly abundant species such as the Bay anchovy (*Anchoa mitchilli*) form a critical link in the food web, serving as the dietary basis for other species, including a variety of birds and mammals. The sport fish most commonly caught in the Chesapeake Bay in 2015 included white perch, striped bass, Atlantic croaker, freshwater catfish, spot, herring, summer flounder, and kingfishes (NMFS, 2015).

In November 2014, a total of 33,546 finfish were collected during bottom trawl sampling in WTAPS. Fish assemblages were dominated by bay anchovies, Atlantic croaker, northern kingfish, smallmouth flounder, and weakfish, which collectively accounted for 99 percent of all finfish collected. Bay anchovy alone accounted for 95 percent of the total number of fish collected. In June 2015, total finfish abundance was lower (2,307), and fish assemblages were dominated by bay anchovies, northern sea robins, weakfish, spotted hake, and Atlantic croaker, which collectively accounted for 84 percent of all fish collected. Total fish abundance in November 2015 (895) was lower than November 2014, primarily because of low bay anchovy abundances in November 2015 (USACE, 2016b).

7.5.3 Essential Fish Habitat

As shown in Table 7 below, 14 species have been identified as having Essential Fish Habitat (EFH) in the proposed expansion site, including the sandbar shark, which has Habitat Areas of Particular Concern[9] (HAPC) in the proposed expansion site. The sand tiger and dusky sharks *do not* have EFH within the proposed expansion site, but are Species of Concern with potential EFH in the

[9] EFH that is judged to be particularly important to the long-term productivity of populations of one or more managed species, or to be particularly vulnerable to degradation may also be identified by Fisheries Management Councils and NOAA Fisheries as HAPC. Areas of EFH considered HAPC must be proven to be important to the ecological function provided by the habitat for the managed species. The extent to which the habitat is sensitive to human-induced environmental degradation, including development activities that stress the habitat and the rarity of the habitat are considered.

lower Chesapeake Bay, in the vicinity of the proposed expansion site. These designations are based on the NOAA Estuarine Living Marine Resource (ELMR) program, the EFH habitat mapper tool, and NOAA EFH source documents. Based on salinity information presented in Section 7.1.2, the proposed expansion site is generally in the mixed/brackish ("M") zone, but occasionally rises past the 25 ppt threshold into seawater ("S") salinity zone (NOAA, 2018a; NOAA, 2019a; NOAA, 2019b). Please refer to Appendix C: Essential Fish Habitat Assessment for detailed descriptions of the species identified in Table 7 and their EFH.

Table 6. Summary of federally-managed species with Essential Fish Habitat in the proposed Wolf Trap Alternate Open Water Placement Site Northern Extension.

Species	Life Stage			
	Eggs	**Larvae**	**Juveniles**	**Adults**
Red hake (*Urophycis chuss*)			S	S
Windowpane flounder (*Scopthalmus aquosus*)			M,S	M,S
Summer flounder (*Paralicthys dentatus*)		M,S	M,S	M,S
Bluefish (*Pomatomus saltatrix*)			M,S	M,S
Atlantic butterfish (*Peprilus triacanthus*)	M,S	M,S	M,S	M,S
Scup (*Stenotomus chrysops*)			S	S
Black sea bass (*Centropristus striata*)			M,S	M,S
King mackerel (*Scomberomorus cavalla*)	X	X	X	X
Spanish mackerel (*Scomberomorus maculatus*)	X	X	X	X
Atlantic sea herring *(Clupea harengus)*				S
Sand tiger shark *(Carcharias taurus)**			S	S
Sandbar shark *(Carcharhimus plumbeus*)			S	S
Dusky shark *(Carcharhinus obscurus)**				S
Clearnose skate (*Raja eglanteria*)			M,S	M,S
Little skate (*Leucoraja erinacea*)			M,S	M,S
Winter skate (*Leucoraja ocellata*)			M,S	M,S

S = Includes the seawater salinity zone (salinity ≥ 25.0‰).
M = Includes the mixing water/brackish salinity zone (0.5‰ < salinity < 25.0‰).
X = EFH has been designated for a given species and life stage.

***** The project area is not mapped as potential EFH for the sand tiger or dusky sharks; however, both species are included in Appendix C: Essential Fish Habitat Assessment because they are NOAA Species of Concern, and have potential EFH mapped in the lower Chesapeake Bay, a few miles south of the project location.

7.5.4 Benthic Community

Benthos is the community of organisms that live in or on the bottom sediment of water bodies. Benthos includes mobile and immobile organisms. Benthic invertebrates are animals without a backbone that live on top of or within bottom sediments in aquatic ecosystems. They are often used as indicators of water quality and ecological health due to their abundance, known pollution tolerances, and limited mobility. A typical healthy benthic community includes species characteristic of unstressed communities. In a polluted environment, these species would be replaced by species more tolerant of pollution. Most degraded communities would also tend to have fewer species, fewer large organisms deep in the sediment, and a lower total mass of organisms (Versar, 2013).

The benthic environment in the lower Chesapeake Bay is generally considered to be a more stable environment than what is observed in the middle and upper Bay. Lower Bay temperature and salinity are relatively stable compared to conditions in the upper Bay. Therefore, the biomass of benthic species is greater in the lower Bay (Nilson et al., 1982). The Benthic Index of Biotic Integrity (IBI) measures the condition of the benthic community living in or on the soft bottom areas of the Bay (UMCES, 2013). The Benthic IBI average annual score for the sampling station located in the proposed expansion site and in the existing WTAPS is considered good (CBP, 2015).

Bay-stem plains (the primary bottom type in the proposed expansion site) are colonized by high densities of tube dwellers including the annelid, *Euclymene zonalis*, the anemone, *Ceriantheopsis sp.*, and the amphipod crustacean, *Ampelisca abdita*. Sediment reworking by *Euclymene zonalis*, a "conveyor-belt" species, produces a hummocky bed surface (Wright et al, 1987). The benthic community in the bay-stem channel that runs lengthwise through the proposed expansion site may differ from the benthic community in the bay-stem plains due to limited near-bottom water exchange and greater seasonal oxygen stress.

In November 2014, samples were collected of the benthic macrofaunal assemblages in WTAPS. It is expected that this area has benthos similar to that of WTAPSNE. The WTAPS study showed the area was numerically dominated by Spionid polychaetes worms, which accounted for 42.5 percent of all individuals collected. Other common taxa included arthropods of the amphipod crustacean families Ischyroceridae and Caprellidae. Benthic biomass was dominated by mollusks in the northeast area of WTAPS. Mollusks were not a major component of the southern area of WTAPS, which had a large number of Chaetopterus annelid worms. The bivalves *Anaitides mucosa* and *Nucula proxima* were common in the northern half of WTAPS. Sampling of WTAPS in June 2015 found benthic macrofaunal assemblages were numerically dominated by Spionid polychaetes, which accounted for 31.9 percent of all individuals collected within WTAPS, followed by Capitellid polychaetes (17.4 percent) and Ampelisca amphipods (15.8 percent). Benthic biomass was fairly even across all of areas of WTAPS, with no peaks caused by relatively large-bodied bivalves (USACE, 2016b). Furthermore, sampling in November 2015 found that Spionid polychaetes were again the numerically dominant taxon, accounting for 51.7 percent of all individuals collected. Ampeliscid (9 percent) and Ischyrocerid (6.7 percent) amphipods were the next two most abundant taxa (USACE, 2016b).

The benthic community in WTAPSNE is not likely to be fundamentally different than the benthic community in WTAPS (except for the abundance of blue crab). However, the benthic community in WTAPSNE is likely to be colonized by species that are more tolerant of greater seasonal oxygen stress, silty conditions and deeper water depths.

7.5.5 Blue Crab

Blue crab are not federally-managed or listed, but they are a NOAA trust resource species[10] because of their ecological and economic significance. They are the most valuable commercial fishery in the Chesapeake Bay, and are important prey for many finfish species that have EFH in the project area. Cobia and red drum prey on adult and larger juvenile blue crab while summer flounder and sandbar shark prey on young juvenile blue crab (Maryland Sea Grant, 2011).

Blue crab habitat includes shallow and brackish waters, eelgrass beds, and muddy bottoms. In the Chesapeake Bay, mating occurs within shallow tributaries between May and October. After mating, female blue crab migrate from sub-estuaries to spawning areas in the lower Chesapeake Bay. When water temperatures fall below 10°C (typically December through March), blue crab activity ceases (e.g., movement and foraging) and the crab burrow into the sediment and begin a period of overwintering dormancy. In the Chesapeake Bay, most females go through an overwintering stage and produce broods of eggs the following spring (USACE, 2017b). In the tidal waters of Virginia, commercial harvest of crab by crab pot is not allowed from December 1 through March 16 (beginning in 2018), and the commercial harvest of crab using commercial gear is prohibited from November 1 through March 30 (VMRC, 2017). Juvenile blue crab utilize grass beds for nursery areas, and throughout the life stages of blue crab, grass beds are utilized for foraging.

VMRC has previously raised concerns regarding potential effects to overwintering female blue crab due to usage of the WTAPS, which is located to the south of the proposed expansion site. Lipcius and Knick (2016) analyzed data from the blue crab winter dredge survey conducted from 2009 to 2016 in WTAPS and the Rappahannock Shoal Placement Site. Lipcius and Knick (2016) reported a high abundance of overwintering female blue crab in the southern portion of WTAPS, moderate abundance in the north portion of the site, and low abundance in the middle of the site (Figure 11, note that actual densities are exaggerated by factor of 1,000 for visual clarity). They also reported considerable annual variability in female blue crab density at WTAPS, with low densities in 2012 and 2014 and high densities in 2013 and 2016 (Lipcius and Knick, 2016).

[10] NOAA trust resources are living marine resources that include: Commercial and recreational fishery resources (marine fish and shellfish and their habitats); Anadromous species (fish, such as salmon and striped bass, that spawn in freshwater and then migrate to the sea); Endangered and threatened marine species and their habitats; Marine mammals, turtles, and their habitats; Marshes, mangroves, seagrass beds, coral reefs, and other coastal habitats; and Resources associated with National Marine Sanctuaries and National Estuarine Research Reserves.

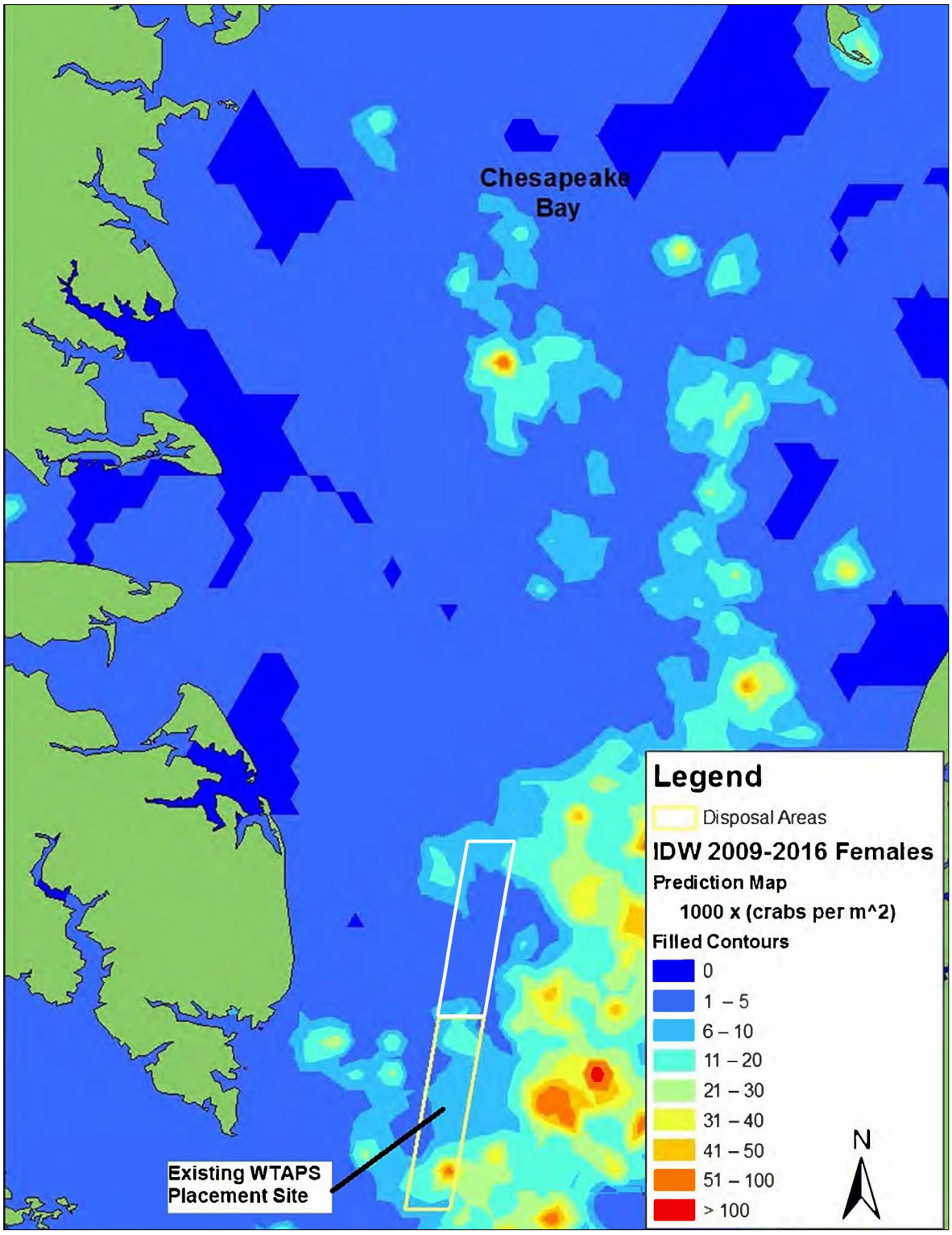

Figure 11. Relative density of overwintering female blue crab from 2009 to 2016. Density multiplied by a factor of 1,000 for clarity (modified from Lipcius and Knick, 2016).

7.6 CULTURAL RESOURCES

Cultural resources are locations of human activity, use, or occupation. They can be defined by expressions of human culture in this physical environment, such as prehistoric or historic archaeological sites, buildings, structures, objects, districts, or sacred sites among others. Cultural resources may also include natural features, plants, and animals that are deemed important or significant to a cultural group or community.

It is important to note that historic properties, as defined by 36 CFR 800, and the implementing regulations of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, are cultural resources that are eligible for inclusion in the National Register of Historic Places (NRHP). Historic properties may include districts, sites, buildings, structures, artifacts, ruins, objects, works of art, properties of traditional religious and cultural importance, or natural features important in human history at the national, state, or local level.

Section 106 of the NHPA requires consultation with the State Historic Preservation Office (SHPO) for proposed actions that may affect historic properties. The Virginia Department of Historic Resources (VDHR) is designated as the SHPO for Virginia. Consultation with the VDHR and federally-recognized Native American tribes is currently ongoing to identify cultural resources that may be impacted by the proposed action.

As part of Section 106 coordination, an area of potential effect (APE) was defined to evaluate any potential cultural resources that could be affected by the proposed action. The APE includes those areas where direct impacts are proposed, as well as areas within which the undertaking may directly or indirectly cause alterations in the character or use of historic properties, including visual effects. For this project, the APE includes the boundaries of the proposed expansion site.

The Virginia Cultural Resources Information System (V-CRIS) was utilized to identify previously mapped cultural resources within 1 mile of the project area (V-CRIS, 2019). According to the VCRIS, no cultural resources have been previously mapped within this radius; however, three Phase I and two Phase II archaeological surveys were conducted by Underwater Archaeological Joint Ventures in the 1980s within 1 mile of the project area. These were all in association with WTAPS. The Phase II investigations identified two sites, 44MT0035 and 44MT0036; the former is associated with a 20th century railroad tank car and the latter a 19th or 20th century ship or barge. Neither of these sites are affected by the placement activities at WTAPS.

Additionally, NOAA's Automated Wreck and Obstruction Information System (AWOIS) was utilized to identify any previously identified submerged wrecks or obstructions within the proposed expansion site. Neither of these were observed within the proposed expansion site, although an abandoned lighthouse is noted approximately 1 mile west of the site.

Given the history of the area and that previous archaeological surveys have observed multiple targets, a Phase I archaeological survey was recommended for the proposed expansion site. In June 2019, USACE contracted SEARCH to survey the proposed expansion site. The survey was conducted in accordance with the most recent version of the *Guidelines for Conducting Historic*

Resource Surveys in Virginia (VDHR, 2017). It was also performed by a professional archaeologist meeting the Secretary of Interior's Professional Qualifications Standards for Archaeology, as stated in 36 CFR 61.

The Phase I archeological survey report was finalized in October 2019. The survey identified ten targets (four are located within the northern expansion site placement cells) that could represent potential historic properties. One of the targets (adjacent to Cell NE-5) was identified as the *Polynia*, a steam yacht later converted to a barge that sank in 1917.

7.7 NOISE

The proposed expansion site is located in open water of the mainstem of the Chesapeake Bay. Daily noise levels are expected to be typical of an open water bay setting (i.e., recreational boating and commercial fishing activities). Large vessel traffic in the navigation channel located east of the proposed expansion site provides occasional noise as vessels pass through. The west boundary of the proposed expansion site is located approximately 3 nm from the nearest shoreline and any noise from the area is dissipated by wind, waves, and distance before it reaches land.

7.8 NAVIGATION

There are no marked navigation channels in or adjacent to the proposed expansion site (NOAA, 2018). Cargo vessel traffic follows a naturally-deep area of the Bay that is located approximately 4 nm east of the east side of the proposed expansion site. The proposed expansion site is used by fishing and recreational boaters, as well as a high density of tug and towing vessels that transit through the area (NOAA, 2019c). There are no navigational obstructions in the proposed expansion site (NOAA, 2018c). Water depths at the proposed expansion site proposed expansion site range from 23 ft to 55 ft MLLW, with an average depth of 36 ft MLLW, providing adequate water depth for recreational and fishing vessels as well as tug and tow vessels.

7.9 RECREATION

Recreational activities in the proposed expansion site include boating and fishing. Sport fish commonly caught in the Chesapeake Bay include striped bass, Atlantic croaker, spot, herring, summer flounder, and kingfishes (NMFS, 2015). Striped bass, also referred to as rockfish, are the top recreational sportfish in the Chesapeake Bay (NOAA, 2019). No oyster sites or artificial reef dive sites are located in the proposed expansion site.

7.10 FISHERIES

Chesapeake Bay fisheries play a critical role in the culture, economy, and ecology of the region. These species are ecologically and economically important for the Chesapeake Bay and may potentially be fished for in the proposed expansion site: blue crab (discussed in Section 7.5.5), menhaden, striped bass, and river herrings (including American shad, hickory shad, blueback herring, and alewife).

Blue Crab
(See Section 7.5.5)

Menhaden
In the past century, all but one Atlantic Coast state gradually banned the large scale fishing of menhaden. Today, Virginia is the only state that allows "reduction" (industrial) menhaden fishing, which takes about 80 percent of the catch coastwide. This reduction fishery removes approximately 80,000 tons of menhaden from the Virginia part of the Bay each year (CBF, 2019a).

In 2006, the Atlantic States Marine Fisheries Commission (ASMFC) capped the annual industrial catch in the Chesapeake based on concerns about malnutrition in striped bass and the need to protect the Bay ecosystem from localized depletion. This included a cap on the reduction harvest. In November 2011, the ASMFC decided to set new standards for menhaden management. In November 2017, the ASMFC approved Amendment 3 which included a management action to decrease the reduction fishery harvest cap in the Chesapeake Bay by 41.5 percent, to 51,000 metric tons, protecting important nursery habitat (CBF, 2019a).

Striped Bass
The striped bass is one of the most sought-after commercial and recreational fish in the Chesapeake Bay. A number of environmental challenges in the Chesapeake Bay threaten striped bass, including habitat loss, lack of prey, pollution, hypoxia and disease. Climate-driven changes in temperature and rain patterns may further impact striped bass' ability to bounce back from declines. Striped bass experienced a severe decline in the 1970s and 1980s that scientists attributed to overfishing, which may have made striped bass more susceptible to pollution and other stresses. In response to this downturn, Congress passed the Atlantic Striped Bass Conservation Act in 1984. Maryland and Delaware imposed a fishing moratoria on striped bass from 1985 through 1989, and Virginia imposed a 1 year moratorium in 1989. The Chesapeake fishery reopened in 1990 (CBP, 2019b). In order to reduce fish mortality and restore a thriving striped bass population, the ASMFC recently voted to begin developing changes to the Interstate Fishery Management Plan for the striped bass harvest coastwide (CBF, 2019b).

River Herrings
Alosines are anadromous—they migrate from the ocean waters into fresh waters to spawn. Commercial landings for all these species have declined dramatically from historic highs. Currently, there is a moratorium on the harvest of American shad from Virginia's waters that has been in place since 1994. American shad stock does not appear to be recovering and are at record lows. A harvest moratorium for river herring in Virginia has been in place since 2012 (NOAA, 2016).

8.0 ENVIRONMENTAL EFFECTS

This section presents the effects from the No-Action Alternative (Alternative 1) and the Preferred Alternative (Alternative 2) on each resource topic discussed in Section 7.0 above. For this analysis, the No-Action Alternative would mean the proposed action would not take place and dredged material would continue to be placed in the WTAPS. The resulting environmental effects from continued placement in the WTAPS would be compared with the effects anticipated from the proposed action (Alternative 2). The environmental effects of the No-Action Alternative are expected to be similar to the environmental effects of Alternative 2, with the exception of effects on overwintering female blue crab.

Table 7 provides a summary of the potential effects of implementing the No-Action Alternative (Alternative 1) and the Preferred Alternative (Alternative 2). Impacts of the No-Action Alternative are not evaluated in this section. These impacts were evaluated in in the 1987 Supplemental Information Report #2 to the 1981 General Design Memorandum (GDM) and Environmental Impact Statement (EIS) (USACE, 1987), and in the 2005 Baltimore Harbor and Channels (Maryland and Virginia) DMMP and Final Tiered EIS (USACE, 2005).

Table 7. Summary of potential effects from Alternative 1 (No-Action) and Alternative 2 (Preferred Alternative).

Resource Topic	Alternative 1 – No Action	Alternative 2 – Preferred Alternative
Hydrology and Water Quality	Overall water circulation is expected to be unimpacted. Minor, short-term turbidity impacts. Suspended particles are expected to settle out within a short time, with no long-term measurable effects on water quality	Overall water circulation is expected to be unimpacted. Minor, short-term turbidity impacts. Suspended particles are expected to settle out within a short time, with no long-term measurable effects on water quality.
Bathymetry	Over the life of the project, the depth of the site could change from an average depth of -35 ft MLLW to -30 ft MLLW. No changes to physiography.	Over the life of the project (until 2100), the depth of the site could change from an average depth of -36 ft MLLW to -30 ft MLLW. Infilling the trough with dredged material would change this area from a bay-stem channel to a bay-stem plain.
Geology and Sediments	No geologic changes are expected.	No geologic changes are expected.
Air Quality	Minor, short-term, localized impacts associated with the transport of dredged material to the placement site. No long term effects anticipated. Adjacent counties are in attainment with the Clean Air Act.	Minor, short-term, localized impacts associated with the transport of dredged material to the placement site. No long term effects anticipated. Adjacent counties are in attainment with the Clean Air Act.
Federally-Listed Threatened and Endangered Species	Species under NMFS purview - may adversely affect, but is not likely to jeopardize the continued existence of any DPS of Atlantic sturgeon, Kemp's ridley or green sea turtles, or the Northwest Atlantic DPS of loggerhead sea turtles. Not likely to adversely affect leatherback sea turtles or shortnose sturgeon. Species under USFWS purview – No effect on the Northern long-eared bat.	Species under NMFS purview - may adversely affect, but is not likely to jeopardize the continued existence of any DPS of Atlantic sturgeon, Kemp's ridley or green sea turtles, or the Northwest Atlantic DPS of loggerhead sea turtles. Not likely to adversely affect leatherback sea turtle or shortnose sturgeon. Species under USFWS purview – No effect on the Northern long-eared bat.
State-Listed Threatened and Endangered Species	May adversely affect, but is not likely to jeopardize the continued existence of Atlantic sturgeon, Kemp's ridley or loggerhead sea turtles. Not likely to adversely affect leatherback sea turtles. No effect on the hawksbill sea turtle or the West Indian Manatee.	May adversely affect, but is not likely to jeopardize the continued existence of Atlantic sturgeon, Kemp's ridley or loggerhead sea turtles. Not likely to adversely affect leatherback sea turtles. No effect on the hawksbill sea turtle or the West Indian Manatee.

Resource Topic	Alternative 1 – No Action	Alternative 2 – Preferred Alternative
Finfish	Some slow-moving benthic individuals, as well as eggs and larvae would be buried by sediment. Adverse impacts to the bottom feeder finfish population are expected to be negligible. Turbidity may cause temporarily disorientation for some finfish. Most finfish are expected to be able to avoid being directly impacted by placement activities, and would be temporarily displaced during placement operation. No significant impacts to finfish expected.	Some slow-moving benthic individuals, as well as eggs and larvae would be buried by sediment. Adverse impacts to the bottom feeder finfish population are expected to be negligible. Turbidity may cause temporarily disorientation for some finfish. Most finfish are expected to be able to avoid being directly impacted by placement activities, and would be temporarily displaced during placement operation. No significant impacts to finfish expected.
Essential Fish Habitat	Habitats for managed species and their prey would be temporarily effected during placement activities.	Habitats for managed species and their prey would be temporarily effected during placement activities.
Benthic Community	It is expected that the benthic community will recolonize within 1.5 years and that the community will have an opportunity to fully recover following each dredged material placement event and prior to the subsequent such event.	It is expected that the benthic community will recolonize within 1.5 years and that the community will have an opportunity to fully recover following each dredged material placement event and prior to the subsequent such event.
Blue Crab	Potential adverse effects depending on the density of crab in the area during placement activities. Direct mortality, by burial or asphyxiation, of overwintering female crab, when these crab are present within the dredged material placement area, especially in overburden thicknesses greater than 30 cm.	Minor to negligible adverse effects. WTAPSNE is believed to support significantly fewer overwintering female crab than WTAPS, and thus the project would constitute, overall, a net reduction of the effect to blue crab.
Cultural Resources	Phase II investigations identified two sites, 44MT0035 and 44MT0036; the former is associated with a 20th century railroad tank car and the latter a 19th or 20th century ship or barge. Neither of these sites are affected by placement activities at WTAPS.	The Phase I archeological survey report identified ten targets (four are located within the northern expansion site cells) that could represent potential historic properties. To avoid any potential adverse effects to historic properties, USACE plans to place material only in Cell NE-6, which does not contain any potential historic properties. USACE developed

Resource Topic	Alternative 1 – No Action	Alternative 2 – Preferred Alternative
		a PA in consultation with VADHR that includes procedures for evaluating the project's effects to historic properties in future placement cycles outside of Cell NE-6.
Noise	Short-term and restricted to the immediate vicinity of the activity.	Short-term and restricted to the immediate vicinity of the activity.
Navigation	The hopper dredge will not impede navigation in a marked navigation channel. To minimize the risk of collision, USACE would require the contractor to comply with USCG regulations.	The hopper dredge will not impede navigation in a marked navigation channel. To minimize the risk of collision, USACE would require the contractor to comply with USCG regulations.
Recreation	Temporary impacts to recreation during placement activities. The public will be able to access the area shortly after placement activities occur.	Temporary impacts to recreation during placement activities. The public will be able to access the area shortly after placement activities occur.
Fisheries	Fishing would be shifted elsewhere during placement activities. The proposed action would be expected to have a negligible or minor impact on fisheries.	Fishing would be shifted elsewhere during placement activities. The proposed action would be expected to have a negligible or minor impact on fisheries.
Environmental Justice	No disproportionally high and adverse human health or environmental effects on minority populations and low-income populations in the United States.	No disproportionally high and adverse human health or environmental effects on minority populations and low-income populations in the United States.

8.1 HYDROLOGY AND WATER QUALITY

Upon placement, dredged material will partition into a main cloud, which will descend vertically. The main cloud would descend to the bottom at a high velocity, leaving behind a turbidity cloud (USACE, 2005).

Open water placement activities are expected to create some degree of turbidity in excess of ambient conditions up to 6,500 ft from the discharge location. During placement activities, suspended sediment levels can be as high as 500 mg/l within 250 feet of the discharge location, decreasing to background levels (i.e., 15 to 100 mg/l depending on location and sea conditions) within 1,000 to 6,500 feet of the discharge location. Total suspended solids (TSS) concentrations near the center of the plume created by the placement of dredged material have been observed to reach near background levels in 35 to 45 minutes (NOAA, 2017). Furthermore, the high flushing rate (due to the water exchange and tidal fluctuations) of the Chesapeake Bay is anticipated to minimize potential turbidity plumes and cause them to be more quickly dispersed, with no long-term measurable impacts to water quality.

The proposed expansion site is susceptible to wave-induced velocities that may cause sediments to become resuspended in the water column. The site is relatively shallow, with an average depth of 36 ft, and the area can experience wind speeds of 35 miles per hour or greater. The combination of water depth and high wind speeds may cause wave-induced velocities that could resuspend deposited materials. This generally occurs less than 48 hours per year. Material eroded out of this placement site would be expected to move northward in the Bay or locally to deeper parts of the Bay floor (USACE, 1981).

Based on the sampling results, the placement of dredged material from the York Spit Channel into WTAPSNE would not be toxic to marine life. Metals of concern and PAHs occur at low levels, and would likely settle out onto the bottom remaining adsorbed to sediment and not be released into the water column.

Overall water circulation is expected to be unimpacted. No measurable changes in temperature, salinity, oxygen content or other chemical characteristics are expected. It is possible that infilling the trough with dredged material could reduce hypoxic conditions in the proposed expansion site. Water quality impacts during open water placement activities are expected to be temporary, minimal and similar to conditions of past placement events in WTAPS. Suspended particles are expected to settle out within a short time, with no long-term measurable effects on water quality. Thus, the proposed action would not result in any significant adverse impacts to water quality.

8.2 BATHYMETRY

Placement of dredged material into the proposed expansion site will change the bathymetry of the site. Depending on the amount of material dredged from the York Spit Channel during one maintenance dredging cycle, the thickness of the material that would be deposited in one cycle would range from 2 inches to 2 ft thick. It is expected that over time, some of the material will erode out of the placement site. Past benthic monitoring has not focused on the impacts of

sediment movement within WTAPS, though reference sites to the south of the placement area monitored by Schaffner (2010) and monitored sites in WTAPS showed evidence that non-local processes influenced patterns of benthic community recovery. A quarter-mile buffer area has been established for placement activities at the northern expansion site, which may limit sediment dispersal to areas outside the designated placement cells. The capacity of WTAPSNE is over 30 mcy, which assumes placement of dredged material within the site boundaries up to an approximate depth of -30 ft MLLW. Over the life of the project (until 2100), the depth of the site could change from an average depth of -36 ft MLLW to -30 ft MLLW.

A deep trough with a maximum depth of -55 ft MLLW termed "bay-stem channel" runs lengthwise through the site. If this channel was filled with dredged material, this area would change from a bay-stem channel to a bay-stem plain. As stated in Section 8.1 above, it is possible that infilling the trough with dredged material could reduce hypoxic conditions in the proposed expansion site.

8.3 GEOLOGY AND SEDIMENTS

Quality and texture of sediments dredged from the York Spit Channel is expected to be similar to the existing sediments in WTAPSNE. Therefore, no changes in geology in the proposed expansion site are expected.

8.4 AIR QUALITY

Minor, short-term, localized direct impacts to air quality would occur as a result of dredging activities that generate exhaust emissions every 4 years. Emissions will cease once construction stops. No long-term impacts to air quality would occur. Emissions would not pose a significant risk to the environment or the health of workers or the public because they will be minor in quantity and short-term in nature. Because the proposed expansion site is in attainment, in compliance with the approved air quality Implementation Plan in Virginia, and no new stationary emissions sources will be created as part of the proposed action, no air quality conformity analysis is required.

8.5 FISH AND WILDLIFE

8.5.1 Threatened and Endangered Species

Federally-listed species

Effects from the No-Action Alternative (continued placement in the WTAPS) on NMFS-trust threatened and endangered species was assessed in the 2018 NMFS Biological Opinion (BO) (F/NER/2018/14816) (NOAA, 2018b). Activities covered under this BO included the construction and maintenance of the Baltimore Harbor and Channels Project Virginia Approach Channels and use of the associated dredged material placement sites. In the BO, NMFS concluded that that these activities may adversely affect, but are not likely to jeopardize the continued existence of any DPS of Atlantic sturgeon, Kemp's ridley or green sea turtles or the Northwest Atlantic DPS of loggerhead sea turtles and is not likely to adversely affect leatherback sea turtles, hawksbill sea turtles, shortnose sturgeon, fin whales, sei whales, blue whale, sperm whales, and North Atlantic right whales. The BO allowed for a certain number of incidental take of listed species, primarily

from dredging and not from placement, over the life of the project (50 years). The BO also included reasonable and prudent measures designed to minimize and monitor the impact of incidental take that might otherwise result from the activities including a time-of-year (TOY) restriction for dredging.

There are two peak windows for turtle activity in the lower Chesapeake Bay; in the spring (March to May) and in the fall (September to November). Restrictions on dredging during both windows was deemed by Baltimore District to be too restrictive to dredging. Additionally, at least 6 contiguous months is required for dredging contracts. Therefore, in consultation with NMFS, USACE makes every effort to avoid dredging during the fall window (from September 1 through November 14) because more turtles have historically been taken during hopper dredge activities in the fall than during the spring. For example, the 2015 hopper dredging contract was impacted by post-Hurricane Sandy work and resulted in dredging occurring from May-Aug 2015. This resulted in 6 turtles takes.

The USACE, in coordination the NMFS, determined that the effects on listed species from the proposed action are similar to the effects considered in the 2018 NMFS Biological Opinion (F/NER/2018/14816) (NOAA, 2018b) for the lower Bay channels and placement areas. In an email dated May 6, 2019, NMFS concurred with the USACE determination that re-initiation is not warranted. Please refer to Appendix B: Endangered Species Act Coordination, for a detailed analysis on the effects of the proposed action on listed species and the rationale for the "no re-initiation" determination.

The USACE determined that there will be no effect to listed species under the purview of USFWS. An effects analysis for the northern long-eared bat can be found in the USFWS Project Review Package located in Appendix B: Endangered Species Act Coordination. Through the online project review process, USFWS concurred with USACE's "no effect" determination in a letter dated February 14, 2019.

State-listed species

The Kemp's ridley, leatherback and loggerhead sea turtles and the Atlantic sturgeon are also federally-listed. An effects analysis for each of these species is included in the Request for Concurrence from NMFS of a No Re-Initiation Determination for WTAPSNE that is located in Appendix B: Endangered Species Act Coordination.

The hawksbill sea turtle is listed as endangered by the Commonwealth of Virginia (VADGIF, 2019). Hawksbill sea turtles are extremely rare in the Chesapeake Bay; only two have been reported since 1979. These turtles prefer tropical and subtropical waters (VIMS, 2019). Since it would be extremely rare for a hawksbill sea turtle to occur in the Chesapeake Bay, the proposed action will have no effect on the hawksbill sea turtle.

The West Indian manatee is listed as endangered by the Commonwealth of Virginia (VADGIF, 2019). The West Indian manatee is rarely seen in the Chesapeake Bay; its northernmost range is the Georgia coast. The West Indian manatee is found along the coast of Florida and in the Caribbean (USFWS, 2008). The last local live sighting was in November 2017 at the VIMS boat

basin (Daily Press, 2017). Since it would be extremely rare for a West Indian manatee to occur in the Chesapeake Bay, the proposed action will have no effect on the West Indian manatee.

8.5.2 Finfish

Available literature regarding specific effects to fish behavior from dredged material placement activities is generally confined to turbidity, with little information available on effects from other aspects of dredging and placement.

It is anticipated that some slow-moving benthic individuals (bottom feeder finfish including windowpane, summer and winter flounder, scup, hogchoker, northern sea robin, northern stargazer (CBP, 2019a)), as well as larvae and eggs suspended in the water column, would be buried by 2 inches to 2 ft thick of sediment as a result of placement activities. Benthic individuals would be particularly vulnerable during months of coldest bottom water when fish could be lethargic.

It is expected that individuals would be permanently lost; however, impacts to the bottom feeder finfish population are expected to be negligible. Turbidity may cause temporary disorientation for some finfish. Because of their high mobility, most finfish are expected to be able to avoid being directly impacted by placement activities and would be temporarily displaced during placement operation. The existing community is also probably exposed to episodic oxygen stress and hypoxia, at least during some summers. Therefore, it is highly unlikely that finfish will suffer significant impacts as a result of placement activities.

8.5.3 Essential Fish Habitat

Please see Appendix C: Essential Fish Habitat Assessment for a comprehensive effects analysis for each species with EFH in the proposed expansion site. NMFS conservation recommendations and the USACE response to the recommendations and are included in Appendix C. In summary, potential adverse effects to EFH of the 14 species described in this assessment would be periodic and concurrent with maintenance dredging of the York Spit Channel roughly every 4 years. Potential adverse effects due to turbidity and sedimentation would be temporary. The proposed dredged material placement would potentially disturb motile life stages of managed fish species, at least temporarily, which may cause them to seek alternative habitats elsewhere. This avoidance would occur only when dredged material placement activities are underway. The proposed placement sites comprise a small proportion of the suitable area within the lower Bay. There would be plentiful habitat available throughout the Bay, to include adjacent waters, from which fishes can forage during project activities. In-water work would occur over several months, and once completed, the local habitats would again be available to all managed fish species and their prey.

8.5.4 Benthic Community

This community is characterized by opportunistic and equilibrium species that are adapted to and tolerant of bottom-disturbing events such as major storms and flows. The existing community is also probably exposed to episodic oxygen stress and hypoxia, at least during some summers.

Bottom-dump placement of dredged material typically produces mounded deposits on the bay bottom, and the thickness of such mounds and the force of impacting sediment will be lethal to benthic organisms within the footprint of the deposit.

Impacts of dredged material placement on benthic habitats are varied and difficult to predict. Although many projects have been monitored and substantial literature exists on the subject, few generalizations can be made about typical recovery[11] rates because biological responses are influenced by numerous factors, including site-specific bathymetry, hydrodynamics, thickness of sediments, spatial scale of the disturbance, sediment type and the timing and frequency of disturbance. In general, recovery of the benthic community in deep, stable habitats is measured in years (Wilber and Clarke, 2007).

A 2 year study by VIMS showed that benthic communities in WTAPS recovered fairly quickly, particularly when the depth of sediment deposited at the disposal site was relatively shallow. Sites buried by 6 inches or less of dredged material were minimally affected, with many of the organisms able to burrow back up to the surface. These organisms likely evolved this ability in response to frequent burial by tides and storms in the lower Chesapeake Bay. With deeper burial, beneath more than 6 inches of sediment, it took 1.5 years or less for the study sites to converge with reference sites in terms of species richness, abundance, biomass, and community composition. Recolonization via immigration from nearby areas was apparently more important for re-establishing benthic communities than upward migration of animals through the new sediment layers (Schaffner, 2010).

It is expected that the dredged material placement locations would return to pre-placement conditions following the project activities, with an approximation that the benthic community would become recolonized within 1.5 years. Placement activities would occur in accordance with the anticipated York Spit Channel maintenance schedule, or as necessary as a result of shoaling from storm events and other environmental factors. The benthic community would have an opportunity to fully recover following each dredged material placement event and prior to the subsequent such event.

8.5.5 Blue Crab

The effects of dredged material placement upon blue crab survival was studied by Norfolk District and Engineer Research and Development Center (ERDC), using a controlled mesocosm study. Burial of mature female blue crab at depths of 5 and 10 cm increased mortality, whereas few crab survived burial depths of 30 cm. There did not appear to be an effect of burial duration, i.e., mortality rates did not increase over time. Although water temperatures reached lows of -2°C, the high survival rates of control crab suggest low temperatures alone did not cause mortality. In addition, because survivors were recovered at the sediment surface, it appears that an inability to ascend through the sediment overburden was the cause of death, with a burial depth of 30 cm most associated with having very few crab recovered at the sediment surface (USACE, 2017b).

[11] Recovery is defined as a return of benthic resources to a baseline (pre-impact) condition.

Blue crab populations in the Bay show substantial variation from year to year as a function of multiple natural and anthropogenic factors. Many factors influence fluctuations in blue crab abundances, including larval success, prey availability, predator abundance, habitat degradation, and disease. Overwintering mortality is another important factor affecting the variability in population size. Overwintering studies have found that smaller blue crab are more likely to survive intense cold winters and mature females are more susceptible to mortality. Overwintering blue crab survival is highest in warmer, saline waters (USACE, 2017b).

Short-term project effects to blue crab would consist primarily of direct mortality, by burial or asphyxiation, of overwintering female crab, when these crab are present within the dredged material placement area. Turbidity would result in suspended particulates within the water column and may temporarily degrade ambient water quality for nutrients, dissolved oxygen content, and other constituents. Turbidity may also clog the gills of fishes and invertebrates within the turbidity plume. Anoxic dredged materials may also contain chemically-reduced sediments which, at least in some circumstances, produce significant chemical oxygen demand (COD) within ambient waters at the site of disposal. In practice, however, this effect is generally mitigated by the entrainment of oxygen-rich surficial waters during overboard placement and by tidal mixing. Cold temperatures reduce the crabs' locomotor ability, and would make overwintering females susceptible to mortality by burial, especially in overburden thicknesses greater than 10cm.

Placement of dredged material into either WTAPS or WTASPNE while female crab are not overwintering (generally from early April to mid-November) presents a higher risk of adverse impacts to sea turtles. The increased risk is not related to the placement site, but to the use of hopper dredges during times of year when the water is warmer. Sea turtles are not present in the Chesapeake Bay during the coldest winter months (NOAA, 2018a). A hopper dredge is the preferred dredge method because it is more cost efficient and generally performs better than other dredge types in rough sea conditions. A hopper dredge removes material from the bottom of the channel in thin layers with hydraulic pressure. Sea turtles are generally present in the lower Chesapeake Bay from April through November. Sea turtles are vulnerable to entrainment in the draghead of the hopper dredge when they are likely to be feeding or resting on the bay bottom. Measures can be taken to minimize adverse impacts to sea turtles including the use of a mechanical dredge instead of a hopper dredge. Mechanical dredging entails removing material by scooping it from the channel bottom using an open bucket or clamshell and then placing it on a barge. It is unlikely that sea turtles would be captured in the mechanical dredge, presumably because they are able to avoid the dredge bucket. However, it is more cost effective to use a hopper dredge than a mechanical dredge. Therefore, because a hopper dredge is more cost effective and to minimize adverse impacts to sea turtles that may be entrained in a hopper dredge, dredging and placement is conducted in the winter months.

When assessing the significance of this effect, however, it must be remembered that the WTAPSNE site supports fewer overwintering female crab than the currently-used WTAPS site. As previously discussed, a deep muddy channel runs through the center of WTAPSNE. According to the Dredge Disposal Effects on Blue Crab Report provided by VIMS (Appendix F), crab density will almost always be low in muddy habitats. It is likely that within the deeper, muddy channel, crab density will almost always be low due to the muddy habitat, which is usually avoided as an

overwintering habitat by blue crab (Lipcius and Knick, 2016). USACE plans to utilize this the deeper channel for placement as practicable. In addition, the expected blue crab take resulting from project implementation is not significant compared to the overall blue crab population of the Bay and typical fishery take.

If, due to placement of dredged material at WTAPSNE, crab habitat becomes more suitable in the area, USACE will reevaluate the use of individual WTAPSNE cells (Figure 4). If habitat alteration occurs, it may take multiple maintenance dredging cycles to alter habitat suitability over the entire WTAPSNE site. In FY 2020, Baltimore District plans to begin a comprehensive evaluation of alternative placement sites and methods through a DMMP for the portion of the Baltimore Harbor and Channels Project located in Virginia.

8.6 CULTURAL RESOURCES

As stated in Section 7.6 above, the Phase I archaeological survey report was finalized in October 2019. The survey report identified ten targets (four are located within the northern expansion site placement cells) that could represent potential historic properties. One of the targets (adjacent to Cell NE-5) was identified as the *Polynia*, a steam yacht later converted to a barge which sank in 1917. To avoid any potential adverse effects to historic properties, USACE is planning to place dredged material only in Cell NE-6, which does not contain any potential historic properties. USACE has developed a PA in consultation with the VDHR that outlines procedures for evaluating the project's effects to historic properties in future placement cycles outside of Cell NE-6. The final PA was executed on December 11, 2019, and is located in Appendix E.

8.7 NOISE

Noise impacts from project equipment are expected to increase in the vicinity during placement operations as a result of engine noise and noise emitted from other job-related equipment. While there is little that can be done to reduce noise during operations, these impacts would be short-term and restricted to the immediate vicinity of the activity. The west boundary of the proposed expansion site is located approximately 3 nm from the nearest shoreline and any noise from the area is dissipated by wind, waves, and distance before it reaches land. No long-term increase in noise would occur within the proposed expansion site. Noise is not expected to be a significant impact.

Many fish and marine mammal species in the Bay use noise to communicate, navigate, breed, and locate sources of food. Sensitivity to noise varies among species, location, and season. Underwater noise influences fish and other marine animal behavior resulting in changes in their hearing sensitivity and behavioral patterns. Sound is crucial to marine animals when they are hunting for prey, avoiding predators, or engaging in social interaction.

It is anticipated that noise produced during placement activities would not cause any mortality to marine life. However, underwater noise from the hopper dredge may alter the behavior of fish in the vicinity of the area during placement activities. Fish may alter swim speed and direction and

fish communication could be affected. Overall noise impacts to marine life are expected to be minor and temporary.

8.8 NAVIGATION

The proposed action will not encroach into and impede navigation in a marked navigation channel. However, recreational and fishing vessels, and tow and tug vessels transit through the area. To minimize the risk of collision, USACE would utilize measures such as posting a Notice to Mariners, maintaining communication with passing vessels, and conducting operations in accordance with general regulations of the Department of the Army and the USCG governing lights and day signals. Utilizing these measures, impacts to navigation are anticipated to be negligible to minor.

8.9 RECREATION

Recreational vessels would not be able to access the waters of the proposed expansion site during placement activities. Fish may temporarily leave the area during placement activities. However, impacts to recreation will be minor and temporary and the public would be able to access the area shortly after placement activities occur.

8.10 FISHERIES

Fishermen would avoid the area during placement activities. Fishing would be shifted elsewhere. In light of the vast area of the Chesapeake Bay available in the vicinity of the proposed expansion site of equivalent value as fishing grounds, the proposed action would be expected to have a negligible or minor impact on fisheries. Placement activities would generate turbidity, but turbid conditions would be temporary with no anticipated impact on commercial fishing. Fisheries impacts would be comparable to those from the use of WTAPS, just shifted further north. However, because placement would be shifted north away from higher density blue crab wintering areas, there would be a reduction in adverse impacts to the blue crab population and thus to the blue crab fishery.

9.0 CUMULATIVE EFFECTS

The principal cumulative effects concerns are to bay bottom. Historical use of open water placement sites within the lower Chesapeake Bay has been necessary to accommodate large volumes of dredged material from the Baltimore Harbor and Channels Project. The project vicinity has historically been used for the placement of dredged material since the early 1960s. The proposed action would impact a new area of bay bottom that has not been previously impacted by material placement. The volumes, frequency, and acreage impacted by placement activities during any given dredging cycle of the York Spit Channel would not change, relative to the No Action Alternative. At potential greatest extent, over multiple dredging cycles, the area of bay bottom impacted would be cumulative greater. However, benthic recovery to pre-project conditions is anticipated within 2 years, more quickly than the 4 year dredging cycle, and therefore the total area used would have minimal bearing on benthic health and no adverse cumulative impacts.

The allowable placement area would be expanded, enabling dredged material to be placed in the northern extension area, and thereby mitigating adverse impacts on overwintering female blue crab that currently occurs under the No-Action Alternative. Therefore, no adverse cumulative impacts to blue crab are anticipated as a result of the proposed action.

Improvements to the Port of Baltimore, including improvements to berthing facilities at the Seagirt Marine Terminal and development of a new terminal at Tradepoint Atlantic (Sparrows Point) will support increased vessel traffic and increased vessel size utilizing York Spit Channel. These activities will not affect the maintenance dredging cycle and therefore will not affect lower Chesapeake Bay bottom habitat.

Other activities planned or ongoing in the Lower Chesapeake Bay affecting bay bottom and the water column include ongoing maintenance and deepening of navigation channels serving The Port of Virginia. Additionally, Virginia Port growth is anticipated to increase throughout the next 50 years, and a new port facility is planned. Additional development, including construction of the Third Crossing (I-64 Hampton Roads Crossing) and expansion of the Chesapeake Bay Bridge Tunnel (parallel Thimble Shoal tunnels), is planned in the future. The implementation of the Preferred Alternative is not predicted to substantially cumulatively impact bay bottom with the aforementioned actions (USACE, 2018b).

Dissolved oxygen levels in deeper waters in the middle Bay is a major concern. There are efforts underway by many entities to improve water quality in the Chesapeake Bay through a Total Maximum Daily Load (TMDL). Positive trends in Bay water quality would not be impacted by placement activities, because nutrient releases into the water column will remain the same as the No-Action Alternative over the dredging cycle.

Placement of dredged material at the northern expansion site would result in adverse cumulative effects to the USACE hopper dredge fleet. The travel distance to the northern expansion site versus the travel distance to WTAPS (average distance of 14.3 nm vs. 8.5 nm, respectively) would add approximately 50 days to the duration of the project. There is a high demand for hopper dredges for USACE dredging projects, and adding 50 days to the duration of the project puts stress on the USACE hopper dredge fleet with the potential for the loss of work. Cumulative environmental impacts of moving the hopper dredging fleet around are uncertain.

10.0 MITIGATION

Available data indicate that WTAPS, particularly the southern portion, provides habitat for a high density of overwintering female blue crab. By proceeding with the proposed action, adverse effects to these overwintering female crab would be greatly reduced, relative to the No-Action alternative. Although blue crab is not managed under the Magnuson-Stevens Act, minimizing impacts to blue crab mitigates EFH impacts for those managed fish species evaluated in this document for which blue crab is an important prey item.

To avoid/minimize adverse effects to ESA-listed sea turtles, USACE makes every effort to avoid dredging of the York Spit Channel from September 1 through November 14, of any year. The

2015 hopper dredging contract was impacted by post-Hurricane Sandy work and resulted in dredging occurring from May through Aug 2015. This resulted in 6 turtles takes. Therefore, if dredging does not occur during this period, dredged material placement would not occur at the proposed expansion site during this period. Furthermore, USACE generally seeks to perform this work in the winter and early spring, subject to availability of dredging contractors. This TOY would also help to avoid and minimize effects to sandbar shark HAPC used for pupping and nursery activities (occurring from May 1 to October 30).

Bottom-dump placement of dredged material typically produces mounded deposits on the bay bottom, and the thickness of such mounds and the force of impacting sediment will be lethal to benthic organisms within the footprint of the deposit. The dredging contractors open the hopper of hopper dredges while they are moving to assist in spreading the material. The hopper operators attempt to slowly release material, but the process is difficult to control and may take 5 to 10 minutes to completely empty, with about 75 percent or more of the material discharged within the first minute. If significant mounds are formed during placement, or if placement accumulates above the allowable depth, the contractor is required to drag the area to make the bottom more uniform. The USACE considered requiring the contractor to smooth all deposits to a roughly uniform thickness, but reworking the sediments in this way would be extremely costly, time consuming and likely ineffective. It would extend the duration of project disturbance, increase vessel traffic and emissions, and exacerbate turbidity. Moreover, distributing the sediments after placement would merely spread adverse effects over a much larger area. While it might result in somewhat-reduced mortality within the deposit footprint, it would greatly increase mortality and sublethal stress on benthic communities over a much larger area, and would result in delayed post-disturbance recovery and greater temporal loss of functions. If deposited "mounds" are left in place, natural currents will gradually redistribute sediments, but this process would occur at a rate similar to that of natural sediment movements within the area, to which native benthic communities can acclimate with minimal risk of harm. For these reasons, USACE believes that spreading deposited material is not a viable measure to reduce project impacts, and would likely increase adverse effects to the benthic community.

11.0 COMPLIANCE OF THE PROPOSED ACTION WITH ENVIRONMENTAL PROTECTION STATUTES AND OTHER ENVIRONMENTAL REQUIREMENTS

Coastal Zone Management Act of 1972. Baltimore District certifies that the proposed action is consistent to the maximum extent practicable with the enforceable policies of the approved CZM plan for the Commonwealth of Virginia. On September 17, 2019, VADEQ conditionally concurred that the proposed action is consistent with Virginia's CZM program.

Clean Water Act of 1972. On October 30, 2013, the Commonwealth of Virginia issued a Virginia Water Protection Permit (13-0593) and a Section 401 Water Quality Certification for maintenance dredging of the York Spit Channel and for placement of dredged material into WTAPS. The permit and WQC expires on October 29, 2028. In a letter dated 17 September 2019, the Commonwealth of Virginia stated that the section 401 WQC requirements were met through the CZM conditional consistency determination provided by VADEQ on 17 September 2019.

Coastal Barrier Resources Act (CBRA) of 1982. No coastal zones covered under CBRA will be impacted by the proposed action. The Coastal Barrier Resources System mapper, created by USFWS, was referenced to verify there are no CBRA areas within the proposed expansion site.

Rivers and Harbors Act of 1899. The proposed action would not obstruct navigable waters of the United States.

Executive Order 13045, Protection of Children. The proposed action complies with EO 13045, "Protection of Children from Environmental Health Risks and Safety Risks", and does not represent disproportionally high and adverse environmental health or safety risks to children in the United States. The proposed expansion site is located in open water of the Chesapeake Bay and uninhabited; thus, no changes in demographics, housing, or public services would occur as a result of the proposed action. With respect to the protection of children, the likelihood of disproportionate risk to children is not significant. The proposed action does not involve activities that would pose any disproportionate environmental health risk or safety risk to children.

Executive Order 12898, Environmental Justice. The proposed action complies with EO 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations", and does not represent disproportionally high and adverse human health or environmental effects on minority populations and low-income populations in the United States. The proposed action is not designed to create a benefit for any group or individual. A review and evaluation of the proposed modification has not disclosed the existence of identifiable minority or low-income communities that would be adversely impacted.

Table 8. Compliance of the proposed action with environmental protection statutes and other environmental requirements.

Federal Statutes	Level of Compliance[1]
Anadromous Fish Conservation Act	N/A
Archeological and Historic Preservation Act	Full
Clean Air Act	Full
Clean Water Act	Full
Coastal Barrier Resources Act	N/A
Coastal Zone Management Act	Full
Comprehensive Environmental Response, Compensation and Liability Act	N/A
Endangered Species Act	Full
Estuary Protection Act	Full
Farmland Protection Policy Act	N/A
Federal Water Project Recreation Act	N/A
Fish and Wildlife Coordination Act	Full
Land and Water Conservation Fund Act	N/A
Magnuson-Stevens Act	Full
Marine Mammal Protection Act	N/A
Marine Protection, Research and Sanctuaries Act	N/A
National Environmental Policy Act	Full
National Historic Preservation Act	Full
Noise Control Act	Full
Resource Conservation and Recovery Act	N/A
Rivers and Harbors Act	Full
Safe Drinking Water Act	N/A
Solid Waste Disposal Act	N/A
Toxic Substances Control Act	N/A
Water Resources Planning Act	N/A
Watershed Protection and Flood Prevention Act	N/A
Wetlands Conservation Act	N/A
Wild and Scenic Rivers Act	N/A
Executive Orders (E.O.)	
Migratory Bird (E.O. 13186)	Full
Protection and Enhancement of Environmental Quality (E.O. 11514)	Full
Protection and Enhancement of Cultural Environment (E.O. 11593)	Full
Floodplain Management (E.O. 11988)	N/A
Protection of Wetlands (E.O. 11990)	N/A
Environmental Justice in Minority and Low-Income Populations (E.O. 12898)	Full
Protection of Children from Health Risks and Safety Risks (E.O. 13045)	Full
Chesapeake Bay Protection and Restoration (E.O. 13508)	Full
Invasive Species (E.O. 13112)	N/A
Indian Sacred Sites (E.O. 13007)	N/A
Stewardship of the Oceans, Our Coasts and the Great Lakes (E.O. 13547)	Full
Streamlining Service Delivery and Improving Customer Service (E.O. 13571)	Full
Facilitation of Cooperative Conservation (E.O. 13352)	Full

[1]Level of Compliance:
Full Compliance (Full): Having met all requirements of the federal statute, executive order (E.O.), or other environmental requirements.
Partial Compliance (Partial): Having partially met all requirements of the federal statute, E.O., or other environmental requirements. See Section 5.0, Environmental Consequences, for an explanation of each partial level of compliance listed in the table.
Not Applicable (N/A): No requirements for the federal statute, E.O., or other environmental requirements.

12.0 CONCLUSION

The USACE, Baltimore District has determined that no significant impacts on the quality of the human environment are projected to occur upon implementation of the proposed action. The District made this determination based on the following:

a. The WTAPSNE would be an extension of the existing authorized WTAPS. Effects on the human environment from placement of dredged material in WTAPS were evaluated in the 1987 Supplement #2 to the 1981 General Design Memorandum and EIS, and in the 2005 Baltimore Harbor and Channels (Maryland and Virginia) DMMP and Final Tiered EIS.
b. The proposed action would not create new or additional impacts, relative to the No-Action Alternative. The volumes, frequency and acreage impacted by placement activities during any given dredging cycle of the York Spit Channel would not change. It would merely expand the allowable placement area, to enable dredged material to be placed in the northern extension area, and thereby mitigate adverse impacts on overwintering female blue crab that currently occurs under the No-Action Alternative.
c. Aside from mitigating impacts to Chesapeake Bay blue crab population associated with the No-Action Alternative, the proposed action is not anticipated to have any other significantly different effects on the human environment.
d. The project vicinity has historically been used for the placement of dredged material since the early 1960s. The proposed action would shift impacts to a different location, but would not create new or additional impacts. Therefore, no adverse cumulative impacts are anticipated as a result of the proposed action.

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WOLF TRAP ALTERNATE OPEN WATER PLACEMENT SITE
NORTHERN EXTENSION
FINAL ENVIRONMENTAL ASSESSMENT
OCTOBER 2019

AGENCY AND TRIBAL COORDINATION AND PUBLIC INVOLVEMENT APPENDIX

TABLE OF CONTENTS

AGENCY AND TRIBAL COORDINATION TABLE

Agency/Tribe	Date USACE Coordination Letter Sent	Date Received Comments from Agency/Tribe
U.S. EPA Region 3	26 Feb 2019	26 Mar 2019
U.S. Fish and Wildlife Service (Fish and Wildlife Coordination Act and Section 7 Coordination)	26 Feb 2019	Self-Certification Letter included in Appendix B.
National Marine Fisheries Service (NMFS), Section 7 Coordination	10 April 2019	Informal email correspondence in April 2019. Email correspondence is included in Appendix B.
NMFS Essential Fish Habitat (EFH) Coordination	05 April 2019	Email on 05 April 2019 acknowledged receipt of letter and draft EFH assessment. Comments on draft EFH assessment received on 07 June 2019. EFH conservation recommendations received on 24 September 2019. Email correspondence and documents are included in Appendix C.
Virginia Marine Resources Commission	26 Feb 2019	Scoping comments received on 14 Mar 2019 (included in this appendix). Final comments included in the VADEQ 17 September 2019 Coastal Zone Management Act (CZMA) Conditional Consistency Determination and in the 08 October 2019 VADEQ Amendment to the CZMA Conditional Consistency Determination (Appendix G).
Virginia Department of Environmental Quality (VADEQ)	26 Feb 2019	VADEQ: Scoping comments received on 14 Mar 2019 (included in this appendix). CZMA Conditional Consistency Determination received on 17 September 2019 and an amendment to the CZMA Conditional Consistency Determination received on 08 October 2019 (Appendix G). VADEQ (Chesapeake Bay Preservation Act): 14 Mar 2019 Virginia Institute of Marine Science: 18 Mar 2019 Virginia Department of Health: 19 Mar 2019
Virginia Department of Conservation and Recreation/Game and Inland Fisheries	26 Feb 2019	27 Mar 2019

Agency/Tribe	Date USACE Coordination Letter Sent	Date Received Comments from Agency/Tribe
Virginia State Historic Preservation Office	26 Feb 2019	Formal correspondence included in Appendix E.
Delaware Nation	26 Feb 2019	11 Apr 2019
Pamunkey Indian Tribe	26 Feb 2019	No response received

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

FEB 26 2019

Planning Division

Mr. Cosmo Servidio
Regional Administrator
U.S. Environmental Protection Agency
Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

Dear Mr. Servidio:

The U.S. Army Corps of Engineers (USACE), Baltimore District, is preparing an Environmental Assessment (EA) regarding a proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) located in the Virginia waters of the Chesapeake Bay, east of Mathews County, Virginia. The WTAPS would be extended to the north, increasing the size of the placement site by approximately 3,900 acres. The WTAPS northern extension would serve as an open water placement site for dredged material. The purpose of extending the WTAPS is to minimize adverse impacts to female blue crabs that overwinter in the existing WTAPS. The deeper, muddy channel in the WTAPS northern extension does not provide suitable habitat for overwintering female blue crabs. The EA will evaluate the effects to the natural and human environment from placement of dredged material into the WTAPS northern extension. Dredging activities would not be included in the EA.

USACE is proposing to place approximately two million cubic yards of dredged material from the York Spit Channel into the WTAPS northern extension during the initial placement event that is expected to occur in the fall of 2019. Dredging would be conducted in one dredging cycle that would last for approximately 4½ months. After initial placement into the WTAPS northern extension, it is anticipated that approximately 1.5 million cubic yards of dredged material from the York Spit Channel would be placed into the site approximately every 4 years. The volume of the site was calculated to be over 30 million cubic yards, using an allowable water depth of 30 feet, which generally matches the bathymetry surrounding the site and would allow placement to surrounding depths. USACE expects that open water placement into the WTAPS northern extension would not occur from September 1 through November 14, consistent with a time-of-year restriction for dredging in the York Spit Channel established to protect federally-listed sea turtles.

USACE is preparing the EA in accordance with the National Environmental Policy Act. The draft EA is expected to be released to the public in the summer of 2019. Please provide any information or comments your agency may have that may assist us in the preparation of the EA within 30 days of the date of this letter. If you have any questions, please contact Kristina May by email at Kristina.K.May@usace.army.mil or by telephone at 410-962-6100.

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division

Enclosure

From:	Hwang, Nora
To:	May, Kristina K CIV USARMY CENAB (USA)
Cc:	Okorn, Barbara
Subject:	[Non-DoD Source] WTAPS scoping comments
Date:	Tuesday, March 26, 2019 12:06:16 PM

Dear Ms. May,

EPA has reviewed your letter dated February 26, 2018 regarding the Environmental Assessment (EA) for an extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS). The EA plans to evaluate the effects on the natural and human environment of extending WTAPS northward to minimize adverse impacts to female blue crabs that overwinter in the existing WTAPS. We understand that the study is being done in compliance with the National Environmental Policy Act (NEPA) and CEQ regulations implementing NEPA. Please find below recommendations for the scope of analysis for the proposed study.

* The EA should include a clear explanation of the underlying purpose and need for the proposed action. The purpose and need statement is important because it helps explain why the proposed action is being undertaken, the objectives the project intends to achieve, and the measures to determine how well alternatives meet need. The purpose of the proposed action is typically the specific objective of the activity. The need should explain the underlying problem for why the project is necessary.
* Please address in the EA if sediment fate and transport modeling will be completed for inclusion in the EA. Specifically, it is recommended that the EA addresses the potential for sediment to move south from the northern extension into the established blue crab habitat.
* The Alternatives Analysis is central to the EA. The analysis should include other alternative sites considered and eliminated from consideration or alternative site designs of the Preferred Alternative used to determine the least environmentally intrusive alternative. Specifically, the EA should detail other locations considered for disposal of the York Spit Channel dredged material, including ocean disposal sites.
* EPA recommends long-term capacity and sustainability of WTAPS be presented in the EA. It is recommended that the EA document how the lifespan of the facility compares to others in the area, if other sites will be used for material dredged from York Spit or if dredged material from sites other than York Spit will be placed in the northern extension, and the history of using the WTAPS southern portion for dredged material disposal.
* Please include how USACE would proceed if the northern extension site becomes suitable blue crab wintering habitat as it gets more shallow and sandy as a result of dredged material placement. For reference, it is recommended that the EA include the current elevation of the southern portion of WTAPS.
* Referencing relevant information from the Baltimore Harbor and Channels Dredged Material Management Plan (DMMP) and Inland Testing Manual may be appropriate to include, such as planned sampling and reevaluation of sediments dredged from York Spit.
* It is recommended that a description of aquatic resources and functions be included in the NEPA document. The type and quality of aquatic resources within the proposed project area should be identified and assessed, with an emphasis on the benthic environment. Please address the current and planned water quality monitoring and anticipated changes in turbidity and suspended solids.
* Though this EA does not plan to include dredging activities in the analysis, relevant information related to disposal that will occur at the site should be included such as all time-of-year restrictions and other additional best management practices that will be employed to reduce impacts to the aquatic environment.
* Please address if the Proposed Action will have impacts on archaeological sites. It is recommended that archeological surveys be conducted, as appropriate.
* The NEPA document should address potential indirect and cumulative effects in the project areas. Analysis may aid in the identification of resources that are likely to be adversely affected by multiple projects, and sensitive resources that could require additional avoidance or mitigation measures. It is suggested that a secondary and cumulative effects analysis begin with defining the geographic and temporal limits of the study; this is generally broader than the study area of the project. The cumulative impact analysis should evaluate impacts to environmental

resources that have the potential to be impacted by the project. Along with the analysis, EPA recommends including a list of potentially relevant projects in the area that could contribute to cumulative impacts. In this case, other planning and ongoing dredging work in the area such as Elizabeth River Southern Branch, Norfolk Harbor, Thimble Shoal, and Atlantic Ocean Channel may be relevant to include.

Thank you for coordinating with EPA on this project. Please let me know if you have any questions on recommended topics above. We look forward to reviewing the EA when it is released.

Sincerely,

Nora T. Hwang

US Environmental Protection Agency, Region 3

Environmental Assessment & Innovation Division

Office of Environmental Programs

1650 Arch Street (3EA30)

Philadelphia, PA 19103

P: 215-814-2728

hwang.nora@epa.gov <mailto:hwang.nora@epa.gov>

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

Planning Division

FEB 26 2019

Ms. Cindy Schulz
Field Supervisor
Virginia Field Office
U.S. Fish and Wildlife Service
6669 Short Lane
Gloucester, VA 23061
VirginiaFieldOffice@fws.gov

Dear Ms. Schulz:

The U.S. Army Corps of Engineers (USACE), Baltimore District, is preparing an Environmental Assessment (EA) regarding a proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) located in the Virginia waters of the Chesapeake Bay, east of Mathews County, Virginia. The WTAPS would be extended to the north, increasing the size of the placement site by approximately 3,900 acres. The WTAPS northern extension would serve as an open water placement site for dredged material. The purpose of extending the WTAPS is to minimize adverse impacts to female blue crabs that overwinter in the existing WTAPS. The deeper, muddy channel in the WTAPS northern extension does not provide suitable habitat for overwintering female blue crabs. The EA will evaluate the effects to the natural and human environment from placement of dredged material into the WTAPS northern extension. Dredging activities would not be included in the EA.

USACE is proposing to place approximately two million cubic yards of dredged material from the York Spit Channel into the WTAPS northern extension during the initial placement event that is expected to occur in the fall of 2019. Dredging would be conducted in one dredging cycle that would last for approximately 4½ months. After initial placement into the WTAPS northern extension, it is anticipated that approximately 1.5 million cubic yards of dredged material from the York Spit Channel would be placed into the site approximately every 4 years. The volume of the site was calculated to be over 30 million cubic yards, using an allowable water depth of 30 feet, which generally matches the bathymetry surrounding the site and would allow placement to surrounding depths. USACE expects that open water placement into the WTAPS northern extension would not occur from September 1 through November 14, consistent with a time-of-year restriction for dredging in the York Spit Channel established to protect federally-listed sea turtles.

USACE is preparing the EA in accordance with the National Environmental Policy Act. The draft EA is expected to be released to the public in the summer of 2019.

USACE is requesting the U.S. Fish and Wildlife Service (USFWS) assistance in fulfilling the requirement of the Fish and Wildlife Coordination Act (FWCA) related to this project. Please inform USACE of the degree to which your agency will be involved pursuant to the FWCA for the preparation of the EA within 30 days from the date of this letter. Please provide a point of contact for this information.

To fulfill the requirements of the Endangered Species Act of 1973 and the Bald and Golden Eagle Protection Act, USACE submitted a Self-Certification Letter and Project Review Package to your office on February 14, 2019. Please contact USACE if you have additional questions or do not concur with our determination.

USACE is committed to incorporating USFWS input and interests throughout the NEPA process. If you have any questions, please contact Kristina May by email at Kristina.K.May@usace.army.mil or by telephone at 410-962-6100.

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division

Enclosure

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
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BALTIMORE, MARYLAND 21201-2930

Planning Division

APR 05 2019

Ms. Karen Greene
Mid-Atlantic Field Office Supervisor and EFH Coordinator
Greater Atlantic Regional Fisheries Service
National Oceanic and Atmospheric Administration
55 Great Republic Drive
Gloucester, MA 01930
Karen.Greene@noaa.gov

Dear Ms. Greene:

The U.S. Army Corps of Engineers (USACE), Baltimore District, is preparing an Environmental Assessment (EA) regarding a proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) located in the Virginia waters of the Chesapeake Bay, east of Mathews County, Virginia. The WTAPS would be extended to the north, increasing the size of the placement site by approximately 3,900 acres. The WTAPS northern extension (WTAPSNE) would serve as an open water placement site for material dredged primarily from the York Spit Channel, but may also be used as a placement site for other dredging projects in the lower Chesapeake Bay pending evaluation. The purpose of extending the WTAPS northward is to minimize adverse impacts to overwintering female blue crabs, which are more abundant in the current WTAPS site, particularly in the southern portion. The WTAPSNE has been found to provide less suitable habitat for overwintering female blue crabs. The EA will evaluate the effects to the natural and human environment from placement of dredged material into WTAPSNE. Dredging activities will not be evaluated in the EA, as those impacts were evaluated in the Environmental Impact Statement for the 2005 Baltimore Harbor and Channels (Maryland and Virginia) Dredged Material Management Plan and other previous National Environmental Policy Act (NEPA) documents.

The capacity of the site is over 30 million cubic yards based upon placement of dredged material within the site boundaries up to an approximate depth of -30 feet mean lower low water. For the initial placement cycle, approximately two million cubic yards of dredged material from operation and maintenance of the York Spit Channel would be placed into WTAPSNE, which is expected to occur in the fall of 2019. Dredging would be conducted in one dredging cycle that would last for approximately 4½ months. Dredging and open water placement activities would occur 24 hours per day and 7 days a week during any given dredging cycle (mobilization to demobilization of the dredging operation). Dredged material would be placed in the WTAPSNE using a hopper dredge. To minimize adverse impacts to sea turtles, dredging in the York Spit Channel does not occur from September 1 through November 14 in accordance with the National Marine Fisheries Service 2018 Biological Opinion (F/NER/2018/14816), and placement into the WTAPSNE would not occur during this period. After initial placement into WTAPSNE, it is anticipated that approximately 1.5 million cubic yards of dredged material from the York Spit Channel would be placed into WTAPSNE approximately every 4 years. WTAPSNE would

reach capacity (be full) after approximately 20 cycles of maintenance of the York Spit Channel in about the year 2100.

USACE is preparing the EA in accordance with NEPA. The draft EA is expected to be released to the public in the summer of 2019. As part of the proposed WTAPSNE EA, USACE is preparing an assessment to evaluate potential effects on Essential Fish Habitat (EFH). Please review the attached draft EFH Assessment and provide any comments your agency may have within 30 days of the date of this letter. If you have any questions, please contact Kristina May by email at Kristina.K.May@usace.army.mil or by telephone at 410-962-6100.

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division

cc: David O'Brien, Marine Habitat Resource Specialist, Gloucester Point, VA Office, David.L.O'Brien@noaa.gov

Enclosure

DEPARTMENT OF THE ARMY
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BALTIMORE, MARYLAND 21201-2930

Planning Division

FEB 26 2019

Mr. Tony Watkinson
Chief, Habitat Management
Virginia Marine Resources Commission
Building 96
380 Fenwick Road
Ft. Monroe, VA 23651
tony.watkinson@mrc.virginia.gov

Dear Mr. Watkinson:

The U.S. Army Corps of Engineers (USACE), Baltimore District, is preparing an Environmental Assessment (EA) regarding a proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) located in the Virginia waters of the Chesapeake Bay, east of Mathews County, Virginia. The WTAPS would be extended to the north, increasing the size of the placement site by approximately 3,900 acres. The WTAPS northern extension would serve as an open water placement site for dredged material. The purpose of extending the WTAPS is to minimize adverse impacts to female blue crabs that overwinter in the existing WTAPS. The deeper, muddy channel in the WTAPS northern extension does not provide suitable habitat for overwintering female blue crabs. The EA will evaluate the effects to the natural and human environment from placement of dredged material into the WTAPS northern extension. Dredging activities would not be included in the EA.

USACE is proposing to place approximately two million cubic yards of dredged material from the York Spit Channel into the WTAPS northern extension during the initial placement event that is expected to occur in the fall of 2019. Dredging would be conducted in one dredging cycle that would last for approximately 4½ months. After initial placement into the WTAPS northern extension, it is anticipated that approximately 1.5 million cubic yards of dredged material from the York Spit Channel would be placed into the site approximately every 4 years. The volume of the site was calculated to be over 30 million cubic yards, using an allowable water depth of 30 feet, which generally matches the bathymetry surrounding the site and would allow placement to surrounding depths. USACE expects that open water placement into the WTAPS northern extension would not occur from September 1 through November 14, consistent with a time-of-year restriction for dredging in the York Spit Channel established to protect federally-listed sea turtles.

USACE is preparing the EA in accordance with the National Environmental Policy Act. The draft EA is expected to be released to the public in the summer of 2019. Please provide any information or comments your agency may have that may assist us in the preparation of the EA within 30 days of the date of this letter. If you have any questions, please contact Kristina May by email at Kristina.K.May@usace.army.mil or by telephone at 410-962-6100.

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division

Enclosure

Cc: Randy Owen, VMRC, Habitat Management

COMMONWEALTH of VIRGINIA

Marine Resources Commission
Building 96
380 Fenwick Road
Fort Monroe, VA 23651

Matthew J. Strickler
Secretary of Natural Resources

Steven G. Bowman
Commissioner

March 14, 2019

Mr. Daniel M. Bierly
Chief, Civil Project Development Branch
Department of the Army Corps of Engineers, Baltimore District
2 Hopkins Plaza
Baltimore, Maryland 21201-2930

Re: Draft Environmental Assessment
WTAPS Northern Extension
Alternative Site

Dear Mr. Bierly:

This will respond to your recent letter to me, received March 4, 2019, requesting comments from the Marine Resources Commission on an Environmental Assessment (EA) being prepared for a proposed northern extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) for material dredged from the York Spit Channel. As you are aware, the Commission and the Virginia Institute of Marine Science (VIMS) have provided extensive scoping comments and participated in numerous meetings to date outlining the Commonwealth's position on the adverse impacts to blue crab and finfish resources impacted by the overboard placement of dredged material at WTAPS. The previous comments remain valid for the EA that you are preparing.

As a result of the review for the ongoing use of the WTAPS, we had recommended the Corps plan to utilize the northern extension area for the upcoming maintenance dredging. The Commission, therefore, supports the use of the northern extension area for the upcoming maintenance cycle pursuant to the 1981 agreement that allowed use of the WTAPS, but which was contingent on the designation of alternate disposal sites by the Commonwealth.

I am concerned, however, the ongoing EA will fail to identify beneficial use of dredge material alternatives for future maintenance dredging cycles as we discussed at the January 15, 2019, meeting held in Baltimore and outlined in Colonel Litz's February 19, 2019, letter to Virginia's Secretary of Natural Resources, Matthew Strickler. As presented, it appears the EA will focus on the long-term continued use of the northern extension area based on site capacity for future dredge cycles. Potential beneficial use options for future dredge material should be included in EA.

As you are aware, Secretary Strickler's January 14, 2019, letter to Colonel Litz stated that the Commonwealth cannot support future use of WTAPS given the threats to blue crab and multiple fish species identified by VIMS and NOAA in its review of the Essential Fish Habitat assessment. The letter further stated that use of any alternative location be restricted to the upcoming maintenance dredging cycle and any future maintenance or proposed widening of this channel include a thorough evaluation of alternative options and include beneficial use opportunities as well as disposal outside the Chesapeake Bay.

We continue to look forward to working with the Baltimore District to identify alternative dredge material placement options that focus on the beneficial uses and innovative reuse of dredge material as outlined in Colonel Litz's letter.

Sincerely,

Tony Watkinson
Chief, Habitat Management

TW:blh
HM
cc: Matthew J. Strickler, Secretary of Natural Resources
Steven G. Bowman, Commissioner, Virginia Marine Resources Commission
Ellen Bolen, Deputy Commissioner, Virginia Marine Resources Commission

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

Planning Division

FEB 26 2019

Mr. David K. Paylor
Director
Virginia Department of Environmental Quality
P.O. Box 1105
Richmond, VA 23218

Dear Mr. Paylor:

The U.S. Army Corps of Engineers (USACE), Baltimore District, is preparing an Environmental Assessment (EA) regarding a proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) located in the Virginia waters of the Chesapeake Bay, east of Mathews County, Virginia. The WTAPS would be extended to the north, increasing the size of the placement site by approximately 3,900 acres. The WTAPS northern extension would serve as an open water placement site for dredged material. The purpose of extending the WTAPS is to minimize adverse impacts to female blue crabs that overwinter in the existing WTAPS. The deeper, muddy channel in the WTAPS northern extension does not provide suitable habitat for overwintering female blue crabs. The EA will evaluate the effects to the natural and human environment from placement of dredged material into the WTAPS northern extension. Dredging activities would not be included in the EA.

USACE is proposing to place approximately two million cubic yards of dredged material from the York Spit Channel into the WTAPS northern extension during the initial placement event that is expected to occur in the fall of 2019. Dredging would be conducted in one dredging cycle that would last for approximately 4½ months. After initial placement into the WTAPS northern extension, it is anticipated that approximately 1.5 million cubic yards of dredged material from the York Spit Channel would be placed into the site approximately every 4 years. The volume of the site was calculated to be over 30 million cubic yards, using an allowable water depth of 30 feet, which generally matches the bathymetry surrounding the site and would allow placement to surrounding depths. USACE expects that open water placement into the WTAPS northern extension would not occur from September 1 through November 14, consistent with a time-of-year restriction for dredging in the York Spit Channel established to protect federally-listed sea turtles.

USACE is preparing the EA in accordance with the National Environmental Policy Act. The draft EA is expected to be released to the public in the summer of 2019. When the EA is released for public review, USACE will submit a Federal Coastal Zone Management Act Consistency Information Package and a request for a Clean Water Act 401 Water Quality Certification to the Virginia Department of Environmental Quality for the WTAPS northern extension. Please provide any information or comments your agency may have that may assist us in the preparation of the EA within 30 days of the date of this letter. If you have any questions, please contact Kristina May by email at Kristina.K.May@usace.army.mil or by telephone at 410-962-6100.

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division

Enclosure

cc: Bettina Rayfield, Manager, Environmental Impact Review and Long Range Priorities Program, VADEQ; Bettina.Rayfield@deq.virginia.gov

COMMONWEALTH of VIRGINIA

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Matthew J. Strickler
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David K. Paylor
Director

(804) 698-4000
1-800-592-5482

March 14, 2019

Chief Daniel M. Bierly
Civil Project Development Branch
Department of the Army
Corps of Engineers, Baltimore District
2 Hopkins Plaza
Baltimore, Maryland 21201-2930

RE: Scoping Request – Wolf Trap Alternate Open Water Placement Site, Mathews County Virginia

Dear Chief Bierly:

This letter is in response to the scoping request for the above-referenced project.

As you may know, the Department of Environmental Quality, through its Office of Environmental Impact Review (DEQ-OEIR), is responsible for coordinating Virginia's review of federal environmental documents prepared pursuant to the National Environmental Policy Act (NEPA) and responding to appropriate federal officials on behalf of the Commonwealth. Similarly, DEQ-OEIR coordinates Virginia's review of federal consistency documents prepared pursuant to the Coastal Zone Management Act which applies to all federal activities which are reasonably likely to affect any land or water use or natural resources of Virginia's designated coastal resources management area must be consistent with the enforceable policies Virginia Coastal Zone Management (CZM) Program.

DOCUMENT SUBMISSIONS

In order to ensure an effective coordinated review of the NEPA document and federal consistency documentation, notification of the NEPA document and federal consistency documentation should be sent directly to OEIR. We request that you submit one electronic to eir@deq.virginia.gov (25 MB maximum) or make the documents available for download at a website, file transfer protocol (ftp) site or the VITA LFT file share system (Requires an "invitation" for access. An invitation request should be sent to eir@deq.virginia.gov.). We request that the review of these two documents be done concurrently, if possible.

The NEPA document and the federal consistency documentation (if applicable) should include U.S. Geological Survey topographic maps as part of their information. We strongly encourage you to issue shape files with the NEPA document. In addition, project details should be adequately described for the benefit of the reviewers.

ENVIRONMENTAL REVIEW UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT: PROJECT SCOPING AND AGENCY INVOLVEMENT

As you may know, NEPA (PL 91-190, 1969) and its implementing regulations (Title 40, *Code of Federal Regulations*, Parts 1500-1508) requires a draft and final Environmental Impact Statement (EIS) for federal activities or undertakings that are federally licensed or federally funded which will or may give rise to significant impacts upon the human environment. An EIS carries more stringent public participation requirements than an Environmental Assessment (EA) and provides more time and detail for comments and public decision-making. The possibility that an EIS may be required for the proposed project should not be overlooked in your planning for this project. Accordingly, we refer to "NEPA document" in the remainder of this letter.

While this Office does not participate in scoping efforts beyond the advice given herein, other agencies are free to provide scoping comments concerning the preparation of the NEPA document. Accordingly, we are providing notice of your scoping request to several state agencies and those localities and Planning District Commissions, including but not limited to:

Department of Environmental Quality:
- DEQ Regional Office*
- Air Division*
- Office of Wetlands and Stream Protection*
- Office of Local Government Programs*
- Division of Land Protection and Revitalization
- Office of Stormwater Management*

Department of Conservation and Recreation
Department of Health*
Department of Agriculture and Consumer Services
Department of Game and Inland Fisheries*
Virginia Marine Resources Commission*
Department of Historic Resources
Department of Mines, Minerals, and Energy
Department of Forestry
Department of Transportation

Note: The agencies noted with a star (*) administer one or more of the enforceable policies of the Virginia CZM Program.

FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT

Pursuant to the federal Coastal Zone Management Act of 1972, as amended, and its implementing regulations in Title 15, *Code of Federal Regulations*, Part 930, federal activities, including permits, licenses, and federally funded projects, located in Virginia's Coastal Management Zone or those that can have reasonably foreseeable effects on Virginia's coastal uses or coastal resources must be conducted in a manner which is consistent, to the maximum extent practicable, with the Virginia CZM Program.

Additional information on the Virginia's review for federal consistency documents can be found online at
http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview/FederalConsistencyReviews.aspx

DATA BASE ASSISTANCE

Below is a list of databases that may assist you in the preparation of a NEPA document:

- DEQ Online Database: Virginia Environmental Geographic Information Systems

  Information on Permitted Solid Waste Management Facilities, Impaired Waters, Petroleum Releases, Registered Petroleum Facilities, Permitted Discharge (Virginia Pollution Discharge Elimination System Permits) Facilities, Resource Conservation and Recovery Act (RCRA) Sites, Water Monitoring Stations, National Wetlands Inventory:
  - www.deq.virginia.gov/ConnectWithDEQ/VEGIS.aspx

- DEQ Virginia Coastal Geospatial and Educational Mapping System (GEMS)

  Virginia's coastal resource data and maps; coastal laws and policies; facts on coastal resource values; and direct links to collaborating agencies responsible for current data:
  - http://128.172.160.131/gems2/

- MARCO Mid-Atlantic Ocean Data Portal

  The Mid-Atlantic Ocean Data Portal is a publicly available online toolkit and resource center that consolidates available data and enables users to visualize and analyze ocean resources and human use information such as fishing grounds, recreational areas, shipping lanes, habitat areas, and energy sites, among others.

  http://portal.midatlanticocean.org/visualize/#x=-73.24&y=38.93&z=7&logo=true&controls=true&basemap=Ocean&tab=data&legends=false&layers=true

- DHR Data Sharing System.

  Survey records in the DHR inventory:

  - www.dhr.virginia.gov/archives/data_sharing_sys.htm

- DCR Natural Heritage Search

  Produces lists of resources that occur in specific counties, watersheds or physiographic regions:
  - www.dcr.virginia.gov/natural_heritage/dbsearchtool.shtml

- DGIF Fish and Wildlife Information Service

  Information about Virginia's Wildlife resources:
  - http://vafwis.org/fwis/

- Total Maximum Daily Loads Approved Reports
  - https://www.deq.virginia.gov/programs/water/waterqualityinformationtmdls/tmdl/tmdldevelopment/approvedtmdlreports.aspx

- Virginia Outdoors Foundation: Identify VOF-protected land
  - http://vof.maps.arcgis.com/home/index.html

- Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Database: Superfund Information Systems

  Information on hazardous waste sites, potentially hazardous waste sites and remedial activities across the nation, including sites that are on the National Priorities List (NPL) or being considered for the NPL:
  - www.epa.gov/superfund/sites/cursites/index.htm

- EPA RCRAInfo Search

  Information on hazardous waste facilities:
  - www.epa.gov/enviro/facts/rcrainfo/search.html

- EPA Envirofacts Database

  EPA Environmental Information, including EPA-Regulated Facilities and Toxics Release Inventory Reports:
  - www.epa.gov/enviro/index.html

- EPA NEPAssist Database

  Facilitates the environmental review process and project planning:
  http://nepaassisttool.epa.gov/nepaassist/entry.aspx

If you have questions about the environmental review process and/or the federal consistency review process, please feel free to contact me (telephone (804) 698-4204 or e-mail bettina.rayfield@deq.virginia.gov).

I hope this information is helpful to you.

Sincerely,

Bettina Rayfield, Program Manager
Environmental Impact Review and Long-Range Priorities

MEMORANDUM

TO: Kristina K. May

FROM: Daniel Moore, DEQ Principal Environmental Planner

DATE: March 14, 2019

SUBJECT: SCOPING Wolf Trap Alternative Open Water Placement Site, Mathews County, Virginia

We have reviewed the scoping letter and submitted information for the proposed project and offer the following comments regarding consistency with the provisions of the *Chesapeake Bay Preservation Area Designation and Management Regulations* (Regulations).

The project as proposed appears to occur completely in state waters and is thus not subject to the Chesapeake Bay Preservation Act or Regulations.

March 18, 2019

Daniel M. Bierly
Chief, Civil Project Development Branch
Department of the Army
Corps of Engineers, Baltimore District
2 Hopkins Plaza
Baltimore, Maryland 21201-2930

Dear Mr. Bierly:

The Virginia Institute of Marine Science (VIMS) is the designated scientific advisor to the Commonwealth of Virginia for all matters regarding marine and estuarine natural resources. As part of this responsibility, the Virginia Marine Resources Commission (VMRC) in 2014 requested our assessment of the continued use of the Wolf Trap Alternate Open Water Placement Site (WTAPS). VIMS' long-term monitoring data demonstrated WTAPS to be co-located with important overwintering blue crab habitat. To mitigate adverse effects from dredge material placement to a stressed and vulnerable blue crab stock, we recommended the northern extension alternative that is the subject of your Environmental Assessment (EA) as a project modification that would significantly reduce adverse impacts to Chesapeake Bay (Virginia and Maryland) blue crab resources. VIMS has participated in discussions between VMRC, the Maryland Port Authority, and the Baltimore District Corps of Engineers since our initial involvement and have provided documentation of our assessments. We recommend incorporating the information contained in these documents, and which we shared throughout this process, into the EA as it provides technical justification for abandoning the use of WTAPS for the proposed new placement area.

Since the placement of dredged material upon any subaqueous bottomland necessarily results in some degree of temporary and/or longer term adverse environmental impacts, we also recommend the evaluation of beneficial uses for future material from the York Spit Channel as an element of this EA as well as future dredge project assessments.

Sincerely,

Mark W. Luckenbach

Dr. Mark Luckenbach
Associate Dean of Research
and Advisory Services

From:	Warren, Arlene
To:	May, Kristina K CIV USARMY CENAB (USA); rr Environmental Impact Review
Subject:	[Non-DoD Source] Re: NEW SCOPING Wolf Trap Alternate Open Water Placement Site
Date:	Tuesday, March 19, 2019 5:58:26 PM

Project Name: NEW SCOPING Wolf Trap Alternate Open Water Placement Site

Project #: N/A

UPC #: N/A

VDH – Office of Drinking Water has reviewed the above project. Below are our comments as they relate to proximity to public drinking water sources (groundwater wells, springs and surface water intakes). Potential impacts to public water distribution systems or sanitary sewage collection systems must be verified by the local utility.

There are no public groundwater wells within a 1-mile radius of the project site.

There are no surface water intakes located within a 5-mile radius of the project site.

The project is not within the watershed of any public surface water intakes.

There are no apparent impacts to public drinking water sources due to this project.

The Virginia Department of Health – Office of Drinking Water appreciates the opportunity to provide comments. If you have any questions, please let me know.

Best Regards,

Arlene Fields Warren

GIS Program Support Technician

Office of Drinking Water

Virginia Department of Health

109 Governor Street

Richmond, VA 23219

(804) 864-7781

On Thu, Mar 14, 2019 at 9:46 AM Fulcher, Valerie <valerie.fulcher@deq.virginia.gov <mailto:valerie.fulcher@deq.virginia.gov> > wrote:

Good morning—attached is a request for scoping comments on the following:

ACOE Wolf Trap Alternate Open Water Placement Site (WTAPS)

If you choose to make comments, please send them directly to the project sponsor (Kristina.K.May@usace.army.mil <mailto:Kristina.K.May@usace.army.mil>) and copy the DEQ Office of Environmental Impact Review: eir@deq.virginia.gov <mailto:eir@deq.virginia.gov> . We will coordinate a review when the environmental document is completed.

DEQ-OEIR's scoping response is also attached.

If you have any questions regarding this request, please email our office at eir@deq.virginia.gov <mailto:eir@deq.virginia.gov> .

Valerie

--

Valerie A. Fulcher, CAP, OM, Environmental Program Specialist

Department of Environmental Quality

Environmental Enhancement - Office of Environmental Impact Review

1111 East Main Street

Richmond, VA 23219

804/698-4330 <tel:(804)%20698-4330>

804/698-4319 <tel:(804)%20698-4319> (Fax)

email: Valerie.Fulcher@deq.virginia.gov <mailto:Valerie.Fulcher@deq.virginia.gov>

Blockedhttp://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx

For program updates and public notices please subscribe to the OEIR News Feed <Blockedhttp://www.deq.virginia.gov/ConnectWithDEQ/NewsFeeds.aspx>

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

FEB 26 2019

Planning Division

Ms. René Hypes
Environmental Review Coordinator
Virginia Department of Conservation and Recreation Natural Heritage Program
600 E. Main Street, 24th Floor
Richmond, VA 23219

Dear Ms. Hypes:

The U.S. Army Corps of Engineers (USACE), Baltimore District, is preparing an Environmental Assessment (EA) regarding a proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) located in the Virginia waters of the Chesapeake Bay, east of Mathews County, Virginia. The WTAPS would be extended to the north, increasing the size of the placement site by approximately 3,900 acres. The WTAPS northern extension would serve as an open water placement site for dredged material. The purpose of extending the WTAPS is to minimize adverse impacts to female blue crabs that overwinter in the existing WTAPS. The deeper, muddy channel in the WTAPS northern extension does not provide suitable habitat for overwintering female blue crabs. The EA will evaluate the effects to the natural and human environment from placement of dredged material into the WTAPS northern extension. Dredging activities would not be included in the EA.

USACE is proposing to place approximately two million cubic yards of dredged material from the York Spit Channel into the WTAPS northern extension during the initial placement event that is expected to occur in the fall of 2019. Dredging would be conducted in one dredging cycle that would last for approximately 4½ months. After initial placement into the WTAPS northern extension, it is anticipated that approximately 1.5 million cubic yards of dredged material from the York Spit Channel would be placed into the site approximately every 4 years. The volume of the site was calculated to be over 30 million cubic yards, using an allowable water depth of 30 feet, which generally matches the bathymetry surrounding the site and would allow placement to surrounding depths. USACE expects that open water placement into the WTAPS northern extension would not occur from September 1 through November 14, consistent with a time-of-year restriction for dredging in the York Spit Channel established to protect federally-listed sea turtles.

USACE is preparing the EA in accordance with the National Environmental Policy Act. The draft EA is expected to be released to the public in the summer of 2019. Please provide any information or comments your agency may have that may assist us in the preparation of the EA within 30 days of the date of this letter. If you have any questions, please contact Kristina May by email at Kristina.K.May@usace.army.mil or by telephone at 410-962-6100.

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division

Enclosure

Matthew J. Strickler
Secretary of Natural Resources

Clyde E. Cristman
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

Rochelle Altholz
Deputy Director of Administration and Finance

Russell W. Baxter
Deputy Director of Dam Safety & Floodplain Management and Soil & Water Conservation

Thomas L. Smith
Deputy Director of Operations

March 27, 2019

Kristina May
USACE-Baltimore District
2 Hopkins Plaza
Baltimore, MD 21201

Re: Wolf Trap Alternate Open Water Placement Site Extension

Dear Ms. May:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, natural heritage resources have not been documented within two miles of the project boundary. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

There is potential for several state and federally-listed species including marine mammals, sea turtles, and marine/coastal birds to occur in the project area. Due to the legal status of these species, DCR-DNH recommends coordination with the National Marine Fisheries Service (NMFS), the Virginia Department of Game and Inland Fisheries (VDGIF), and the United States Fish and Wildlife Service (USFWS) to ensure compliance with protected species legislation.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please re-submit project information and map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The VDGIF maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database

may be accessed from http://vafwis.org/fwis/ or contact Ernie Aschenbach at 804-367-2733 or Ernie.Aschenbach@dgif.virginia.gov.

Should you have any questions or concerns, please contact me at 804-225-2429. Thank you for the opportunity to comment on this project.

Sincerely,

Tyler Meader

Tyler Meader
Natural Heritage Locality Liaison

Cc : Amy Ewing, VDGIF
David O'Brien, NMFS
Troy Andersen, USFWS

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

Planning Division

FEB 26 2019

Mr. Ray Fernald
Manager
Environmental Services Section
Virginia Department of Game and Inland Fisheries
P.O. Box 90778
Henrico, VA 23228
ESSProjects@dgif.virginia.gov

Dear Mr. Fernald:

The U.S. Army Corps of Engineers (USACE), Baltimore District, is preparing an Environmental Assessment (EA) regarding a proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) located in the Virginia waters of the Chesapeake Bay, east of Mathews County, Virginia. The WTAPS would be extended to the north, increasing the size of the placement site by approximately 3,900 acres. The WTAPS northern extension would serve as an open water placement site for dredged material. The purpose of extending the WTAPS is to minimize adverse impacts to female blue crabs that overwinter in the existing WTAPS. The deeper, muddy channel in the WTAPS northern extension does not provide suitable habitat for overwintering female blue crabs. The EA will evaluate the effects to the natural and human environment from placement of dredged material into the WTAPS northern extension. Dredging activities would not be included in the EA.

USACE is proposing to place approximately two million cubic yards of dredged material from the York Spit Channel into the WTAPS northern extension during the initial placement event that is expected to occur in the fall of 2019. Dredging would be conducted in one dredging cycle that would last for approximately 4½ months. After initial placement into the WTAPS northern extension, it is anticipated that approximately 1.5 million cubic yards of dredged material from the York Spit Channel would be placed into the site approximately every 4 years. The volume of the site was calculated to be over 30 million cubic yards, using an allowable water depth of 30 feet, which generally matches the bathymetry surrounding the site and would allow placement to surrounding depths. USACE expects that open water placement into the WTAPS northern extension would not occur from September 1 through November 14, consistent with a time-of-year restriction for dredging in the York Spit Channel established to protect federally-listed sea turtles.

USACE is preparing the EA in accordance with the National Environmental Policy Act. The draft EA is expected to be released to the public in the summer of 2019. USACE is requesting information from your office on the presence of state-listed rare, threatened, and endangered species for the WTAPS northern extension site shown on the enclosed maps. Coordination with the U.S. Fish and Wildlife Service Virginia Field Office under Section 7 of the Endangered Species Act is complete. If you have any questions, please contact Kristina May by email at Kristina.K.May@usace.army.mil or by telephone at 410-962-6100.

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division

Enclosure

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

Planning Division

FEB 26 2019

Ms. Julie Langan
Director and State Historic Preservation Officer
Department of Historic Resources
2801 Kensington Avenue
Richmond, Virginia 23221

Dear Ms. Langan:

The U.S. Army Corps of Engineers (USACE), Baltimore District, is preparing an Environmental Assessment (EA) regarding a proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) located in the Virginia waters of the Chesapeake Bay, east of Mathews County, Virginia. The WTAPS would be extended to the north, increasing the size of the placement site by approximately 3,900 acres. The WTAPS northern extension would serve as an open water placement site for dredged material. The purpose of extending the WTAPS is to minimize adverse impacts to female blue crabs that overwinter in the existing WTAPS. The deeper, muddy channel in the WTAPS northern extension does not provide suitable habitat for overwintering female blue crabs. The EA will evaluate the effects to the natural and human environment from placement of dredged material into the WTAPS northern extension. Dredging activities would not be included in the EA.

USACE is proposing to place approximately two million cubic yards of dredged material from the York Spit Channel into the WTAPS northern extension during the initial placement event that is expected to occur in the fall of 2019. Dredging would be conducted in one dredging cycle that would last for approximately 4½ months. After initial placement into the WTAPS northern extension, it is anticipated that approximately 1.5 million cubic yards of dredged material from the York Spit Channel would be placed into the site approximately every 4 years. The volume of the site was calculated to be over 30 million cubic yards, using an allowable water depth of 30 feet, which generally matches the bathymetry surrounding the site and would allow placement to surrounding depths. USACE expects that open water placement into the WTAPS northern extension would not occur from September 1 through November 14, consistent with a time-of-year restriction for dredging in the York Spit Channel established to protect federally-listed sea turtles.

USACE is preparing the EA in accordance with the National Environmental Policy Act. The draft EA is expected to be released to the public in the summer of 2019. Please provide any information or comments your agency may have that may assist us in the preparation of the EA within 30 days of the date of this letter. If you have any questions, please contact Kristina May by email at Kristina.K.May@usace.army.mil or by telephone at 410-962-6100.

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division

Enclosure

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

Planning Division

FEB 26 2019

Deborah Dotson, President
Delaware Nation
3 Miles North of Anadarko on Highway 281
Main Office Building 100
Anadarko, Oklahoma 73005

Dear Ms. Dotson:

The U.S. Army Corps of Engineers (USACE), Baltimore District, is preparing an Environmental Assessment (EA) regarding a proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) located in the Virginia waters of the Chesapeake Bay, east of Mathews County, Virginia. The WTAPS would be extended to the north, increasing the size of the placement site by approximately 3,900 acres. The WTAPS northern extension would serve as an open water placement site for dredged material. The purpose of extending the WTAPS is to minimize adverse impacts to female blue crabs that overwinter in the existing WTAPS. The deeper, muddy channel in the WTAPS northern extension does not provide suitable habitat for overwintering female blue crabs. The EA will evaluate the effects to the natural and human environment from placement of dredged material into the WTAPS northern extension. Dredging activities would not be included in the EA.

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USACE is preparing the EA in accordance with the National Environmental Policy Act. The draft EA is expected to be released to the public in the summer of 2019. USACE is requesting any comments that Delaware Nation may have that may assist us in the preparation of the EA. Please provide comments within 30 days of the date of this letter. If you have any questions, please contact Kristina May by email at Kristina.K.May@usace.army.mil or by telephone at 410-962-6100.

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division

Enclosure

11 April 2019

To Whom It May Concern:

The Delaware Nation Historic Preservation Department received correspondence regarding the following referenced project(s).

> **Project: The U.S. Army Corps of Engineers (USACE), Baltimore District, is preparing an Environmental Assessment (EA) regarding a proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) located in the Virginia waters of the Chesapeake Bay, east of Matthews County, Virginia.**

Our office is committed to protecting tribal heritage, culture and religion with particular concern for archaeological sites potentially containing burials and associated funerary objects.

The Lenape people occupied the area indicated in your letter during prior to European contact until their eventual removal to our present locations. According to our files, the location of the proposed project does not endanger cultural, or religious sites of interest to the Delaware Nation. **Please continue with the project as planned** keeping in mind during construction should an archaeological site or artifacts inadvertently be uncovered, all construction and ground disturbing activities should immediately be halted until the appropriate state agencies, as well as this office, are notified (within 24 hours), and a proper archaeological assessment can be made.

Please note the Delaware Nation, the Delaware Tribe of Indians, and the Stockbridge Munsee Band of Mohican Indians are the only Federally Recognized Delaware/Lenape entities in the United States and consultation must be made only with designated staff of these three tribes. We appreciate your cooperation in contacting the Delaware Nation Historic Preservation Office to conduct proper Section 106 consultation. Should you have any questions, feel free to contact our offices at 405/247-2448.

Dana Kelly
Historic Preservation/106 Asst.
Delaware Nation
31064 State Highway 281
Po Box 825
Anadarko, OK 73005
Ph. 405-247-2448
dkelly@delawarenation.com

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

FEB 26 2019

Planning Division

Chief Robert Gray
Pamunkey Indian Tribe
1054 Pocahontas Trail
King William, Virginia 23086

Dear Mr. Gray:

The U.S. Army Corps of Engineers (USACE), Baltimore District, is preparing an Environmental Assessment (EA) regarding a proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) located in the Virginia waters of the Chesapeake Bay, east of Mathews County, Virginia. The WTAPS would be extended to the north, increasing the size of the placement site by approximately 3,900 acres. The WTAPS northern extension would serve as an open water placement site for dredged material. The purpose of extending the WTAPS is to minimize adverse impacts to female blue crabs that overwinter in the existing WTAPS. The deeper, muddy channel in the WTAPS northern extension does not provide suitable habitat for overwintering female blue crabs. The EA will evaluate the effects to the natural and human environment from placement of dredged material into the WTAPS northern extension. Dredging activities would not be included in the EA.

USACE is proposing to place approximately two million cubic yards of dredged material from the York Spit Channel into the WTAPS northern extension during the initial placement event that is expected to occur in the fall of 2019. Dredging would be conducted in one dredging cycle that would last for approximately 4½ months. After initial placement into the WTAPS northern extension, it is anticipated that approximately 1.5 million cubic yards of dredged material from the York Spit Channel would be placed into the site approximately every 4 years. The volume of the site was calculated to be over 30 million cubic yards, using an allowable water depth of 30 feet, which generally matches the bathymetry surrounding the site and would allow placement to surrounding depths. USACE expects that open water placement into the WTAPS northern extension would not occur from September 1 through November 14, consistent with a time-of-year restriction for dredging in the York Spit Channel established to protect federally-listed sea turtles.

USACE is preparing the EA in accordance with the National Environmental Policy Act. The draft EA is expected to be released to the public in the summer of 2019. USACE is requesting any comments the Pamunkey Indian Tribe may have that may assist us in the preparation of the EA. Please provide comments within 30 days of the date of this letter. If you have any questions, please contact Kristina May by email at Kristina.K.May@usace.army.mil or by telephone at 410-962-6100.

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division

Enclosure

US Army Corps of Engineers
Baltimore District

Notice of Availability

Wolf Trap Alternate Open Water Placement Site for Dredged Material
Northern Extension
Virginia Waters of the Chesapeake Bay
Draft Environmental Assessment

ALL INTERESTED PARTIES: The U.S. Army Corps of Engineers, Baltimore District (USACE), in accordance with the National Environmental Policy Act of 1969, as amended, has prepared a draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) to the north, increasing the size of the site by approximately 3,900 acres (see attached map). The WTAPS Northern Extension would be located in the lower Chesapeake Bay between the Piankatank River and Mobjack Bay, approximately five miles east of Mathews County, Virginia. The EA and FONSI were prepared in partnership with the Maryland Port Administration, the non-federal sponsor. In addition to having an approved EA and signed FONSI, a Water Quality Certification pursuant to Section 401 of the Clean Water Act and a determination of consistency with the Commonwealth of Virginia's Coastal Zone Management Program pursuant to the Coastal Zone Management Act of 1972 is required from the Commonwealth of Virginia.

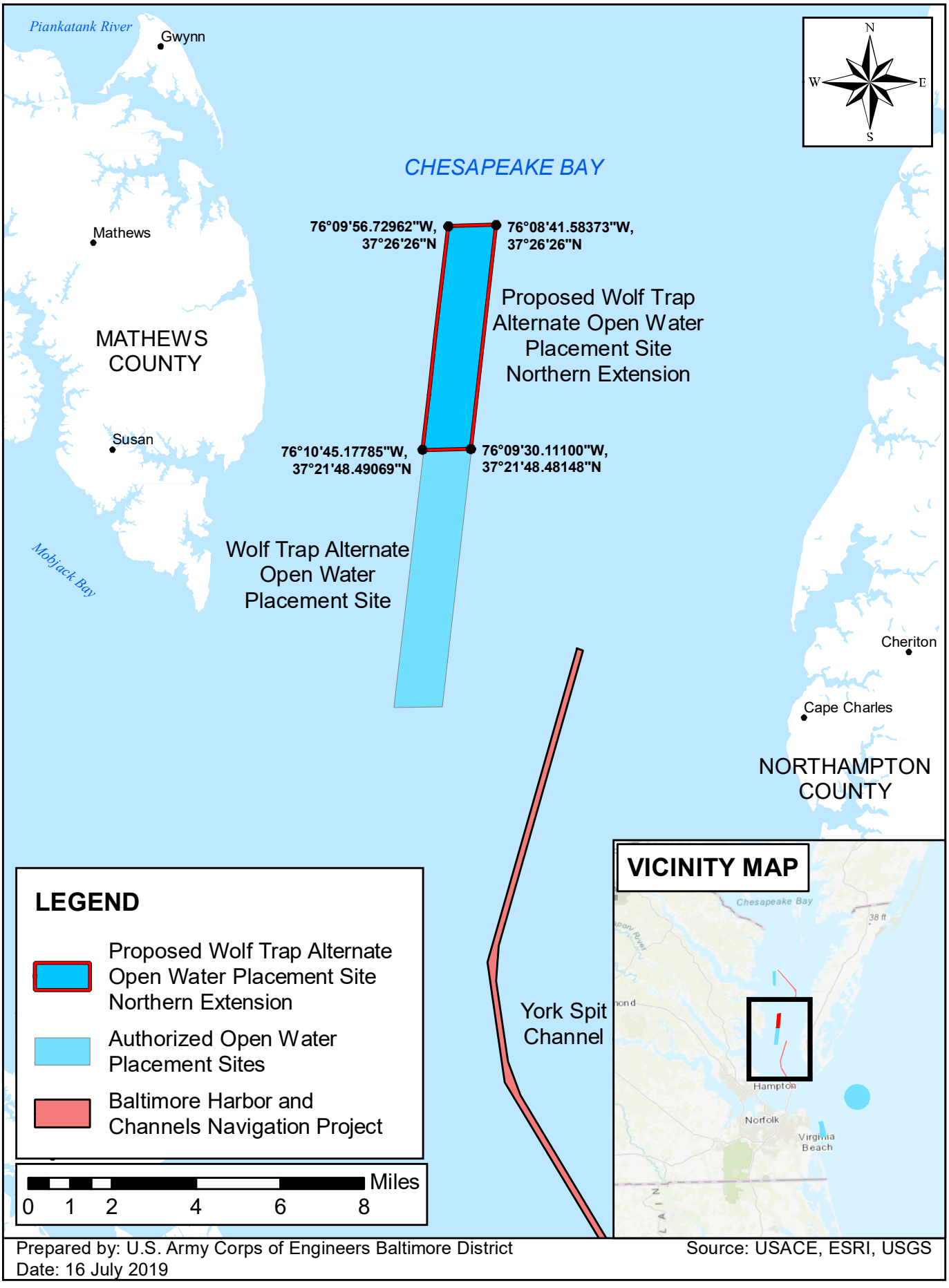
Purpose of Work: To provide a cost-effective, environmentally-acceptable placement site for dredged material in response to a recommendation by agencies of the Commonwealth of Virginia, to minimize adverse impacts to overwintering female blue crabs.

Proposed Action: The WTAPS Northern Extension would serve as an open water placement site for material dredged primarily from the York Spit Channel, which is part of the federally-maintained Baltimore Harbor and Channels 50-Foot Navigation Project. The WTAPS Northern Extension has been recommended by agencies of the Commonwealth of Virginia as an alternative to the currently-used WTAPS due to the potential for a high abundance of female blue crabs to overwinter in the southern portion of WTAPS.

Approximately 2.6 million cubic yards (mcy) of material dredged from the York Spit Channel would be placed into the WTAPS Northern Extension during initial placement, expected to begin in late fall of 2019. After initial placement, it is anticipated that approximately 1.5 mcy of material dredged from the York Spit Channel would be placed into the site approximately every 4 years, or until another alternate placement site or method is identified, approved, and implemented. Placement would not occur from Sept. 1 through Nov. 14 to minimize adverse impacts to sea turtles. The proposed project does not include any changes to ongoing maintenance dredging activities or any other actions beyond the establishment of the placement site extension. In FY 2020, USACE plans to begin a comprehensive evaluation of alternatives to WTAPS through a Dredged Material Management Plan for the portion of the Baltimore Harbor and Channels Navigation Project located in Virginia.

The draft EA and FONSI are available to the public for a 30-day review and comment period. Comments need to be received on or before Aug. 18, 2019, to be considered. The draft EA and FONSI are available via the USACE website: https://www.nab.usace.army.mil/Missions/Civil-Works/Dredged-Material-Management-Plan-DMMP/. Written comments can be sent to the U.S. Army Corps of Engineers, Baltimore District, Attn: Kristina May, Planning Division, 10th Floor, 2 Hopkins Plaza, Baltimore, MD 21201. Comments can also be submitted electronically to: Kristina.K.May@usace.army.mil. If you have any questions, please contact Kristina May by telephone at (410) 962-6100 or by email at the address above.

Daniel Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division



Prepared by: U.S. Army Corps of Engineers Baltimore District
Date: 16 July 2019

Source: USACE, ESRI, USGS

US Army Corps of Engineers
Baltimore District

Wolf Trap Alternate Open Water Placement Site for Dredged Material, Northern Extension Draft Environmental Assessment Notice of Availability

The U.S. Army Corps of Engineers, Baltimore District (USACE), and the Maryland Department of Transportation Port Administration (non-federal sponsor) have prepared a Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI), in accordance with the National Environmental Policy Act of 1969, for the proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) to the north, increasing the size by approximately 3,900 acres. The WTAPS Northern Extension would be located in the lower Chesapeake Bay between the Piankatank River and Mobjack Bay, approximately five miles east of Mathews County, Virginia.

The purpose of the work is to provide a cost-effective, environmentally-acceptable placement site for dredged material in response to a recommendation by agencies of the Commonwealth of Virginia, to minimize adverse impacts to overwintering female blue crabs.

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Sunday, July 21, 2019

Notice Content

Wolf Trap Alternate Open Water Placement Site for Dredged Material, Northern ExtensionDraft Environmental AssessmentNotice of Availability The U.S. Army Corps of Engineers, Baltimore District (USACE), and the Maryland Department of Transportation Port Administration (non-federal sponsor) have prepared a Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI), in accordance with the National Environmental Policy Act of 1969, for the proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) to the north, increasing the size by approximately 3,900 acres. The WTAPS Northern Extension would be located in the lower Chesapeake Bay between the Piankatank River and Mobjack Bay, approximately five miles east of Mathews County, Virginia. The purpose of the work is to provide a cost-effective, environmentally-acceptable placement site for dredged material in response to a recommendation by agencies of the Commonwealth of Virginia, to minimize adverse impacts to overwintering female blue crabs.The WTAPS Northern Extension would serve as an open water placement site for material dredged primarily from the York Spit Channel, which is part of the federally-maintained Baltimore Harbor and Channels 50-Foot Navigation Project. Approximately 2.6 million cubic yards (mcy) of material dredged from the York Spit Channel would be placed into the WTAPS Northern Extension during initial placement, expected to begin in late fall of 2019. After initial placement, it is anticipated that approximately 1.5 mcy of material dredged from the York Spit Channel would be placed into the site approximately every 4 years, or until another alternate placement site or method is identified, approved, and implemented. Placement would not occur from Sept. 1 through Nov. 14 to minimize adverse impacts to sea turtles. The proposed project does not include any changes to ongoing maintenance dredging activities or any other actions beyond the establishment of the placement site extension. The draft EA and FONSI are available to the public for a 30-day review and comment period. Comments need to be received on or before Aug. 18, 2019, to be considered. The draft EA and FONSI are available via the USACE website: www.nab.usace.army.mil/DMMP. Written comments can be sent to the U.S. Army Corps of Engineers, Baltimore District, Attn: Kristina May, Planning Division, 10th Floor, 2 Hopkins Plaza, Baltimore, MD 21201. Comments can also be submitted electronically to: Kristina.K.May@usace.army.mil.

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REAL ESTATE • CLASSIFIEDS • LEGALS

LEGALS

LEGAL NOTICE

Mathews County Wetlands Board hereby gives notice that on **Wednesday, August 7, 2019 at 7 PM** in the Mathews County Historic Courthouse, 27 Court Street, Mathews, VA, the Board will hold public hearings regarding requests for authorization of the following applications:

Lydia Rice, VMRC #19-1154, Map 11A1 (A) 6, 218 Old Farm Rd. - Request to reconstruct 123' timber groin reduced to 80' and constructed of vinyl. Reconstruct an existing deteriorating 95' timber bulkhead with vinyl bulkhead within 2' of existing bulkhead. Install a 15' return wall on the northern end of the bulkhead and install 50 cubic yards of like quality material between two bulkheads. Project will take place along the Piankatank River shoreline.

Dorothy Spiggle, VMRC #19-1172, Map 11A1 (A) 5, 202 Old Farm Rd. - Request to install 65' of vinyl bulkhead 2' in front of existing bulkhead, empty space between bulkheads will be filled with appropriate material, 5' return wall will be installed if tying in with neighbor's bulkhead is not approved. Project will take place along the Piankatank River shoreline.

Richard Hellier, VMRC #19-1233, Map 21C (1) C, 162 Fleetwood Circle - Request to reinstall 34' of riprap revetment against a concrete structure, transitioning into 18' of marsh sill channelward of existing marsh grass, project will take place along the Stutts Creek shoreline.

Interested parties are invited to attend the meeting. Applications may be reviewed at the Mathews County Wetlands Board office, located in the County Administration Building, 50 Brickbat Road, Mathews, Virginia, Monday-Friday, from 8:30 a.m.-4:30 p.m. or online at https://-webapps.mrc.virginia.gov/public/habitat/-index.php

KATY WALDEN, CHAIRMAN,
MATHEWS COUNTY WETLANDS BOARD
30t2

NOTICE OF
SUBSTITUTE TRUSTEE SALE
1925 Hayes Road
Gloucester Point, VA 23062

By virtue of the power and authority contained in a Deed of Trust dated May 5, 2008, and recorded at Instrument Number 080003312 in the Clerk's Office for the Circuit Court for Gloucester County, VA, securing a loan which was originally $420,000.00., the appointed SUBSTITUTE TRUSTEE, Commonwealth Trustees, LLC will offer for sale at public auction at Main Entrance of the Circuit Court for Gloucester Co., located at 7400 Justice Drive, Gloucester, VA on:

August 9, 2019 at 3:30 PM

improved real property, with an abbreviated legal description of All that certain tract or parcel of land situate, lying and being in Gloucester Point Magisterial District, Gloucester County, Virginia, containing 2 1/2 acres, and bounded now or formerly as follows:

On the North by the land of which W.A. Lewis died seized and possessed; on the East by the land of which W.C. Lewis died seized and possessed; on the South by the land of which J.S. Brown died seized and possessed; and on the West by the Main County Road leading from Gloucester Court House to Gloucester Point, now or formerly known as Route 17.

LESS AND EXCEPTING:

That certain parcel of land containing one and 42/100 (1.42) acres, conveyed to Clarence W. Smith, by Deed dated September 23, 1946, recorded in the Clerk's Office of the Circuit Court, Gloucester County, Virginia, in Deed Book 79, at Page 391, and as more fully described in the aforesaid Deed of Trust.

TERMS OF SALE: The property will be sold "AS IS," WITHOUT REPRESENTATION OR WARRANTY OF ANY KIND AND SUBJECT TO conditions, restrictions, reservations, easements, rights of way, and all other matters of record taking priority over the Deed of Trust to be announced at the time of sale. A deposit of $20,000.00, or 10% of the sale price, whichever is lower, in cash or cashier's check payable to the SUBSTITUTE TRUSTEE will be required at the time of sale. The balance of the purchase price, with interest at the rate contained in the Deed of Trust Note from the date of sale to the date said funds are received in the office of the SUBSTITUTE TRUSTEE, will be due within fifteen (15) days of sale. In the event of default by the successful bidder, the entire deposit shall be forfeited and applied to the costs and expenses of sale and Substitute Trustee's fee. All other public charges or assessments, including water/sewer charges, whether incurred prior to or after the sale, and all other costs incident to settlement to be paid by the purchaser. In the event taxes, any other public charges have been advanced, a credit will be due to the seller, to be adjusted from the date of sale at the time of settlement. Purchaser agrees to pay the seller's attorneys at settlement a fee of $460.00 for review of the settlement documents.

Additional terms will be announced at the time of sale and the successful bidder will be required to execute and deliver to the Substitute Trustees a memorandum or contract of the sale at the conclusion of bidding.

FOR INFORMATION CONTACT:
Rosenberg & Associates, LLC
(Attorney for the Secured Party)
4340 East West Highway, Suite 600
Bethesda, Maryland 20814
301-907-8000
www.rosenberg-assoc.com
29t2

NOTICE OF OYSTER PLANTING GROUND APPLICATION

Joseph K. Reid III and Carter Marshall Reid (2019052) have applied for approximately 2 acres of oyster planting ground in East River situated in Mathews City/County. The application is located at Lat/Long: N37-24.6249 / W76-20.6087.

To view a map of the application, use this web link to search the application by number (2019052): https://webapps.mrc.virginia.gov/-public/oystergrounds/-search_applications.php or contact the VMRC Engineering/Surveying Department at 757-247-2230.

Send written comments or concerns to: Marine Resources Commission, Engineering/Surveying Department, 380 Fenwick Road, Fort Monroe,VA 23651-1064.
30t2

ORDER OF PUBLICATION

Commonwealth of Virginia
VA.CODE §8.01-316
Gloucester County J & DR-JUVENILE
Commonwealth of Virginia in re
MANCHA, EMMA MARIE
Case No. JJ016769-01-00102-00

The object of this suit is to custody/visitation of Emma M. Mancha DOB, 12/7/10.

It is ORDERED that the defendant, UNKNOWN FATHER, appear at the above named Court and protect his interest on or before 10/21/19 at 10:00AM.

Entered 7/2/2019
Krista Maguire
Clerk

28t4

PUBLIC NOTICE

Notice is hereby given that Allan G. Roy has requested authorization from the Virginia Marine Resources Commission to install 85 linear feet of riprap revetment landward of an existing bulkhead along Stutts Creek at 1383 Pine Hall Road in Mathews County.

Send comments/inquiries within 15 days to: Marine Resources Commission, Habitat Management Division, 380 Fenwick Road, Building 96, Fort Monroe, VA 23651.
30t1

PUBLIC NOTICE

Notice is hereby given that Gulway, LLC has requested authorization from the Virginia Marine Resources Commission to install a single wooden pile to support an osprey nesting platform along the Piankatank River at 1199 Roane Point Drive in Mathews County.

Send comments/inquiries within 15 days to: Marine Resources Commission, Habitat Management Division, 380 Fenwick Road, Building 96, Fort Monroe, VA 23651.
30t1

PUBLIC NOTICE

Notice is hereby given that Mr. and Mrs. Michael R. Peters have requested authorization from the Virginia Marine Resources Commission to install a 6-foot wide open pile private pier extending 750 feet channelward of mean low water with a 20-foot by 20-foot deck, 90 linear feet of 5-foot wide finger pier and a 19-foot by 44-foot open-sided boathouse along the North River at parce 52A(3)-13 on Cook Drive in Gloucester County.

Send comments/inquiries within 15 days to: Virginia Marine Resources Commission, Habitat Management Division, 380 Fenwick Road, Building 96, Fort Monroe, VA 23651
30t1

PUBLIC NOTICE

Notice is hereby given that Mr. and Mrs. Richard G. Hellier have requested authorization from the Virginia Marine Resources Commission to install 18 linear feet of stone marsh sill along the Stutts Creek shoreline at 162 Fleetwood Circle in Mathews County.

Send comments/inquiries within 15 days to: Marine Resources Commission, Habitat Management Division, 380 Fenwick Road, Building 96, Fort Monroe, VA 23651.
30t1

PUBLIC NOTICE
Unsafe Structure at
Tax Map 30-184 RPC #22743
Address: 3367 HIckory Fork Road,
Gloucester, VA 23061

Last Known Property owner and mailing address:
Charles E. Jones
5317 Locust Street
Philadelphia, PA 19139

Notice is hereby given by Gloucester County Code Enforcement, pursuant to Gloucester County Code, Section 5-16, Unsafe Structures, for the cause of removal of a single-family residence, wood framed 2+ Story American Four Square style structure located at 3367 Hickory Fork Road. If you are the owner of this property, you are directed to demolish and remove the structure in its entirety within (30) days of the last publication of this notice. A demolition permit through Gloucester Building Inspections Office (Building Two, Second Floor) will be required prior to any and all removal or demolition of the structure. If you fail to comply with the terms of this notice, the county may take action to demolish the structure. All costs associated with this demolition and removal will constitute a lien against the property. Per Section 5-16, in addition to the costs associated with removal of the structure by the County, you may be assessed a penalty of $1000.00 for failure to comply, and that penalty may be added to the lien.

Paul Koll, Building Official
Contact info. concerning this structure: Greg Gentry, Gloucester County Code Enforcement (804) 693-0219
ggentry@gloucesterva.info
29t3

PUBLIC NOTICE
Unsafe Structure at
Tax Map 51-239A RPC #29048
Address: 7871 Marina Way,
Hayes, VA 23072

Last Known Property owner and mailing address:
Gloucester Point Holdings I LLC &
Gloucester Point Holdings II LLC
1503 Santa Rosa Road
Suite #103
Richmond, VA 23229

Notice is hereby given by Gloucester County Code Enforcement, pursuant to Gloucester County Code, Section 5-16, Unsafe Structures, for the cause of removal of a damaged portion of a commercial boat cover and storage structure and walking pier located at 7871 Marina Way. If you are the owner of this property, you are directed to demolish and remove the structure in its entirety within (30) days of the last publication of this notice. A demolition permit through Gloucester Building Inspections Office (Building Two, Second Floor) will be required prior to any and all removal or demolition of the structure. If you fail to comply with the terms of this notice, the county may take action to demolish the structure. All costs associated with this demolition and removal will constitute a lien against the property. Per Section 5-16, in addition to the costs associated with removal of the structure by the County, you may be assessed a penalty of $1000.00 for failure to comply, and that penalty may be added to the lien.

Paul Koll, Building Official
Contact info. Concerning this structure: Greg Gentry, Gloucester County Code Enforcement (804) 693-0219
ggentry@gloucesterva.info
29t2

PUBLIC NOTICE
Unsafe Structure at
Tax Map 52-435A RPC #28780
Address: 2318 Perrin Creek Road,
Hayes, VA 23072

Last Known Property owner and mailing address:
Frank J. West & Blanche R. West
2318 Perrin Creek Road
Hayes, VA 23072

Notice is hereby given by Gloucester County Code Enforcement, pursuant to Gloucester County Code, Section 5-16, Unsafe Structures, for the cause of removal of a single-family residence, wood framed Single Story structure with substantial fire damage located at 2318 Perrin Creek Road. If you are the owner of this property, you are directed to demolish and remove the structure in its entirety within (30) days of the last publication of this notice. A demolition permit through Gloucester Building Inspections Office (Building Two, Second Floor) will be required prior to any and all removal or demolition of the structure. If you fail to comply with the terms of this notice, the county may take action to demolish the structure. All costs associated with this demolition and removal will constitute a lien against the property. Per Section 5-16, in addition to the costs associated with removal of the structure by the County, you may be assessed a penalty of $1000.00 for failure to comply, and that penalty may be added to the lien.

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Contact info. Concerning this structure: Greg Gentry, Gloucester County Code Enforcement (804) 693-0219
ggentry@gloucesterva.info
29t2

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Newspaper.
Save The
Environment.

US Army Corps of Engineers
Baltimore District

Wolf Trap Alternate Open Water Placement Site for Dredged Material, Northern Extension Draft Environmental Assessment Notice of Availability

PORT OF BALTIMORE 1706 MARYLAND

The U.S. Army Corps of Engineers, Baltimore District (USACE), and the Maryland Department of Transportation Port Administration (non-federal sponsor) have prepared a Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI), in accordance with the National Environmental Policy Act of 1969, for the proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) to the north, increasing the size by approximately 3,900 acres. The WTAPS Northern Extension would be located in the lower Chesapeake Bay between the Piankatank River and Mobjack Bay, approximately five miles east of Mathews County, Virginia.

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EQUAL HOUSING OPPORTUNITY

We are pledged to the letter and spirit of Virginia's and HUD's equal opportunity housing policies. Virginia's fair housing law makes it illegal to advertise any preference, limitation or discrimination based on race, color, religion, national origin, sex, elderliness, familial status or handicap. This newspaper will not knowingly accept advertising for real estate that violates the fair housing law. Our readers are hereby informed that all dwellings advertised in this newspaper are available on an equal opportunity basis. For more information about Virginia's Fair Housing Law or to file a fair housing complaint, call the Virginia Fair Housing Office at 804-367-8530. Toll free call 888-551-3247. For the hearing impaired, call 804-527-4290.

The classified ad rate is $9.00 for 25 words or less for one week and $6 for each additional week specified at time of placement. For ads with more than 25 words the charge is 40 cents per word per week. No refunds. Classified ads are run as submitted and are assumed to be correct upon publication. Deadline is 12 noon on Tuesday. Legal advertisements are charged at the rate of $1.20 per line. Gazette-Journal classified ads reach more people in Gloucester, Gloucester Point and Mathews each week than those of any other publication sold in the two counties.

To place a classified visit the Gloucester or Mathews office by 12 noon Tuesday the week of publication or call 693-3101 - 725-2191

US Army Corps of Engineers
Baltimore District

Wolf Trap Alternate Open Water Placement Site for Dredged Material, Northern Extension Draft Environmental Assessment Supplemental Notice of Availability

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Any person who has an interest which may be affected by the disposal of this dredged material may request a public hearing. The request must be submitted in writing to the district engineer within 15 days of this notice and must clearly set forth the interest which may be affected and the manner in which the interest may be affected by this activity. The draft EA and FONSI are available via the USACE website: https://www.nab.usace.army.mil/Missions/Civil-Works/Dredged-Material-Management-Plan-DMMP/. A request for a public hearing can be sent to the U.S. Army Corps of Engineers, Baltimore District, Attn: Kristina May, Planning Division, 10th Floor, 2 Hopkins Plaza, Baltimore, MD 21201, or can be submitted electronically to: Kristina.K.May@usace.army.mil.

DAILY PRESS MEDIA GROUP

COMMONWEALTH OF VIRGINIA
CITY OF NEWPORT NEWS

6442896

This day, personally appeared before me, George Hunt, and made oath as follows:

1. He/She is employed in the Office Services Department of the Daily Press, LLC., a newspaper publishing company in the City of Newport News, Virginia.
2. The annexed advertisement of Order No. 6442896 was published for 1 insertion(s) in the Daily Press on the following dates:

Sep 14, 2019

Sold To:
U.S. Army Corps of Engineers Baltimore District - CU80056901
2 Hopkins Plz
Baltimore,MD 21201

Bill To:
U.S. Army Corps of Engineers Baltimore District - CU80056901
2 Hopkins Plz
Baltimore,MD 21201

George Hunt

George Hunt

9/16/2019
Date

Subscribed and sworn to before me:

This 16 day of September 20 19 ,

My commission expires: March 31, 2023

Natasha Renee Braswell

Signature of Notary Public

Registration Number: 7821879

NATASHA RENEE BRASWELL
NOTARY PUBLIC
REG. #7821879
MY COMMISSION EXPIRES
COMMONWEALTH OF VIRGINIA

Wolf Trap Alternate Open Water Placement Site for Dredged Material, Northern Extension Draft Environmental Assessment Supplemental Notice of Availability

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6442896

WOLF TRAP ALTERNATE OPEN WATER PLACEMENT SITE
NORTHERN EXTENSION
FINAL ENVIRONMENTAL ASSESSMENT
OCTOBER 2019

APPENDIX B
ENDANGERED SPECIES ACT COORDINATION

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

Planning Division

APR 10 2019

Mr. Mark Murray-Brown
Section 7 Coordinator
Greater Atlantic Regional Fisheries Service
National Oceanic and Atmospheric Administration
55 Great Republic Drive
Gloucester, MA 01930
NMFS.GAR.ESA.Section7@NOAA.gov

Dear Mr. Murray-Brown:

The U.S. Army Corps of Engineers (USACE), Baltimore District, is preparing an Environmental Assessment (EA) regarding a proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) located in the Virginia waters of the Chesapeake Bay, east of Mathews County, Virginia. The WTAPS would be extended to the north, increasing the size of the placement site by approximately 3,900 acres. The WTAPS northern extension (WTAPSNE) would serve as an open water placement site for material dredged primarily from the York Spit Channel, but may also be used as a placement site for other dredging projects in the lower Chesapeake Bay pending evaluation. The purpose of extending the WTAPS northward is to minimize adverse impacts to overwintering female blue crabs, which are more abundant in the current WTAPS site, particularly in the southern portion. The WTAPSNE has been found to provide much less suitable habitat for overwintering female blue crabs. The EA will evaluate the effects to the natural and human environment from placement of dredged material into WTAPSNE. Dredging activities will not be evaluated in the EA, as those impacts were evaluated in the Environmental Impact Statement for the 2005 Baltimore Harbor and Channels (Maryland and Virginia) Dredged Material Management Plan and other previous National Environmental Policy Act (NEPA) documents.

The capacity of the site is over 30 million cubic yards based upon placement of dredged material within the site boundaries up to an approximate depth of -30 feet mean lower low water. For the initial placement cycle, approximately two million cubic yards of dredged material from operation and maintenance of the York Spit Channel would be placed into WTAPSNE, which is expected to occur in the fall of 2019. Dredging would be conducted in one dredging cycle that would last for approximately 4½ months. Dredging and open water placement activities would occur 24 hours per day and seven days a week during any given dredging cycle (mobilization to demobilization of the dredging operation). To minimize adverse impacts to sea turtles, dredging in the York Spit Channel does not occur from September 1 through November 14 in accordance with the National Marine Fisheries Service (NMFS) 2018 Biological Opinion (F/NER/2018/14816), and placement into the WTAPSNE would not occur during this period. After initial placement into WTAPSNE, it is anticipated that approximately 1.5 million cubic yards of dredged material from the York Spit Channel would be placed into the site

approximately every 4 years. WTAPSNE would reach capacity (be full) after approximately 20 cycles of maintenance of the York Spit Channel in about the year 2100.

USACE is preparing the EA in accordance with NEPA. The draft EA is expected to be released to the public in the summer of 2019 and will include a Biological Assessment (BA) that evaluates impacts on federally-listed species under NMFS purview in accordance with the Endangered Species Act. Please review the attached draft BA and provide any comments your agency may have within 30 days of the date of this letter. If you have any questions, please contact Kristina May by email at Kristina.K.May@usace.army.mil or by telephone at 410-962-6100.

Sincerely,

Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division

Enclosure

cc: Brian Hopper, Fishery Biologist, Chesapeake Bay Office, brian.d.hopper@noaa.gov

From: Brian D Hopper - NOAA Federal
To: May, Kristina K CIV USARMY CENAB (USA)
Subject: [Non-DoD Source] Re: ESA Draft Biological Assessment - Wolf Trap Alternate Open Water Placement Site Northern Extension
Date: Thursday, April 18, 2019 2:13:57 PM

Hi Kristina,

I've had a chance to look at your request for consultation and it is our belief that the changes you've identified do not cause effects that are different or in addition to those considered in the Biological Opinion; therefore, we are going to treat this like a request for re-initiation rather than a request for concurrence with a not likely to adversely affect determination. So, if it is okay with you, I'm going to modify your letter so that it addresses the different re-initiation triggers and requests concurrence with a determination that re-initiation is not warranted. Please let me know if you have any questions.

Regards,
-Brian

On Wed, Apr 10, 2019 at 1:31 PM Brian D Hopper - NOAA Federal <brian.d.hopper@noaa.gov <mailto:brian.d.hopper@noaa.gov> > wrote:

> Thanks, I'll take a look.
>
> On Wed, Apr 10, 2019 at 10:41 AM May, Kristina K CIV USARMY CENAB (USA) <Kristina.K.May@usace.army.mil <mailto:Kristina.K.May@usace.army.mil> > wrote:
>
> > Good morning,
> >
> > USACE Baltimore District is preparing an Environmental Assessment regarding a proposed extension of the existing Wolf Trap Alternate Open Water Placement Site located in the Virginia waters of the Chesapeake Bay. As part of the EA, USACE prepared a draft ESA Assessment. USACE would appreciate any comments NMFS may have on the draft ESA Assessment. Please see the attached coordination letter and draft ESA assessment for your review.
> >
> > Please contact me if you have any questions.
> >
> > Thank you,
> > Kristina May
> > Biologist, Planning Division
> > USACE, Baltimore District
> > 410-962-6100
>
> --
>
> Brian D. Hopper
> Protected Resources Division
> NOAA Fisheries

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DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201

Planning Division May 07, 2019

Michael Asaro, PhD
Protected Resources Division
Greater Atlantic Region Fisheries Office
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930

Re: Request for Concurrence of a No Re-Initiation Determination for the Wolf Trap Alternate Open Water Placement Site Northern Extension

Dear Dr. Asaro,

This letter is to request Endangered Species Act (ESA) concurrence from your office with our determination that re-initiation is not warranted for the proposed Wolf Trap Alternate Open Water Placement Site Northern Extension (WTAPSNE) located in the Virginia waters of the Chesapeake Bay. We have made the determination under Section 7 of the ESA that the proposed action may affect, but is not likely to adversely affect, those species listed as threatened or endangered by the National Oceanic and Atmospheric Administration, (NOAA) National Marine Fisheries Service (NMFS).

Previously, on March 14, 2018, your office initiated consultation on the Norfolk Harbor Navigation Improvement Project and the Craney Island Eastward Expansion project, with updates to projects included in the 2012 Batch Biological Opinion. The Wolf Trap Alternate Open Water Placement Site (WTAPS)[1] is currently used as a placement site for sediments dredged during routine maintenance dredging of the York Spit Channel. This site was included in the 2012 Batch Opinion and addressed in the Opinion you issued on October 5, 2018, which concluded that the proposed action may adversely affect but is not likely to jeopardize the continued existence of any DPS of Atlantic sturgeon, Kemp's ridley or green sea turtles or the Northwest Atlantic DPS of loggerhead sea turtles and is not likely to adversely affect leatherback sea turtles, hawksbill sea turtles, shortnose sturgeon, fin whales, sei whales, blue whale, sperm whales, and North Atlantic right whales. Furthermore, the disposal of dredge materials were found to be insignificant or

[1] The *existing* dredged material placement is termed "alternate" because it superseded a historical placement site further to the east, closer to the main channel within the Bay. That original site is shown on NOAA navigation charts, but has been inactive for decades and is not relevant to the proposed action.

discountable and, therefore, not likely to adversely affect ESA-listed species under your jurisdiction. The proposed action would establish an extension of the existing WTAPS site to the north, and the nature of the work that would be conducted at the site is very similar to the projects that were the subject of formal consultation; therefore we believe re-initiation is not necessary.

1. Proposed Action

The proposed action would establish an extension of the existing WTAPS site to the north, increasing the size of the placement site by approximately 16km^2, and is herein referred to as the "WTAPS Northern Extension" (see attachments). WTAPSNE would serve as an open water placement site for dredged material. The purpose of the proposed action is to minimize impacts to overwintering female blue crabs, which are believed to heavily utilize portions of the existing WTAPS site. Available data indicate that the WTAPSNE site, which includes a deeper, muddy channel (hereafter referred to as the "trough"), provides much less suitable habitat for overwintering female blue crabs (Lipcius & Knick. 2016). The WTAPSNE site has been advanced by agencies of the Commonwealth of Virginia, as an alternative to the currently-used WTAPS site, to minimize impacts to blue crabs.

Approximately two million cubic yards of dredged material from operations and maintenance (O&M) of the York Spit Channel would be placed into the WTAPSNE during the initial placement event that is expected to occur in the fall of 2019. Dredged material placement would occur by hopper dumping. Dredged material placement would be conducted in one dredging cycle that would last for approximately 4½ months (approximately 15,000 cubic yards of material dredged per day). After initial placement into the WTAPSNE, it is anticipated that approximately 1.5 million cubic yards of dredged material from the York Spit Channel would be placed into the site during each subsequent dredging cycle, which occurs approximately every 4 years. The capacity of the site was calculated to be over 30 million cubic yards, which assumes infilling with dredged material up to an approximate elevation of -30 feet MLLW. The estimated lifespan of this placement site is roughly 20 dredging cycles, which would occur around the year 2100.

Project vessels expected to be used include one hopper dredge (total capacity can range from 3,600 to 8,600 cubic yards depending on the dredge contractor used), one survey boat and one crew boat. The speed of the hopper dredge is not expected to exceed three knots while transiting from the dredge site to the open water placement site with a full load, and it is expected to operate at a maximum speed of ten knots while empty. To minimize the risk of take and adverse effects to sea turtles, USACE does not perform dredging of the York Spit Channel during September 1 through November 14, and dredged material placement would not occur during this period. Additionally, USACE dredging activities adhere to the applicable Reasonable and Prudent Measures as stipulated in the Biological Opinion for the Construction and Maintenance of Chesapeake Bay Entrance Channels, dated October 5, 2018, to minimize risk to listed species that may be present when dredging is undertaken. An experienced endangered species observer would be present on the vessel at all times.

2. Description of the Action Area

The proposed WTAPSNE project encompasses a rectangular area measuring roughly 6,060 by 28,340 feet (3,900 acres), extending north-northeast from the northern end of the existing WTAPS site. It also includes the extent of the potential turbidity plumes created from open water placement (up to a 6,500-foot radius from the placement location), and the routes travelled by the project vessels from the dredge site to the open water placement site. These areas are expected to encompass all of the direct and indirect effects of the proposed action.

Based on bathymetric surveys conducted by USACE Baltimore District in April, July and August 2017, water depths in the WTAPSNE range from 23 feet to 55 feet mean lower low water (MLLW), with an average depth of 36 feet MLLW. The typical tidal range in the action area is approximately 2.85 feet, although this varies significantly with time of the month (spring and neap tides) as well as due to storm activity, which can create significant storm surges well beyond the normal tidal range. Tides are (semi)diurnal in the Chesapeake Bay, with two high and low tides per day (NMFS Biological Opinion 2018).

The WTAPSNE site bottom is characterized as a flat, relatively featureless plain (termed as bay-stem plains by Wright et al. 1987) with a deep, natural channel or relict channel (termed bay-stem channel by Wright et al. 1987) running roughly north-to-south through the site. Both bottom types are typically composed of mud or fine sand with silt and clay filling interstices, and experience relatively strong near-bottom tidal currents. Bay stem plains are characterized by high densities of tube dwellers including the annelid, *Euclymene zonalis*, the anemone, *Ceriantheopsis sp.* and the amphipod crustacean, *Ampelisca abdita*. The tubes of *Chaetopterus variopedatus* extend 2 to 3 centimeters into the water column. Sediment reworking by *Euclymene zonalis*, a "conveyor-belt" species, produces a hummocky bed surface. Bay-stem channels generally share similar roughness features (Wright et al. 1987), although benthic communities may differ. The trough at WTAPSNE is somewhat bathymetrically isolated by shallower depths at either end, which may limit near-bottom water exchange, and lead to greater seasonal oxygen stress. Virginia Marine Resources Commission (VMRC) identifies no submerged aquatic vegetation (SAV) or shellfish beds located within the footprint or adjacent to the WTAPS North Extension [or WTAPSNE] (VMRC 2019). SAV is typically limited to depths of less than 2 m, and oysters to depths less than 8 m in the Bay (VIMS, 2019), which are shallower than the action area. The area is of significant seasonal importance to female blue crabs (see blue crab discussion below).

Water temperatures in the Chesapeake Bay within the project area fluctuate widely throughout the year, ranging from 1° Celsius (C) in the winter to 29°C in the summer. Changes in water temperature influence where SAV can grow, and when fish and crabs feed, reproduce and migrate (CBP 2019). Salinity in the Chesapeake Bay varies from season to season and year to year depending largely on the amount of freshwater flowing into the bay. Generally, salinity in the lower Chesapeake Bay is characterized as polyhaline (between 18 and 30 parts per thousand (ppt)) (The Center for Conservation Biology 2010). Long-term water quality data for the WTAPSNE site was obtained from the VECOS website. (VIMS 2019 ECOS). Data were used for monitoring station "CB6.3 – Lower West Central Chesapeake Bay", which is adjacent to the WTAPSNE site. Normal surface salinities within the WTAPSNE site vary from 10 to 24 ppt, with an average of 17.9 ppt. Normal bottom salinities vary from 14 to 28 ppt, with an average of 22.2 ppt.

The project area is within an open bay segment that has been identified in the Virginia Department of Environmental Quality (VADEQ) 2018 Integrated Report as meeting state water quality standards for dissolved oxygen (30-day), during the summer months, but lacks sufficient information for shorter periods, and is therefore remains classified as "impaired." VADEQ listed the area as not impaired for benthic life (VADEQ 2018). The proposed placement area does, however, lie within about 16 km of waters that have been shown to experience periodic hypoxia (Dauer et al., 1992), and likely remains susceptible to occasional hypoxic conditions at depth during years when conditions promote large Bay "dead zones."

3. ESA-listed Species Found in Action Area

The federally-listed threatened or endangered species present in or near the proposed action area are listed and described below. This list was verified by contacting NMFS Protected Resource Division Staff (B. Hopper, pers. comm. April 4, 2019). No ESA-listed species critical habitat is located within the action area.

Sea Turtles

Loggerhead Turtle (*Caretta caretta*)
(76 FR 58868; Recovery Plan: NMFS and USFWS 2008)
Northwest Atlantic Distinct Population Segment (DPS)

Green Turtle (*Chelonia mydas*)
(81 FR 20057; Recovery Plan: NMFS and USFWS 1991)
North Atlantic DPS

Leatherback Turtle (*Dermochelys coriacea*)
(35 FR 8491; Recovery Plan: NMFS and USFWS 1992)

Kemp's ridley Turtle (*Lepidochelys kempii*)
(35 FR 18319; Recovery Plan: NMFS et al. 2011)

Sturgeon

Atlantic Sturgeon (*Acipenser oxyrinchus oxyrinchus*)
(77 FR 5880 and 77 FR 5914; No Recovery Plan)
Gulf of Maine DPS
Carolina DPS
New York Bight DPS
Chesapeake Bay DPS
South Atlantic DPS

Shortnose Sturgeon (*Acipenser brevirostrum*)
(32 FR 4001; Recovery Plan: NMFS 1998)

Sea Turtles

Four species of federally-listed threatened or endangered sea turtles are found seasonally (from May to November) in the Chesapeake Bay (primarily south of Baltimore, Maryland): threatened Northwest Atlantic DPS juvenile, subadult and adult loggerhead sea turtle (*Caretta caretta*), threatened North Atlantic DPS juvenile and adult green sea turtle (*Chelonia mydas*), endangered juvenile Kemp's ridley sea turtle (*Lepidochelys kempii*), and the endangered juvenile and adult leatherback sea turtle (*Dermochelys coriacea*). The Chesapeake Bay is an important foraging area for sea turtles and an important developmental habitat for juvenile sea turtles, particularly loggerheads (GARFO Master ESA Species Table–Sea Turtles; NMFS Biological Opinion 2018).

In general, listed sea turtles are seasonally distributed in coastal U.S. Atlantic waters, migrating to and from habitats extending from Florida to New England, with overwintering concentrations in southern waters. As water temperatures rise in the spring, turtles begin to migrate northward. As water temperatures decline rapidly in the fall, turtles in northern waters begin their southward migration. Sea turtles are expected to be in the vicinity of the action area during the warmer months, typically when water temperatures are above 11°C. This generally coincides with the months of May through November, with the highest concentration of sea turtles present from June through October. Satellite tracking studies of sea turtles in the Northeast U.S. found that foraging turtles mainly occurred in areas where the water depth was between approximately 16 and 49 feet. The action area and the depths preferred by sea turtles do overlap, suggesting that if suitable forage is present, sea turtles may be foraging in the areas where the proposed action would occur (NMFS Biological Opinion 2018).

Atlantic Sturgeon

There are five DPSs of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*): the New York Bight, Chesapeake Bay, Carolina and South Atlantic DPSs are listed as endangered under the ESA, and the Gulf of Maine DPS is listed as threatened under the ESA. The range of all five DPSs extends along the Atlantic coast from Canada to Cape Canaveral, Florida. The Chesapeake Bay is known to be used by Atlantic sturgeon originating from all five DPSs (NMFS Biological Opinion 2018).

Atlantic sturgeon are well distributed throughout the Chesapeake Bay typically from spring to fall. Atlantic sturgeon spawn in freshwater portions of large rivers. Spawning is known to occur in the following tributaries of the Virginia waters of the Chesapeake Bay: the James River (to Boshers Dam), Appomattox River (tributary of the James River; range not confirmed, but likely up to Battersea Dam), Potomac River (to Little Falls), Rappahannock River (range not confirmed, but likely throughout the entire river) and in the York River (to its confluence with the Mattaponi and Pamunkey Rivers) (GARFO Master ESA Species Table–Atlantic Sturgeon 2018). All of these spawning or potential spawning locations are located outside of the action area. Atlantic sturgeon spawn and develop within natal rivers, therefore eggs and larvae of Atlantic sturgeon would not occur in the action area. Although juvenile Atlantic sturgeon could occasionally venture into the action area year-round, they generally remain within natal rivers or seek winter refuge in overwintering areas, which are not known to occur in the action area (NMFS Biological Opinion 2018). Adult Atlantic sturgeon are more likely to pass through the action area as they move to these rivers to spawn in the spring and then again as they return to the ocean. A fall spawning event has been documented in the James River, and is suspected to also occur in the York and Potomac Rivers.

On August 17, 2017, NMFS published a final rule that designated critical habitat for all five DPSs of Atlantic sturgeon. The rule became effective on September 18, 2017 (82 FR 39160). Critical habitat is defined as specific areas within the geographical areas that are occupied by the species, that contain physical or biological features essential to the conservation of that species, and that may require special management considerations (NOAA 2017). Critical habitat has been designated for the Chesapeake Bay DPS of Atlantic Sturgeon in the following tributaries of the Virginia waters of the Chesapeake Bay: the Nanticoke River, Marshyhope Creek, Potomac River, Rappahannock River, York/Mattaponi/Pamunkey Rivers, and the James River. Atlantic sturgeon critical habitat is not designated in the action area, with the closest designated critical habitats being those for segments of the York and Rappahannock Rivers, both of which are roughly ten miles from the action area.

Shortnose Sturgeon

Shortnose sturgeon occur in large coastal rivers and estuaries along the east coast of North America and Canada. Shortnose sturgeon are rare in the upper Chesapeake Bay and extremely rare in the lower Chesapeake Bay. From 1996 to 2006, research programs that focused on Atlantic sturgeon throughout the Chesapeake Bay provided evidence of the capture of shortnose sturgeon. Only one genetically-verified shortnose sturgeon was documented in the lower Chesapeake Bay at the mouth of the Rappahannock River, and 72 shortnose sturgeon were documented in the upper Chesapeake Bay from 1996 to 2006 (Balazik 2017). Before 1996, there were only 15 published records of shortnose sturgeon in the Chesapeake Bay, and most of these were based on personal observations from the upper Chesapeake Bay during the 1970s and 1980s (NMFS Biological Assessment of Shortnose Sturgeon 2010). A small, remnant spawning population may exist in the Potomac River, as evidence of a single female spawning in the Potomac was reported by Kynard et al. in 2009. One shortnose sturgeon was captured in the James River in 2016. This was the first verified occurrence of shortnose sturgeon inhabiting the James River (Balazik 2017).

Adult shortnose sturgeon use the C&D Canal occasionally to move from the Chesapeake Bay to the Delaware River. Adults may also occur in the Susquehanna River (up to the Conowingo Dam) foraging and potentially overwintering, in the Potomac River (up to Little Falls Dam) foraging, overwintering, and potentially spawning, and foraging in the Rappahannock River (GARFO Master ESA Species Table–Shortnose Sturgeon 2018). Documented modern use of Virginia waters of the Chesapeake Bay is limited to two individual shortnose sturgeon; one captured in 2016 and a second sturgeon (a confirmed gravid female) caught in 2018 (NMFS Biological Opinion 2018).

Movements of individuals between river systems has been documented, but is limited to very few individuals per generation. As with the Atlantic sturgeon, spawning and early life stages of the shortnose sturgeon only occur in freshwater habitats (NMFS Biological Assessment of Shortnose Sturgeon 2010). Therefore, no life stages besides salinity-tolerant adults should occur in the action area. It is possible that migrating or opportunistically feeding shortnose sturgeon may be present in the action area for short periods of time, but lack of established populations in and adjacent to the action area presumably make this less likely than in areas of the Bay closer to where established populations occur.

4. Effects Determination

This section contains USACE's evaluation of the probable effects of the proposed action upon the identified listed species found in the action area. This evaluation is presented based upon the separate stressors that would result from project activities, and that may directly or indirectly affect those species.

Burial from Dredged Material Placement
Dredged material placement would occur via direct dumping of dredged material from the hopper. Each hopper load would be between 3,600 to 8,600 cy in volume, depending on the dredging contractor chosen. Dredged material would consist principally of silts and clays with some sand. When dumped, this material forms a dense, fluidized jet of sediment that rapidly descends to the Bay bottom, covering an area of roughly 100 by 50 feet in size and in thickness from a few inches to a maximum of up to several feet near the center of the deposit. Because the material would be suction dredged, it would not contain any large rocks or clumps of dense, cohesive material that would pose an impact hazard to listed species. Adult sea turtles and Atlantic sturgeon are large animals with strong swimming ability, and USACE is not aware of any reasonable cause for concern that these animals would be vulnerable to direct impacts via burial. Therefore, effects to sea turtles and Atlantic sturgeon from burial during open water placement activities are discountable. While shortnose sturgeon might occur as transients within the action area, their presence is so unlikely that proposed action effects are discountable[2] (NMFS 2018).

Turbidity from Dredged Material Placement
Placement of dredged material would cause a temporary increase in suspended sediment within portions of the action area. Re-suspended sediment is expected to settle out of the water column within a few hours. During open water placement activities, suspended sediment levels have been reported to be as high as 500 mg/L within 250 feet of the bottom-dump scow, decreasing to background levels (i.e., 15 to 100 mg/L depending on location and sea conditions) within 1,000 to 6,500 feet of the scow. TSS concentrations near the center of the plume created by the placement of dredged material have been observed to reach near background levels in 35 to 45 minutes (NOAA Turbidity and Total Suspended Sediment Effects Table 2017). Transportation activities should not increase turbidity due to the depth of the Chesapeake Bay in the action area, relative to vessel draft.

No information is available on the effects of turbidity on juvenile and adult sea turtles. Sea turtles, as air breathing reptiles, are unlikely to be impacted by temporary increases in turbidity or suspended sediments. Prolonged or excessive sedimentation could make habitat less suitable for sea turtles and hinder their capability to forage, thereby causing turtles to leave or avoid less desirable areas. As sea turtles are highly mobile, they would be able to avoid any sediment plume they encounter with minor movements to alter their course away from the sediment plume. Thus,

[2] The 2018 NMFS Batch Biological Opinion states: "*Given the range of the species (remaining mostly in the river systems, with some coastal migrations between rivers), its general restriction to the Maryland waters of the Chesapeake Bay, and the proposed action occurring within the mainstem of the Virginia waters of the Chesapeake Bay, shortnose sturgeon are expected to be extremely rare in areas where the action may occur. As shortnose sturgeon are extremely unlikely to be present in the action area, except for rare transient occurrences, impacts to this species as a result of the proposed action are discountable.*"

any direct effect from open water placement activities on sea turtle movements is likely to be immeasurable and therefore insignificant.

The life stages of Atlantic sturgeon most vulnerable to increased sediment are eggs and non-mobile larvae, which are subject to burial and suffocation. As noted above, no sturgeon eggs and/or larvae would be present in the action area. Sturgeon in the action area during open water placement activities may avoid a sediment plume by swimming around it. However, if sturgeon do interact with the plume, expected TSS levels (up to 500 mg/L) are below those shown to have an adverse effect on fish (580 mg/L for the most sensitive species, with 1,000 mg/L more typical) (Burton 1993). Based on this information, the effects of suspended sediment resulting from open water placement activities on Atlantic sturgeon are extremely unlikely; therefore, effects to Atlantic sturgeon from turbidity related to open water placement activities are discountable. While shortnose sturgeon might occur as transients within the action area, their presence is so unlikely that proposed action effects related to turbidity are discountable.

Contaminants

USACE conducted sampling of the York Spit Channel O&M material in June 2013 using methods outlined in the Inland Testing Manual, which is national guidance developed by the U.S. Environmental Protection Agency and USACE. Concentrations of detected analytes in sediment samples from the York Spit Channel was compared to sediment quality guidelines (SQGs) for marine sediments to assess the sediment quality of the material proposed for dredging. SQGs were used to identify potential adverse biological effects associated with contaminated sediments. Threshold effects levels (TELs) typically represent concentrations below which adverse biological effects are rarely observed, while probable effects levels (PELs) typically represent concentrations in the middle of the effects range and above which effects are more frequently observed (EA 2014).

Of the 18 tested metals, 9 of them – arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver, and zinc – have TEL and PEL values. All of the tested metals were detected in each sediment sample from the York Spit Channel; however, none of the concentrations exceeded TEL or PEL concentrations (EA 2014). In addition to comparing sediment results to sediment quality guidelines, the acid volatile sulfide (AVS) / Simultaneously Extracted Metals (SEM) ratio was calculated to assess the bioavailability of the five simultaneously extracted metals included in the analysis (cadmium, copper, lead, nickel, and zinc). The AVS/SEM ratios for sediments from the York Spit Channel indicated that these metals would most likely be bound to organic matter and would not be expected to be bioavailable to aquatic organisms in these locations (EA 2014). None of the tested polycyclic aromatic hydrocarbons (PAHs) were detected in site water, receiving water, or in the standard elutriates samples taken from the York Spit Channel. This indicates that PAHs are tightly bound to sediments and are not likely to be released into the water column during open water placement. Total polychlorinated biphenyls (PCBs) concentrations in the York Spit Channel sediments did not exceed TEL values (EA 2014).

Based on the sampling results, the placement of dredged material from the York Spit Channel into the WTAPS north extension would not be toxic to marine life and would not be likely to cause adverse effects to sea turtles, Atlantic sturgeon or their prey. Metals of concern and PAHs occur at low levels, and would likely settle out onto the bottom remaining adsorbed to sediment and not be released into the water column. Furthermore, the high flushing rate (due to the water exchange and tidal fluctuations) of the Chesapeake Bay is anticipated to minimize potential turbidity plumes

and cause them to be more quickly dispersed, minimizing long term impacts to water quality. Because the dredged material was tested to ensure it is not toxic, effects to sea turtles and Atlantic sturgeon would be too small to be meaningfully measured, detected, or evaluated and are, therefore, insignificant. While shortnose sturgeon might occur as transients within the action area, their presence is so unlikely that proposed action effects related to contaminants are discountable.

Habitat Modification from Open Water Placement

Effects to listed species can be caused by disturbance to the sea floor that reduces the availability of prey species or alters the composition of forage. Open water placement would deposit dredged material onto the existing bottom which could indirectly affect sea turtles and sturgeon by reducing available prey species through the alteration of the existing biotic assemblages.

Green sea turtles forage on SAV. No SAV is present within or adjacent to the action area because it exceeds photic zone depth. Leatherback sea turtles feed on jellyfish. As jellyfish are pelagic species seasonally abundant throughout the middle and lower Bay, impacts of reduction in forage species for leatherback sea turtles from placement of dredged material would be insignificant. Kemp's ridley and loggerhead sea turtles forage on horseshoe crabs, but also consume other crustaceans, sponges, jellyfish, mollusks, snails, fish, fish eggs and SAV. Some species of benthic invertebrates that sturgeon and turtles feed on have limited mobility and could be buried during open water placement activities. Some buried animals would be able to migrate upward through the sediment and reestablish themselves, if near the periphery of the immediate placement area, where the overburden is not too thick to prevent upward migration. Areas where dredged material would be placed are expected to be recolonized by individuals from similar habitats nearby.

While there is likely to be some temporary reduction in the amount of prey in the open water placement area, the action would result in the loss of only a small portion of the available forage in Chesapeake Bay. Therefore, sturgeon and sea turtles opportunistically foraging in the action area would be able to forage in other areas of the Bay, where benthic communities have not been removed or buried. As a result, indirect effects due to habitat modification from open water placement and burial of the existing bottom would be too small to be meaningfully measured or detected, and are therefore insignificant. The proposed action would not affect Atlantic sturgeon critical habitat. While shortnose sturgeon might occur as transients within the action area, their presence is so unlikely that proposed action effects related to habitat modification are discountable.

Vessel Traffic

Project vessels expected to be used include one hopper dredge, one survey boat and one crew boat. These vessels may collide with sea turtles when they are at the surface. Although little is known about a sea turtle’s reaction to vessel traffic, it is generally assumed that turtles are more likely to avoid injury from slower moving vessels since the turtle has more time to maneuver and avoid the vessel. The speed of the hopper dredge is not expected to exceed three knots while transiting from the dredge site to the open water placement site with a full load, and it is expected to operate at a maximum speed of ten knots while empty. In addition, the risk of ship strike is influenced by the amount of time the animal remains near the surface of the water. The presence of an experienced endangered species observer who can advise the vessel operator to slow the vessel or maneuver safely when sea turtles are spotted would further reduce the potential risk for interaction with vessels. Atlantic sturgeon are demersal and would not be susceptible to strikes from project

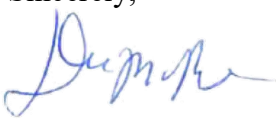
vessels. While shortnose sturgeon might occur as transients within the action area, their presence is so unlikely that proposed action effects related to vessel traffic are discountable.

Conclusions

Based on an analysis of all of the effects described above, the USACE Baltimore District has determined that the proposed placement of dredged material at the Wolf Trap Alternate Open Water Placement Site Northern Extension may affect, but is not likely to adversely affect ESA-listed species. Because the proposed action is essentially equivalent in scope and effect to the placement activities previously evaluated within the 2018 Batch Biological Opinion for the Construction and Maintenance of Chesapeake Bay Entrance Channels, re-initiation of consultation is not warranted. We certify that we have used appropriate scientific and commercial data available to complete this analysis. We request that NMFS concur with this determination.

If you have any questions regarding this matter, please contact Ms. Kristina May by phone at (410) 962-6100 or by email at Kristina.K.May@usace.army.mil.

Sincerely,



Daniel M. Bierly
Chief, Civil Project Development Branch
U.S. Army Corps of Engineers, Baltimore District

Cc: Brian Hopper, NOAA NMFS, Greater Atlantic Region Fisheries Office,
brian.d.hopper@noaa.gov

Attachments:
Maps of the Wolf Trap Alternate Open Water Placement Site Northern Extension (4 pages)

References

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- https://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/maps/garfo_master_esa_species_table_-_sea_turtles_111516.pdf
- https://www.greateratlantic.fisheries.noaa.gov/protected/section7/listing/garfo_master_esa_species_table_-_shortnose_sturgeon_09172018.pdf
- https://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/maps/garfo_master_esa_species_table_-_atlantic_sturgeon_06072018.pdf
- http://www.nmfs.noaa.gov/pr/pdfs/species/shortnosesturgeon_biological_assessment2010.pdf
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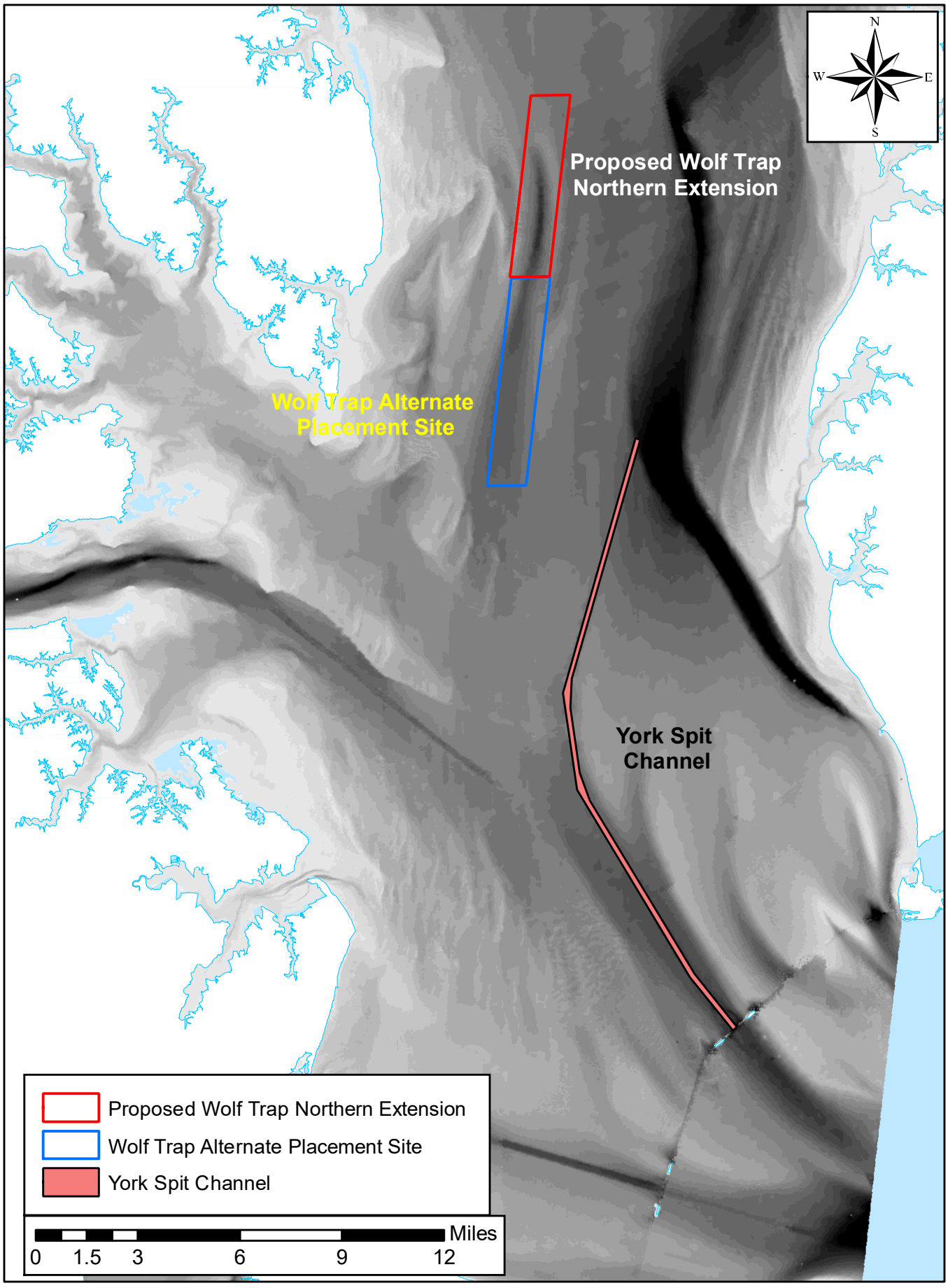
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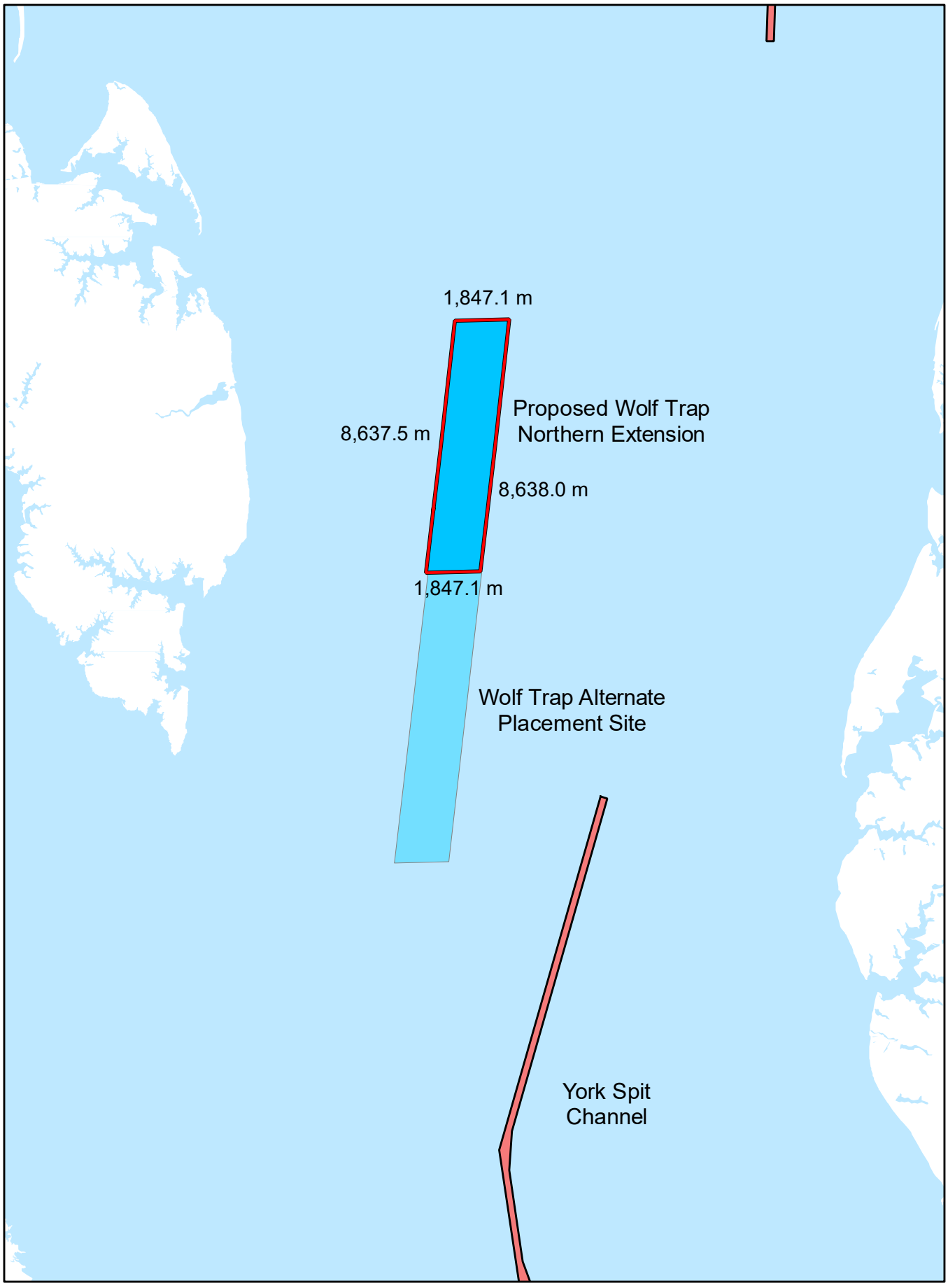
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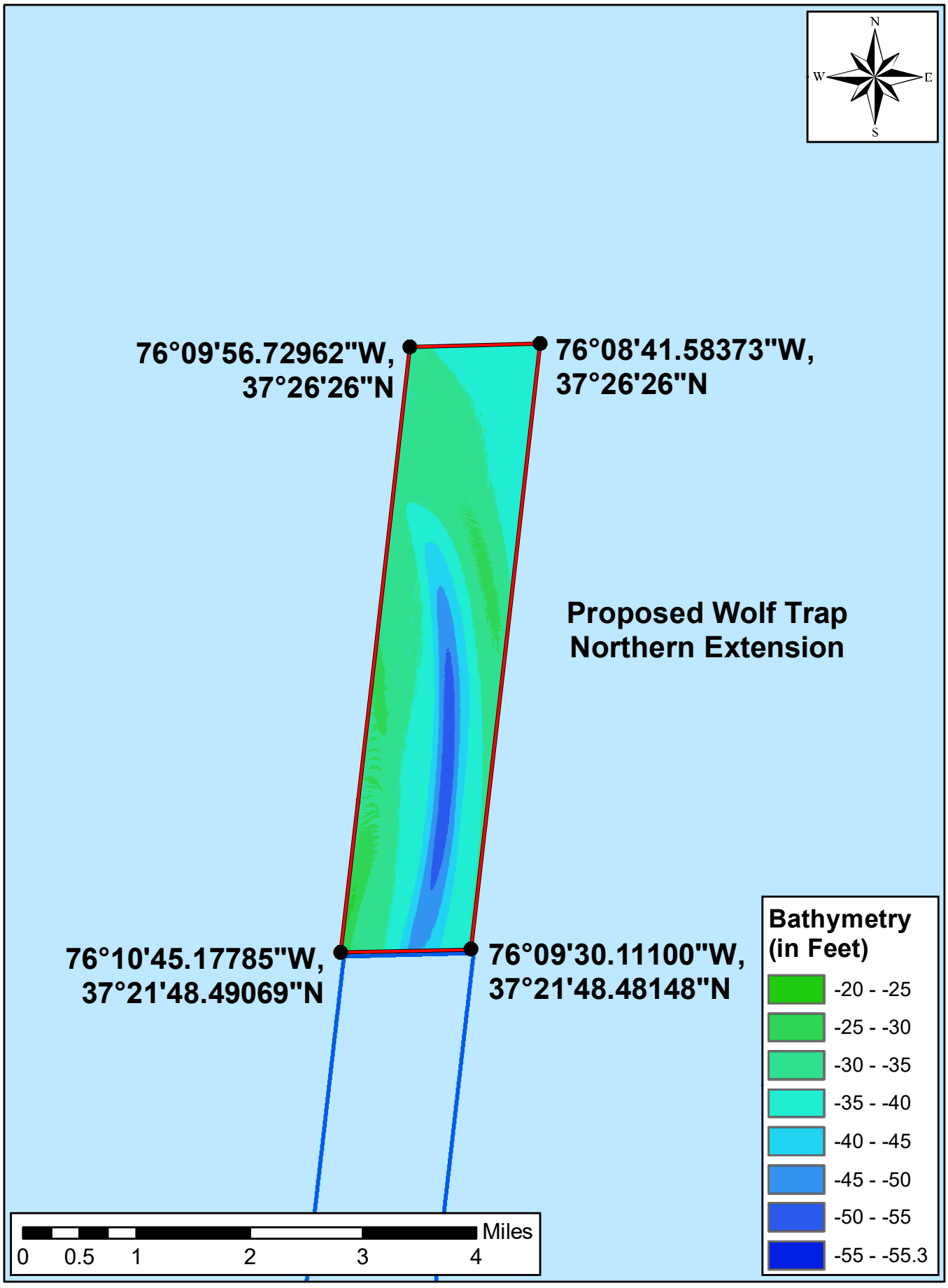
Wolf Trap Alternate
Placement Site
York Spit
Channel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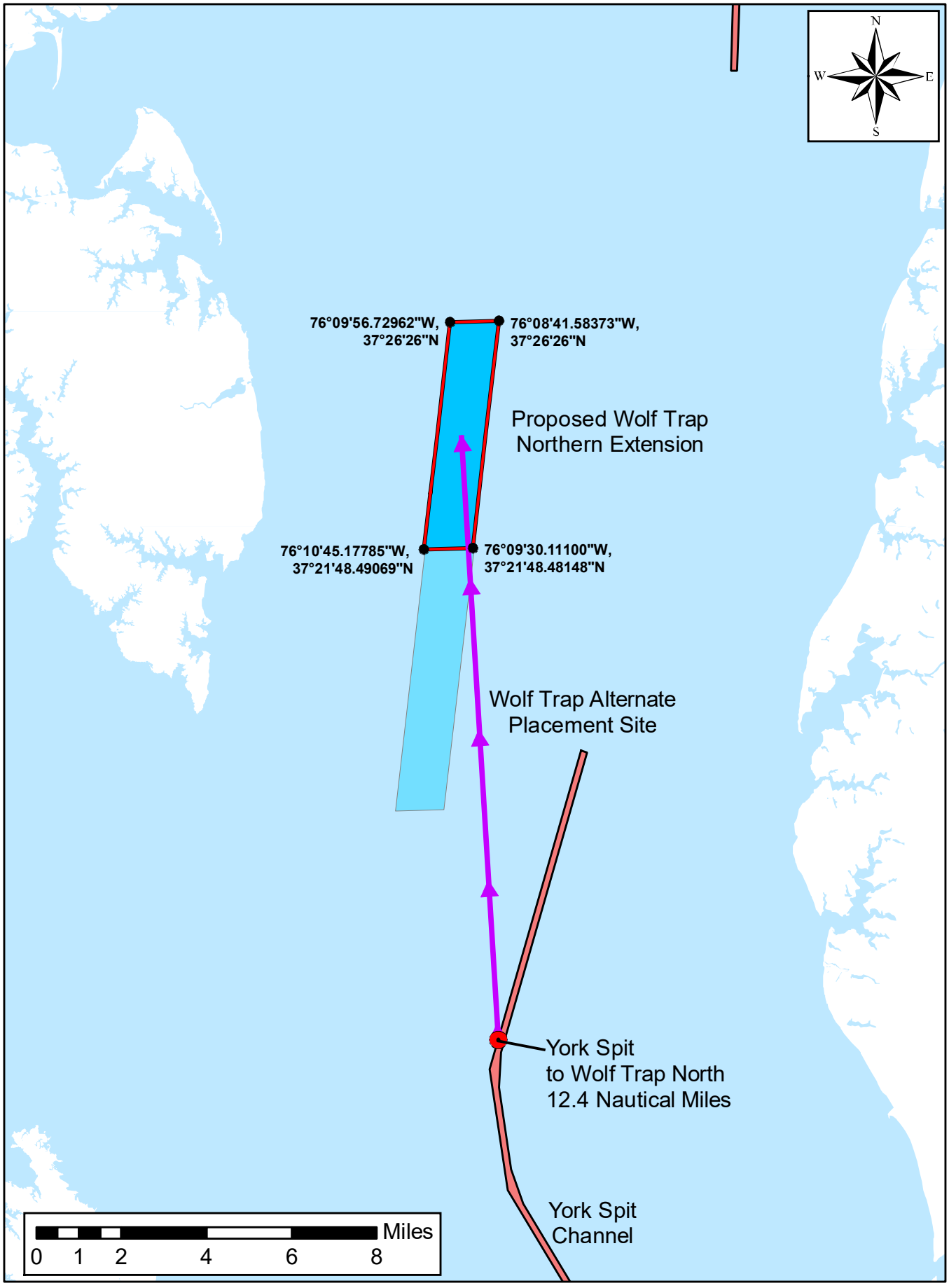
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Northern Extension
76°10'45.17785"W,
37°21'48.49069"N
76°09'30.11100"W,
37°21'48.48148"N
Wolf Trap Alternate
Placement Site
York Spit
to Wolf Trap North
12.4 Nautical Miles
York Spit
Channel
Miles
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From: Brian D Hopper - NOAA Federal
To: May, Andrew J CIV USARMY CENAB (USA)
Cc: May, Kristina K CIV USARMY CENAB (USA)
Subject: Re: [Non-DoD Source] Re: Your suggested revisions to WTAPSNE concurrence letter (UNCLASSIFIED)
Date: Monday, May 6, 2019 11:32:54 AM

Hi Andy and Kristina,

Your emails and letter regarding the Army Corps' proposal to expand the Wolf Trap Alternate Open Water Placement Site requested confirmation that no additional coordination was necessary at this time.

Although shortnose sturgeon, Atlantic sturgeon originating from five listed Distinct Population Segments (DPS), and four species of sea turtles are known to occur in the Chesapeake Bay and its adjacent tributaries and rivers, based on the activities associated with the project, the location of the project, and information you provided in your email and letter, we believe that these species will not be exposed to any direct or indirect effects of the action that have not previously be considered and analyzed. Therefore, we do not believe a re-initiation of consultation in accordance with section 7 of the Endangered Species Act (ESA) is necessary. As such, no further coordination on this activity with the NMFS Protected Resources Division is necessary at this time. Should there be additional changes to the project plans or new information become available that changes the basis for this determination, further coordination should be pursued. Please contact me (410-573-4592 or brian.d.hopper@noaa.gov <mailto:brian.d.hopper@noaa.gov>), should you have any questions regarding these comments.

Regards,
-Brian

From: May, Kristina K CIV USARMY CENAB (US)
To: "VirginiaFieldOffice@fws.gov"
Subject: Self-Certification Letter
Date: Thursday, February 14, 2019 2:13:00 PM
Attachments: Wolf Trap Placement Site Northern Extension Project Review Package.pdf

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Please see the attached self-certification letter and project review package for the Wolf Trap Alternate Open Water Placement Site Northern Extension.

Thanks,

Kristina May
Biologist, Planning Division
USACE, Baltimore District
410-962-6100

From: Virginia Field Office, FW5
To: May, Kristina K CIV USARMY CENAB (US)
Subject: [Non-DoD Source] Out of the Office Re: [EXTERNAL] Self-Certification Letter
Date: Thursday, February 14, 2019 2:25:51 PM

Thank you for submitting your online project package. Due to the government shutdown, we have a backlog of actions to process. As a result, we will review your package within 90 days of receipt, instead of the typical 30 days. If you have submitted an online project review request letter, expect our response within 90 days. If you have submitted an online project review certification letter, you will typically not receive a response from us since the certification letter is our official response. However, if we have additional questions or we do not concur with your determinations, we will contact you during the review period. Thank you for your understanding and patience.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Virginia Field Office
6669 Short Lane
Gloucester, VA 23061

Date: February 14, 2019

Self-Certification Letter

Project Name: Wolf Trap Alternate Open Water Placement Site Northern Extensio

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Virginia Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. . 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. These conclusions resulted in:

- "no effect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- "may affect, not likely to adversely affect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- "may affect, likely to adversely affect" determination for the Northern long-eared bat (*Myotis septentrionalis*) and relying on the findings of the January 5, 2016 Programmatic Biological Opinion for the Final 4(d) Rule on the Northern long-eared bat; and/or
- "no Eagle Act permit required" determinations for eagles.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the "no effect" or "not likely to adversely affect" determinations for proposed and listed species and proposed and designated critical habitat; the "may affect" determination for Northern long-eared bat; and/or the "no Eagle Act permit required" determinations for eagles. Additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for 1 year.

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Virginia is available at our website http://www.fws.gov/northeast/virginiafield/endspecies/project_reviews.html. If you have any questions, please contact Troy Andersen of this office at (804) 824-2428.

Sincerely,

Cindy Schulz
Field Supervisor
Virginia Ecological Services

Enclosures - project review package

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032
http://www.fws.gov/northeast/virginiafield/

In Reply Refer To: February 14, 2019
Consultation Code: 05E2VA00-2019-SLI-2216
Event Code: 05E2VA00-2019-E-05053
Project Name: Wolf Trap Alternate Open Water Placement Site Northern Extension

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
(804) 693-6694

Project Summary

Consultation Code: 05E2VA00-2019-SLI-2216

Event Code: 05E2VA00-2019-E-05053

Project Name: Wolf Trap Alternate Open Water Placement Site Northern Extension

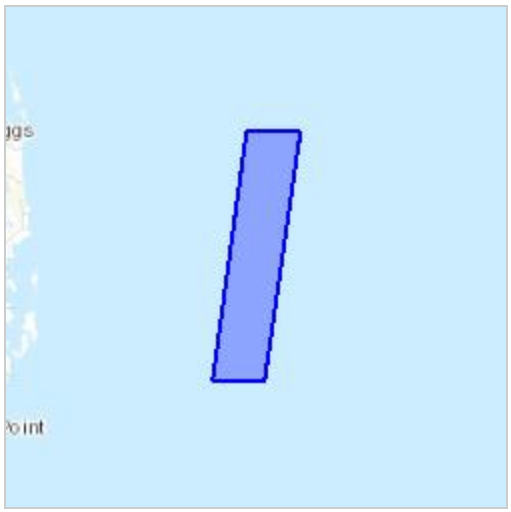
Project Type: FILL

Project Description: The proposed action will extend the existing WTAPS to the north, increasing the size of the placement site by approximately 3,900 acres. The WTAPS northern extension will serve as an open water placement site for dredged material. The purpose of extending the WTAPS is to minimize adverse impacts to overwintering female blue crabs. The deeper, muddy channel in the WTAPS northern extension does not provide suitable habitat for overwintering female blue crabs.

Approximately two million cubic yards of dredged material from the York Spit Channel will be placed into the WTAPS northern extension during the initial placement event that is expected to occur in the fall of 2019. Dredging will be conducted in one dredging cycle that will last for approximately 4 ½ months (approximately 15,000 cubic yards of material dredged per day). After initial placement into the WTAPS northern extension, it is anticipated that approximately 1.5 million cubic yards of dredged material will be placed into the site approximately every 4 years. The in-place volume of the site was calculated to be over 30 million cubic yards, using an allowable water depth of 30 feet, which generally matches the bathymetry surrounding the site and would allow placement to surrounding depths. Open water placement into the WTAPS northern extension will not occur from September 1 through November 14 due to a time-of-year restriction for dredging in the York Spit Channel.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.40200374080091N76.16205394815069W



Counties: Mathews, VA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National W ildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

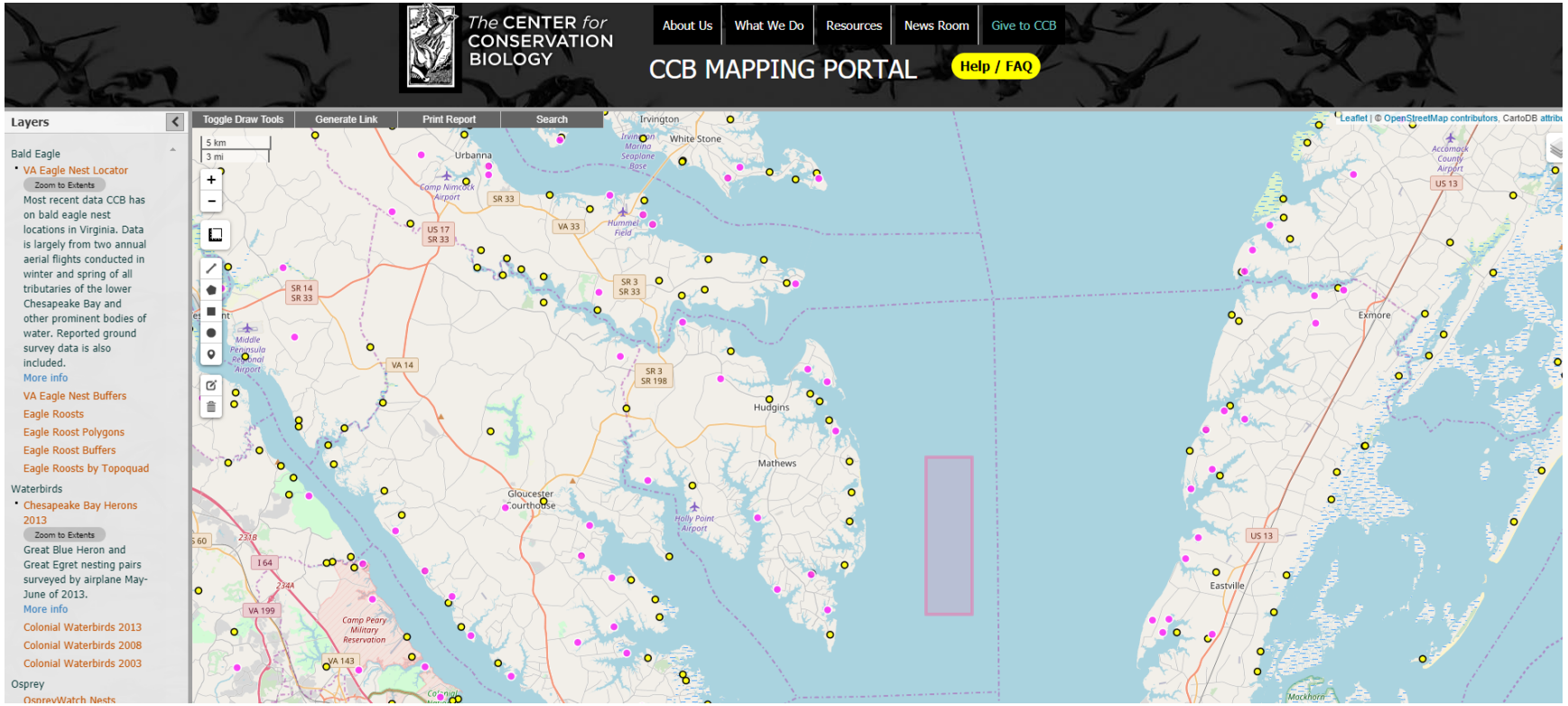
THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Species Conclusions Table

Project Name: Wolf Trap Alternate Open Water Placement Site Northern Extension

Date: February 14, 2019

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Northern Long-eared Bat (*Myotis septentrionalis*)	No suitable habitat present	No effect	This species roosts behind loose pieces of bark, within cavities and crevices of live and dead trees, and occasionally in structures like barns during the summer months. In the winter months, this species hibernates in caves and mines, swarming in surrounding wooded areas in the autumn. In the spring, this species migrates between their summer and winter homes. Because the entire action area is located in tidal waters of the Chesapeake Bay, suitable habitat for the northern long-eared bat is absent in the action area.
Critical habitat	No critical habitat present	No effect	
Bald eagle	Unlikely to disturb nesting bald eagles	No effect	No nests within 660’
Bald eagle	Does not intersect with an eagle concentration area	No effect	


The CENTER for CONSERVATION BIOLOGY
About Us
What We Do
Resources
News Room
Give to CCB
CCB MAPPING PORTAL
Help / FAQ
Layers
Bald Eagle
VA Eagle Nest Locator
Zoom to Extents
Most recent data CCB has on bald eagle nest locations in Virginia. Data is largely from two annual aerial flights conducted in winter and spring of all tributaries of the lower Chesapeake Bay and other prominent bodies of water. Reported ground survey data is also included.
More info
VA Eagle Nest Buffers
Eagle Roosts
Eagle Roost Polygons
Eagle Roost Buffers
Eagle Roosts by Topoquad
Waterbirds
Chesapeake Bay Herons 2013
Zoom to Extents
Great Blue Heron and Great Egret nesting pairs surveyed by airplane May-June of 2013.
More info
Colonial Waterbirds 2013
Colonial Waterbirds 2008
Colonial Waterbirds 2003
Osprey
OspreyWatch Nests
Toggle Draw Tools
Generate Link
Print Report
Search
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White Stone
Urbanna
Gloucester Courthouse
Hudgins
Mathews
Exmore
Eastville
Leaflet | © OpenStreetMap contributors, CartoDB

WOLF TRAP ALTERNATE OPEN WATER PLACEMENT SITE
NORTHERN EXTENSION
FINAL ENVIRONMENTAL ASSESSMENT
OCTOBER 2019

APPENDIX C
ESSENTIAL FISH HABITAT ASSESSMENT

TABLE OF CONTENTS

NOAA comments; EFH assessment prepared for Wolf Trap Alternative Placement Site-NE (WTAPSNE)

3. Potential Project Effects

The anticipated 4-year maintenance cycle to dredge the York Spit Channel and therefore place material overboard using a hopper dredge at the proposed Wolf Trap Alternative Placement Site-Northeast (WTAPSNE) will raise the existing bathymetry (avg. depth -36 ft. MLLW) to an approximate target depth of -30 ft. MLLW following material placement. While the benthic community may recover (1.5 years, Schaffner 2010) between maintenance events, the placement of dredge material in the trough will change the bathymetry, which affects EFH. Therefore, in addition to the direct effect to EFH associated with individual placement events, you should also consider this a cumulative effect over time, as the accumulation of dredge material placed on the bottom will far exceed the natural rate of sedimentation in the trough. In addition, have you considered how projected sea-level rise may affect the storage capacity of the WTAPSNE over the life of the project (yr. 2100)?

Table 1. Summary of Specie with EFH in Project Area

Recent changes to the EFH designations for several species result in them no longer mapped as EFH in the project area. These include the coastal migratory pelagics king and Spanish mackerel (all life stages), and red drum (all life stages). These species should be removed from the table and your assessment. However, there are two species for which you have not accurately identified all designated life stages, including; red hake eggs and larvae and Atlantic herring juveniles. Please add these life stages to your table and discussion in the assessment.

Section 4 EFH Assessment

There are several assertions that you make repeatedly throughout the assessment that I would like to help clarify. The disturbed benthic community will initially be recolonized by opportunistic "weedy" species that typically do not provide the same forage value for managed species as a natural, undisturbed and diverse climax community. This is therefore an effect to EFH. The complete recovery of the benthic community may take up to 1.5 years as you have cited (Schaffner, 2010). I believe this is what you are referring to when using of the term "equilibrium species". Also, please reconsider how you characterize effects to EFH. Burial of an existing benthic community is an adverse effect to EFH that must be acknowledged in your assessment. However, you may determine that although there is an adverse effect, it is not a substantial adverse effect. Similarly, larvae vulnerable to smothering and asphyxiation and the temporal loss of prey spp. are considered adverse effects to EFH. Similarly, you may determine that these effects are not substantial. Please see pg. 18, under impacts to summer flounder as examples of where you should reconsider how you have characterized impacts to EFH for various life stages.

Your discussion of impacts to overwintering female blue crabs is very important. Under Section 5, Cumulative Impacts to EFH, it states that the use of the proposed WTAPSNE would "…not present any substantially different cumulative effects, relative to the "no project" alternative". The "no project" alternative represents the status quo continued use of WTAPS. One of the main issues why VMRC and we have suggested the use of an alternative placement site to the current WTAPS regards the significant impacts to overwintering female blue crabs by material placement. Based on winter dredge surveys conducted by VIMS (Lipcius and Knick, 2016) the use of the proposed WTAPSNE is intended to reduce overall mortality to overwintering female blue crabs, as you correctly identify under Section 6, Federal Agency's Opinion on Project Effects to EFH, 3 (pg. 41) and in Section 7, Mitigation (pg. 42). Please reconsider how impacts are characterized under Section 5.

Under Section 6, Federal Agency's Opinion on Project Effects to EFH there is discussion of sequencing and the rotational placement of dredge material. Can you please provide additional information regarding how the dredging contractor is permitted to place material at the disposal site, e.g. are there only certain "cells" identified for each maintenance event or is the entire area of WTAPSNE available for disposal? In addition, is

material placement tracked in real-time using GPS or other navigational methods to pinpoint its location? Is the dredge material concentrated in a single area or purposefully spread over a larger area? Will a post-construction bathymetric survey be conducted after material placement to determine the new bathymetric contours of WTAPSNE? As stated in the assessment, mechanical spreading of piled dredge material to a uniform “lift” or thickness across the bottom does not appear to be practicable or desirable. Therefore, we are interested in the long-term, management of material placement at the site to ensure that benthic community recovery can be achieved between maintenance dredge placement events.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930-2276

SEP 24 2019

Daniel Bierly, Chief
Civil Project Development Branch
Planning Division
US Army Corps of Engineers
Baltimore District
2 Hopkins Plaza
Baltimore, MD 21201-2930

RE: Wolf Trap Alternative Open Water Placement Site, Northern Extension (WTAPSNE)
Draft Environmental Assessment, Essential Fish Habitat EFH Assessment

Dear Mr. Bierly:

We have reviewed the essential fish habitat (EFH) assessment, Appendix C of the Wolf Trap Alternative Open Water Placement Site Northern Extension (WTAPSNE) Draft Environmental Assessment (DEA), prepared for the proposed 3,900 acre expansion of the existing Wolf Trap Alternative Open Water Placement Site (WTAPS) to the North. The WTAPSNE is proposed to accept the overboard placement of material dredged from the current maintenance event for York Spit Channel, located in the southern portion of the Chesapeake Bay.

Project Background

The WTAPS was originally authorized by the 1981 agreement between Maryland and Virginia to accept dredged material from the Baltimore Harbor Channel within Virginia's portion of the Chesapeake Bay. Over the past several years, the Baltimore District Corps has proposed additional use of WTAPS for other federal navigation channel maintenance dredging projects including Wormley Creek and York Spit channels. Concerns regarding the impacts to EFH including benthic and prey species, specifically blue crab (*Callinectes sapidus*), from the continued use of WTAPS has been expressed repeatedly in our previous comments to your office on these projects. We have also expressed our continued desire for a less environmentally damaging placement alternative. The proposed extension of WTAPS to the North, would move the overboard placement of dredged sediment to an adjacent deeper area less favorable to overwintering female blue crabs. Although the overboard placement of dredge material in the Northern extension area is anticipated to lower overwintering female blue crab mortality, our environmental preference for future material placement is the beneficial use of dredge material for shoreline protection or the placement of unsuitable dredge material in uplands. We maintain that the continued investigation of these alternatives by your office is warranted to provide the least damaging placement alternative to EFH.

Magnuson Stevens Fishery Conservation and Management Act (MSA)

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires federal agencies such as the Corps to consult with us on any action or proposed action authorized, funded, or undertaken by the agency that may adversely affect EFH identified under the MSA. The EFH regulations, 50 CFR Section 600.920, outline that consultation procedure.

EFH is defined by the MSA as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". The designation and conservation of EFH seeks to minimize adverse effects on habitat caused by fishing and non-fishing activities. York Spit Channel and WTAPSNE have been designated as EFH for various life stages of fourteen (14) federally managed species including: Atlantic butterfish (*Peprilus triacanthus*), Atlantic sea herring (*Clupea harengus*), black sea bass (*Centopristis striata*) bluefish, (*Pomatomus saltatrix*), clearnose skate (*Raja eglanteria*), little skate (*Leucoraja erinacea*), winter skate (*Leucoraja ocellata*), red hake (*Urophycis chuss*), summer flounder (*Paralichthys dentatus*), windowpane flounder (*Scopthalmus aquosus*), scup (*Stenotomus chrysops*), sandbar shark (*Carcharhinus plumbeus*), Atlantic sharpnose shark (*Rhizoprionodon terraenovae)*, and sand tiger shark (*Carcharias taurus*).

The current maintenance cycle includes the placement of approximately 1.5 million cubic yards of dredge material from the York Spit Channel at the WTAPSNE. Direct impacts resulting from the project include the removal of the existing benthic community (York Spit Channel), burial of the existing benthic community (WTAPSNE), mortality to eggs, larvae and non-motile species or life stages and water quality impacts including increased turbidity at both the dredge and placements locations. Each of these direct impacts adversely affects EFH.

EFH Conservation Recommendations

Pursuant to Section 305(b)(4)(A) of the MSA, we recommend you adopt the following EFH conservation recommendation to minimize impacts to EFH and other aquatic resources:

1. Material dredged from York Spit Channel during the 2019 maintenance event should be placed in the deeper water of Cells 4 and 5 within WTAPSNE as these deeper cells support fewer overwintering blue crabs and experience more frequent hypoxic conditions than shallower water.
2. Actively identify new projects for the beneficial use of dredge material or upland placement for future maintenance events. The future use of WTAPS or WTAPSNE beyond the current maintenance event will have a cumulative adverse effect on EFH. The cumulative impact to EFH over the life of the project is not desirable or sustainable.

Please note that Section 305(b)(4)(B) of the MSA requires you to provide a written response to us within 30 days after receiving our EFH conservation recommendations. The response must be provided to us at least 10 days before the signing of the Finding of No Significant Impact (FONSI) or a Record of Decision, to allow time for dispute resolution if necessary. The response must include a description of measures proposed for avoiding, mitigating, or offsetting the impact of the activity on EFH, as required by section 305(b)(4)(B) of the MSA and 50 CFR

600.920(j). In the case of a response that is inconsistent with our conservation recommendations, you must explain your reasons for not following the recommendations, including the scientific justification for any disagreements with us over the anticipated effects of the action or the measures needed to avoid, minimize, mitigate, or offset such effects.

Please also note that a distinct and further EFH consultation must be initiated pursuant to 50 CFR 600.920(j) if new information becomes available or if the project is revised in such a manner that affects the basis of our determination above.

This EFH determination does not address threatened and endangered species under the purview of NOAA Fisheries Service. Therefore, please contact Mr. Brian Hopper, NOAA Protected Resources Division (brian.d.hopper@noaa.gov, 410-573-4592) to discuss your project regarding marine mammals and federally listed sea turtles, shortnose and Atlantic sturgeon.

We look forward to your response to our EFH conservation recommendation. If you have any questions please do not hesitate to contact David O'Brien in our Gloucester Point, VA field office at 804-684-7828 (david.l.obrien@noaa.gov).

Sincerely,

Louis A. Chiarella
Assistant Regional Administrator
for Habitat Conservation

cc: Kristina May, NAB Corps
Randy Owen, VMRC
Lyle Varnell, VIMS
Brian Hopper, PRD
L. Havel -ASMFC
C. Moore – MAFMC
T. Nies - NEFMC

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

October 21, 2019

Mr. Lou A. Chiarella
Assistant Regional Administrator for Habitat Conservation
Greater Atlantic Regional Fisheries Office
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
55 Great Republic Drive
Gloucester, MA 01930-2276

Dear Mr. Chiarella,

The U.S. Army Corps of Engineers, Baltimore District (USACE), has reviewed the Essential Fish Habitat (EFH) conservation recommendations provided by your office on 24 September 2019, to minimize potential effects to EFH and other aquatic resources from placement of dredged material from the York Spit Channel into the Wolf Trap Alternate Open Water Placement Site Northern Extension (WTAPSNE), as proposed by the Virginia Marine Resources Commission (VMRC).

Pursuant to Section 305(b)(4)(A) of the Magnuson-Stevens Fishery Conservation and Management Act, USACE provides the following responses to the EFH conservation recommendations:

EFH Conservation Recommendation 1:

Material dredged from the York Spit Channel during the 2019 maintenance event should be placed in the deeper water of Cells 4 and 5 within WTAPSNE as these deeper cells support fewer overwintering blue crabs and experience more frequent hypoxic conditions than shallower water.

> **USACE Response:** USACE plans to place dredged material into cell 6, the southernmost cell in WTAPSNE, for the fall/winter 2019/2020 placement event. USACE investigated the use of cells 4 and 5 for the placement of dredged material, and found that placement in cell 6 for the upcoming dredge cycle was the most feasible option. An archeological survey conducted in the spring of 2019 for the entire proposed northern expansion site identified a historic shipwreck immediately adjacent to cell 5. In order to avoid impacts to the shipwreck, dredged material will not be placed in cell 5 until a more comprehensive archeological survey of the shipwreck can be conducted. Additionally, using cells 4 and 5 for placement would further increase the transit time for the hopper dredge, adding approximately two weeks to the project duration. This would result in an increase in cost and a higher risk of impact to

endangered and threatened sea turtles due to dredging extending into times of year when sea turtles are more likely to be present.

Accordingly, USACE has obtained concurrence from the Virginia Department of Environmental Quality and VMRC, regarding the use of cell 6 for the upcoming placement event.

EFH Conservation Recommendation 2:

Actively identify new projects for the beneficial use of dredged material or upland placement for future maintenance events. The future use of the Wolf Trap Alternate Open Water Placement Site (WTAPS) or WTAPSNE beyond the current maintenance event will have a cumulative adverse effect on EFH. The cumulative impact to EFH over the life of the project is not desirable or sustainable.

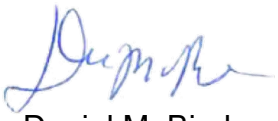
USACE Response: USACE is required to plan and implement its maintenance dredging program in compliance with a federal standard for all USACE dredging projects (*See* 33 C.F.R. Pts. 336-337). The federal standard is defined as the placement plan that is feasible from an engineering perspective, and is the least costly, environmentally acceptable option. Currently, the federal standard for the York Spit Channel is WTAPS.

USACE has initiated the process to examine placement needs for the Baltimore Harbor and Channels Project's Virginia channels, and will determine whether it is necessary to update the 2005 Baltimore Harbor and Channels (Maryland and Virginia) Dredged Material Management Plan (DMMP) and Environmental Impact Statement for the Virginia channels. The DMMP framework is a consistent and logical procedure by which dredged material management alternatives can be identified, evaluated, screened, and recommended so that dredged material placement operations are conducted in a timely, environmentally sensitive, and cost-effective manner. At this time, however, the designation of WTAPSNE as the placement site for the 2019/2020 placement event is consistent with a 1981 agreement between the State of Maryland and the Commonwealth of Virginia. This agreement allows the Commonwealth to "designate alternative placement sites in the Bay of similar costs, capacities and convenience as the agreed sites." While recognizing that some placement options will exceed the federal standard, USACE remains open to consideration of alternative placement sites that meet these parameters, as exemplified by the shift to WTAPS from the original Wolf Trap Primary Placement Site, located about 1 mile east of the northeast corner of WTAPS, in 1987. Further, preferred placement locations that exceed the federal standard can usually be accommodated to the maximum extent practicable as long as a non-federal entity agrees to pay any incremental cost over the cost of implementing the federal standard.

Any consideration of future placement options in a DMMP process will include opportunities for the public, stakeholders, and agencies to provide their ideas and concerns for material placement during a scoping period and other opportunities to comment. Additional study and design may be necessary at the conclusion of the DMMP process in order to implement the recommended placement plan.

If you have questions or would like to discuss our responses, please contact Ms. Kristina May by email at kristina.k.may@usace.army.mil or by phone at (410) 962-6100.

Sincerely,



Daniel M. Bierly
Chief, Civil Project Development Branch
Planning Division

cc:
David O' Brien, NMFS Gloucester Point, VA field office

WOLF TRAP ALTERNATE OPEN WATER PLACEMENT SITE
NORTHERN EXTENSION
ESSENTIAL FISH HABITAT IMPACT ASSESSMENT

U.S. Army Corps of Engineers, Baltimore District
Final – October 2019

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WOLF TRAP ALTERNATE OPEN WATER PLACEMENT SITE
NORTHERN EXTENSION
ESSENTIAL FISH HABITAT IMPACT ASSESSMENT

U.S. Army Corps of Engineers, Baltimore District
Final – October 2019

1 PROJECT DESCRIPTION

The Wolf Trap Alternate Open Water Placement Site (WTAPS)[1] is currently used as a placement site for sediments dredged during routine maintenance dredging of the York Spit Channel. The proposed action would establish an extension of the existing WTAPS site to the north, increasing the size of the placement site by approximately 3,900 acres, and is herein referred to as the "WTAPS Northern Extension" (WTAPSNE, Figure 1). The WTAPSNE would serve as an open water placement site for dredged material primarily from the York Spit Channel, but may also be used as a placement site for other dredging projects in the lower Chesapeake Bay pending evaluation. The purpose of the proposed action is to provide a cost-effective, environmentally-acceptable placement site for dredged material in response to a recommendation by agencies of the Commonwealth of Virginia, to minimize adverse impacts to blue crab. The WTAPSNE has been recommended by agencies of the Commonwealth of Virginia as an alternative to the currently-used WTAPS due to the potential for a high abundance of female blue crab to overwinter in the southern portion of WTAPS. Blue crab winter dredge survey data collected by the Virginia Institute of Marine Science (VIMS) between 2009 and 2016 indicate that WTAPSNE provides less suitable habitat for overwintering female blue crab than WTAPS (Lipcius & Knick, 2016). Placement of dredged material into WTAPS while female crabs are not overwintering (generally from early April to mid-November) is not feasible due to higher costs to dredge in the summer and potential adverse impacts to sea turtles.

For the purposes of this assessment, the "no action" alternative would be the continued *status quo* use of the WTAPS site to receive materials dredged to maintain the York Spit Channel. That maintenance dredging typically occurs once every four years and generates an average of 1.5 million cubic yards (mcy) of material per cycle. To minimize adverse impacts to sea turtles, USACE makes every effort to avoid dredging in the York Spit Channel does not occur from September 1 through November 14, and dredging typically occurs during the winter and early spring, subject to contractor availability. The proposed action does not include any changes to the historic maintenance dredging activities. The only change to the project is the proposed use of the placement site extension. Environmental effects resulting from maintenance dredging of the York Spit Channel are discussed in the 1981 General Design Memorandum (GDM) and Environmental Impact Statement (EIS) (USACE, 1981) and in the 1987 Supplemental Information Report #2 to the 1981 GDM and EIS (USACE, 1987).

The capacity of WTAPSNE is over 30 mcy, which assumes placement of dredged material within the site boundaries up to an approximate depth of -30 feet mean lower low water (MLLW).

[1] As a point of clarification, the *existing* dredged material placement, WTAPS, is termed "alternate" because it superseded a historic placement site further to the east called the Wolf Trap Primary Placement Site. The Wolf Trap Primary Placement Site is shown on NOAA navigation charts, but has been inactive for decades.

Approximately 2.6 million cubic yards (mcy) of dredged material from operation and maintenance (O&M) of the York Spit Channel would be placed into quadrant 1 of cell NE-6 in the WTAPSNE (Figure 2) during the initial placement event that is expected to occur in late fall of 2019. After initial placement into the WTAPSNE, it is anticipated that approximately 1.5 mcy of dredged material from the York Spit Channel would be placed into the site approximately every 4 years or until another alternate placement site or method is identified, approved and implemented. Each dredging cycle and associated placement activities (mobilization to demobilization of the dredging operation) lasts for approximately 4½ months. Maintenance dredging would be allowed 24 hours per day and 7 days per week. However, based on previous maintenance dredging, it is expected that approximately 15,000 cubic yards would be dredged per day, resulting in 2 to 5 loads of dredged material being placed at WTAPSNE per day. The USACE would make every effort to avoid placement into the WTAPSNE during the dredge closure period for sea turtles, from September 1 through November 14.

Dredged material would be placed into WTAPSNE using a hopper dredge because they are better suited than other types of dredge vessels for maintaining the York Spit Channel. The volume and frequency of dredged material placement events during maintenance dredging is a function of the rate of dredging production, the number of hopper vessels in use, and their size, speed and capacity. Hopper dredge capacity is expected to range from 3,600 to 8,600 cy depending on the dredge contractor used. Operation of these vessels, including movement to and from the WTAPSNE site, is not expected to be a significant source of turbidity due to the depth of the Chesapeake Bay in these areas, relative to vessel draft. Depending on the amount of material dredged from the York Spit Channel during one maintenance dredging cycle, the thickness of the material that would be deposited in one cycle would range from 2 inches to 2 ft thick.

A Dredged Material Management Plan (DMMP) update process for the Virginia Channels will be initiated in 2020. The DMMP framework is a consistent and logical procedure by which dredged material management alternatives can be identified, evaluated, screened, and recommended so that dredged material placement operations are conducted in a timely, environmentally sensitive, and cost-effective manner. Any consideration of future placement options will include opportunities for the public, stakeholders, and agencies to provide their ideas and concerns for material placement during a scoping period and opportunities to comment on the draft management plan. Additional study and design may be necessary at the conclusion of the DMMP process in order to implement the recommended placement plan.

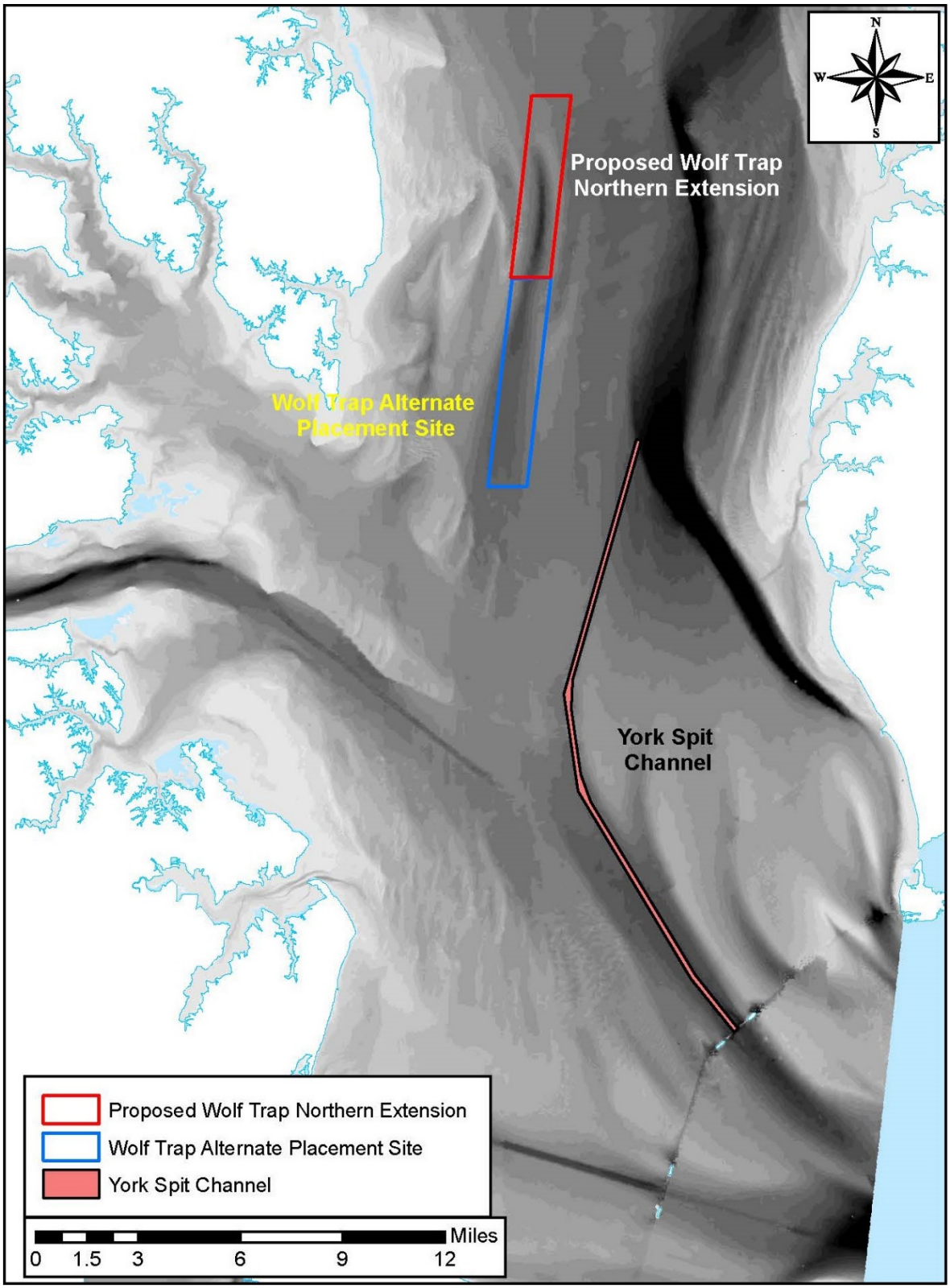

Figure 1. Map of the Wolf Trap Alternate Open Water Placement Site Northern Extension

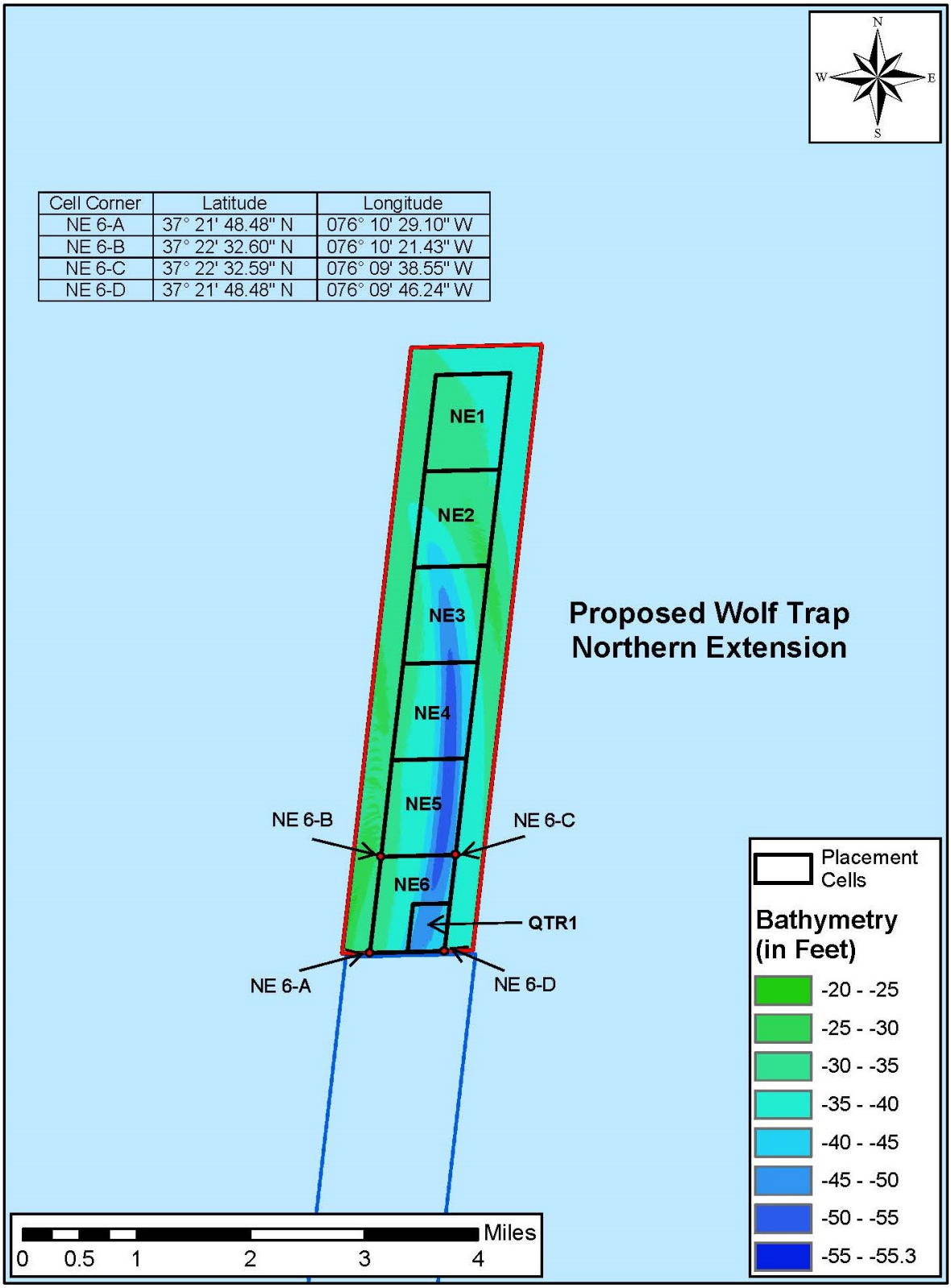

Figure 2. Placement Cells of the Proposed Wolf Trap Alternate Open Water Placement Site Northern Extension.

2 DESCRIPTION OF PROJECT AREA

The proposed WTAPSNE project encompasses a rectangular area measuring roughly 6,060 by 28,340 feet (3,900 acres), extending north-northeast from the northern end of the existing WTAPS site. Based on bathymetric surveys conducted by USACE Baltimore District in April, July and August 2017, water depths in the WTAPSNE site range from 23 feet to 55 feet mean lower low water (MLLW), with an average depth of 36 feet MLLW (Figure 3). The typical tidal range in the action area is approximately 2.85 feet, although this varies significantly with time of the month (spring and neap tides) as well as storm activity, which can create significant storm surges well beyond the normal tidal range. Tides are (semi)diurnal in the Chesapeake Bay, with two high and low tides per day (NMFS Biological Opinion, 2018).

The WTAPSNE site is characterized as a flat, relatively featureless plain (termed as bay-stem plains by Wright et al., 1987) with a deep, natural channel or relict channel (termed bay-stem channel by Wright et al., 1987) running roughly north-to-south through the site. Both bottom types are typically composed of mud or fine sand with silt and clay filling interstices, and experience relatively strong near-bottom tidal currents. Bay stem plains are characterized by high densities of tube dwellers including the annelid, *Euclymene zonalis*, the anemone, *Ceriantheopsis sp.* and the amphipod crustacean, *Ampelisca abdita*. The tubes of *Chaetopterus variopedatus* extend 2 to 3 centimeters into the water column. Sediment reworking by *Euclymene zonalis*, a "conveyor-belt" species, produces a hummocky bed surface. Bay-stem channels generally share similar roughness features (Wright et al., 1987), although benthic communities may differ. The trough at WTAPSNE is somewhat bathymetrically isolated by shallower depths at either end, which may limit near-bottom water exchange, and lead to greater seasonal oxygen stress. Virginia Marine Resources Commission (VMRC) identifies no submerged aquatic vegetation (SAV) or shellfish beds located within the footprint or adjacent to the WTAPSNE (VMRC, 2019). SAV is typically limited to depths of less than 2 m, and oysters to depths less than 8 m in the Bay (VIMS, 2019 Coastal). The area is of significant seasonal importance to female blue crab (see blue crab discussion below).

Water temperatures in the Chesapeake Bay within the project area fluctuate widely throughout the year, ranging from 1° Celsius (C) in the winter to 29°C in the summer. Changes in water temperature influence where SAV can grow, and when fish and crab feed, reproduce and migrate (CBP, 2019). Salinity in the Chesapeake Bay varies from season to season and year to year depending largely on the amount of freshwater flowing into the bay. Generally, salinity in the lower Chesapeake Bay is characterized as polyhaline (between 18 and 30 parts per thousand (ppt)) (The Center for Conservation Biology, 2010). Long-term water quality data for the WTAPSNE site was obtained from the VECOS website (VIMS, 2019). Data were used for monitoring station "CB6.3 – Lower West Central Chesapeake Bay", which is adjacent to the WTAPSNE site. Normal surface salinities within the WTAPSNE site vary from 10 to 24 ppt, with an average of 17.9 ppt. Normal bottom salinities vary from 14 to 28 ppt, with an average of 22.2 ppt.

The project area is within an open bay segment "CB6PH", which has been identified by the Virginia Department of Environmental Quality (VADEQ) as meeting state water quality standards for dissolved oxygen (30-day), during the summer months, but lacks sufficient information for shorter periods, and is therefore remains classified as "impaired", as it was during the 2016

Integrated Report. In the 2016 Integrated Report, VADEQ listed the area as not impaired for benthic life (VADEQ, 2018). The proposed placement area does, however, lie within about 16 km of waters that have been shown to experience periodic hypoxia (Dauer et al., 1992), and likely remains susceptible to occasional hypoxic conditions at depth during years with high water temperatures.

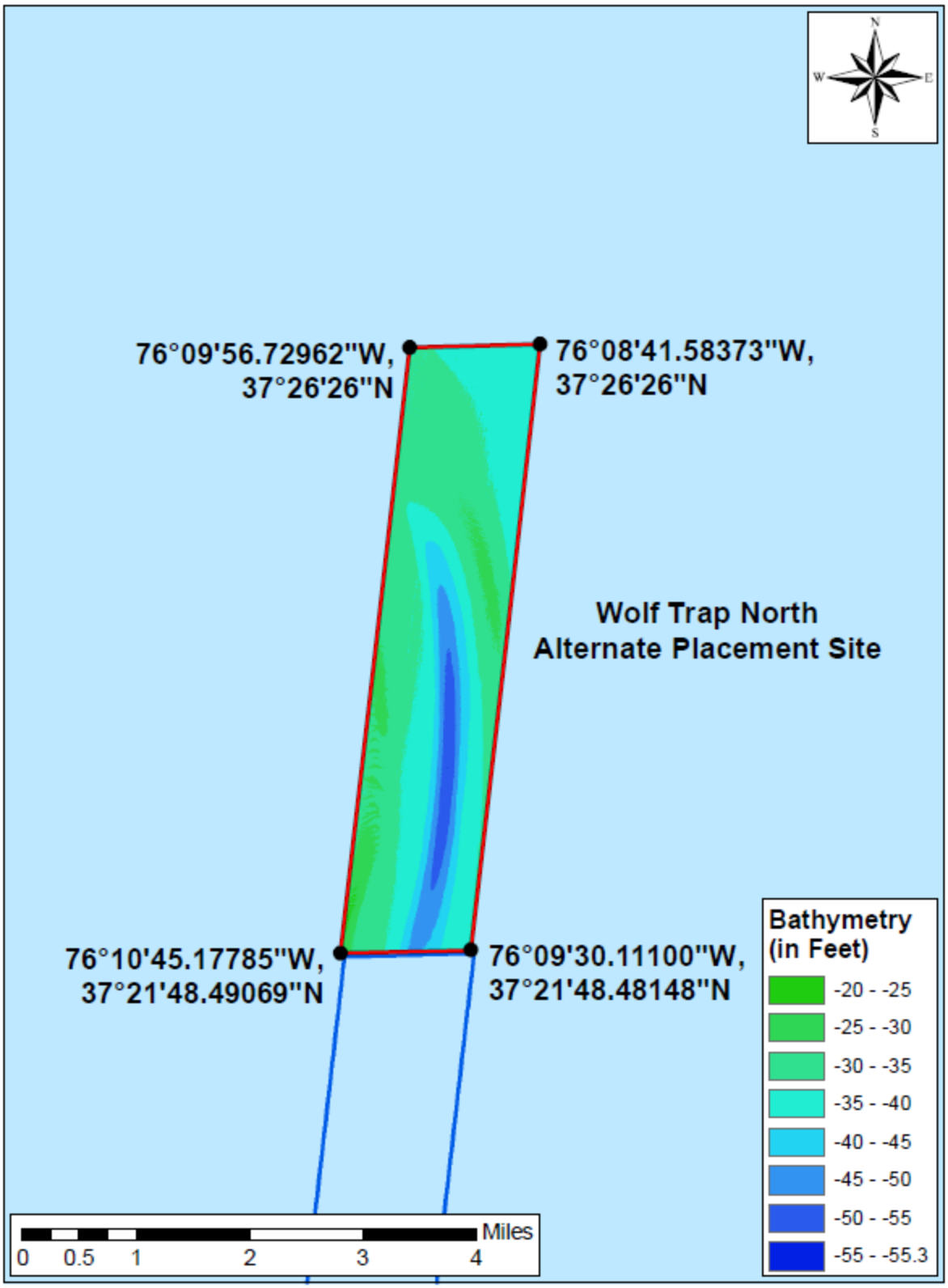

Figure 3. Bathymetry (in feet) in the Wolf Trap Alternate Open Water Placement Site

3 POTENTIAL PROJECT EFFECTS

Turbidity and Water Quality Effects

Temporary water quality effects to managed fish species and their EFH due to project activities would most likely be limited to short-term increases in turbidity levels and suspended solids in the dredged material placement areas and downcurrent areas.

Direct effects from sedimentation and turbidity would result in deposition of suspended sediments on demersal eggs, larvae, immobile prey species, etc. Extremely elevated levels of turbidity may cause physical asphyxiation of aquatic organisms and cause localized, acute oxygen stress due to chemical oxygen demand. These factors would primarily affect eggs, larvae and small prey species that lack the physical swimming ability to evade the concentrated turbidity plume. Such effects would be spatially confined to only a very small portion of the turbidity plume and would persist less than one hour after a placement event. Water column turbidity may induce avoidance behavior in some species and may interfere with species' ability to hunt prey or avoid predators. (https://www.greateratlantic.fisheries.noaa.gov/protected/section7/guidance/consultation/turbidityablenew.html).

During open water placement activities via hopper dredge, suspended sediment levels may be as high as 500 milligrams/liter (mg/L) within 250 feet of the dredge, decreasing to background levels (i.e., 15 to 100 mg/L depending on location and water conditions) within 1,000 to 6,500 feet of the dredge. Total suspended solids (TSS) concentrations near the center of the plume created by the placement of dredged material have been observed to reach near background levels in 35 to 45 minutes (NOAA Turbidity and Total Suspended Sediment Effects Table, 2017). The published field data support the theoretical description of the transport phases in typical open-water disposal operations. The short term effects resulting from suspended sediment are confined to a well-defined layer above the bottom equal to 15 to 20 percent of the total water depth (Truitt, 1988).

Effects on the Benthic Community in the Project Area

Environmental monitoring was performed to assess the potential effects of late-winter/early-spring 2015 placement of dredged material at the existing Wolf Trap Alternate Placement Site (WTAPS) on blue crab, finfish, and benthic macrofauna, which are prey for blue crab and bottom-feeding fish. Monitoring included bottom trawl and benthic macrofaunal sampling conducted before (November 2014), immediately after (June 2015), and five months after (November 2015) dredged material placement in Cell-1 and Cell-3 within the WTAPS. Identical monitoring was also conducted in Cell-6, which did not receive dredged material in 2015. The findings indicated that the sediment composition in the site (approximately 41 percent silt, 51 percent clays, and 8 percent sands) varied spatially, but did not change significantly between the pre- and post-placement time periods (USACE Norfolk District, 2016).

Benthic macrofaunal biomass and taxonomic richness did not differ between the placement site versus reference areas or pre- versus post-placement time periods to a degree that adversely affected the environment. Spatial and temporal differences in benthic macrofaunal assemblages tended to reflect higher faunal abundances at the placement areas and higher abundances in the

post-placement time period. Taxa included opportunistic (e.g., Spionid polychaetes) and equilibrium (e.g., Nephytid polychaetes) species. Abundances of tube building polychaetes (Maldanidae and Chaetopteridae) varied spatially, but did not differ significantly between pre- and post-placement periods. Mature female blue crab were most abundant with increasing proximity to the Bay mouth in both the winter dredge survey (January 2015) and fall trawl surveys (November 2014 and 2015). Mature blue crab catch-per-unit-effort was higher during the post-placement time period in both placement cells and did not differ between placement references areas. Fish assemblages did not differ between the pre- and post-placement time periods and placement versus reference areas in a pattern consistent with a detrimental effect from dredged material placement. Significant differences in fish assemblage composition typically resulted from high catches of a schooling species in an area during one sampling event (USACE Norfolk District, 2016).

It is also expected that the benthic community would recolonize within approximately one season, or at most 1.5 years (Schaffner, 2010). It is expected that the project would have minimal effect on the benthic communities. Many organisms would be able to burrow back to the surface, and recolonization would occur due to immigration from adjacent and nearby locations. Materials from the York Spit channels consist primarily of silt, with significant amounts of clay, and minor amounts of sand, comparable to sediments found at the project site, and blue crab would be capable of burrowing within the substrate.

During the anticipated life of the project, successive dredged material placement events will raise the average bottom elevation within the project area from the current average of -36 feet MLLW, up to a maximum of -30 feet MLLW. The actual magnitude of this change over time would be subject to rates of sedimentation within the York Spit Channel, as well as prevailing currents, major storms and other factors which affect the movement of sediments in the area. The relative change in depth would be greatest within the deep "trough" portion of the current WTAPSNE site. The cumulative effects of this bathymetric change are not expected to constitute a substantially adverse effect on benthic communities or EFH. These depth changes may cause minor changes in the relative abundances of benthic taxa, but are not expected to fundamentally alter the benthic community type. The expected average depth changes would not cross any "threshold" depths that would cause such areas to cease to provide EFH functions. Given that the deepest waters in the general vicinity of the project area are subject to seasonal hypoxia, it is possible that decreasing these depths, particularly within the trough, may reduce the frequency and severity of summer oxygen stress experienced by benthic organisms in those areas. The estimated decrease in average depths is based on current bathymetry and expected rates of dredging, and does not consider relative sea level changes. Recent climate models predict a relative rise in sea levels within the region which, regardless of magnitude, would have the effect at least partially offsetting the changes in depth caused by the project.

Species with Potential EFH in Project Area

A summary of those species for which potential EFH has been indicated within the project area are shown in the table below. These designations are based on the NOAA Estuarine Living Marine Resource (ELMR) program, the EFH habitat mapper tool, and NOAA EFH source documents. Based on salinity information presented in Section 2 of this document, the project area is generally

in the mixed/brackish ("M") zone, but occasionally rises past the 25 ppt threshold into seawater ("S") salinity zone. Whether or not the species and their life history stages identified below actually do have EFH in the project area is assessed in the subsequent species-specific assessments.

Table 1. Summary of Federally-Managed Species with EFH in the Project Vicinity

Species	Life Stage			
	Eggs	**Larvae**	**Juveniles**	**Adults**
Red hake (*Urophycis chuss*)			S	S
Windowpane flounder (*Scopthalmus aquosus*)			M,S	M,S
Summer flounder (*Paralicthys dentatus*)		M,S	M,S	M,S
Bluefish (*Pomatomus saltatrix*)			M,S	M,S
Atlantic butterfish (*Peprilus triacanthus*)	M,S	M,S	M,S	M,S
Scup (*Stenotomus chrysops*)			S	S
Black sea bass (*Centropristus striata*)			M,S	M,S
Atlantic sea herring *(Clupea harengus)*				S
Sand tiger shark *(Carcharias taurus)*[*]			S	S
Sandbar shark *(Carcharhimus plumbeus*)			S	S
Dusky shark *(Carcharhinus obscurus)*[*]				S
Clearnose skate (*Raja eglanteria*)			M,S	M,S
Little skate (*Leucoraja erinacea*)			M,S	M,S
Winter skate (*Leucoraja ocellata*)			M,S	M,S

S = Includes the seawater salinity zone (salinity ≥ 25.0‰).
M = Includes the mixing water/brackish salinity zone (0.5‰ < salinity < 25.0‰).
X = EFH has been designated for a given species and life stage.

[*] The project area is not mapped as potential EFH for the sand tiger or dusky sharks, however, both species are included in this assessment because they are NOAA Species of Concern, and have potential EFH mapped in the lower Chesapeake Bay, a few miles south of the project location

4 EFH ASSESSMENT

As shown in the table above, 12 species have been identified as having EFH in the project area, including the sandbar shark, which has Habitat Areas of Particular Concern[2] (HAPC) within the project area. The sand tiger and dusky sharks *do not* have EFH within the project area, but are Species of Concern with potential EFH in the lower Chesapeake Bay, in the vicinity of the project, and so have been included in this assessment. The EFH assessments for the 14 identified species are based on the potential direct, indirect and cumulative impacts resulting from both short and long-term changes to aquatic habitats as a result of the proposed project described above. Considerations of effects on prey of these EFH species are provided in this document. Analysis of effect on other important species are provided in the separate "Other Trust Resources" subsection of this EA.

4.1 BONY FISH

RED HAKE (*Urophycis chuss*)

Red hake are a cold-temperate coastal species that undertake inshore-offshore seasonal migrations to remain in their preferred temperature range (5 to 12°C). From late spring until early summer, red hake move from deep to shallow waters. As waters warm during the summer, red hake migrate to deeper water offshore and stay offshore until the following spring (Murdy and Musick, 2013). During warmer months, red hake are commonly found in depths < 100 m (< 328 ft); during colder months, they are commonly found in depths > 100 m (> 328 ft) (Steele et al., 1999). During Virginia Institute of Marine Science (VIMS) trawl surveys conducted between 1988 and 1999 in the Virginia waters of the Chesapeake Bay, an overwhelming proportion of red hake occurred in the deeper channel waters of the Chesapeake Bay Mainstem (VIMS, 2002).

Juveniles
EFH for juvenile red hake includes intertidal and sub-tidal benthic habitats throughout the region on mud and sand substrates, to a maximum depth of 80 meters, including bays and estuaries. Bottom habitats providing shelter are essential for juvenile red hake, including: mud substrates with biogenic depressions, substrates providing biogenic complexity (e.g., eelgrass, macroalgae, shells, anemone and polychaete tubes), and artificial reefs. Newly settled juveniles occur in depressions on the open seabed. Older juveniles are commonly associated with shelter or structure and often inside live bivalves (NEFMC and NMFS, 2017).

Juvenile red hake remain pelagic until they reach 25-30 millimeters (mm) total length (TL) in about two months. They gradually descend to the bottom at a size of about 35-40 mm TL between September and December. Shelter is a critical habitat requirement for juvenile red hake. Newly settled juveniles occur in depressions on the open seabed. Older juveniles commonly associate

[2] EFH that is judged to be particularly important to the long-term productivity of populations of one or more managed species, or to be particularly vulnerable to degradation may also be identified by Fisheries Management Councils and NOAA Fisheries as HAPC. Areas of EFH considered HAPC must be proven to be important to the ecological function provided by the habitat for the managed species. The extent to which the habitat is sensitive to human-induced environmental degradation, including development activities that stress the habitat and the rarity of the habitat are considered.

with shelter or structure. They leave shelter at night and commonly prey on small benthic and pelagic crustaceans, including shrimp, crab, mysids, euphausiids, and amphipods. Juveniles maintain this association until they are about 10 to 13 centimeters (cm) TL (Steimle et al., 1999). Juvenile red hake are regular visitors to the lower Chesapeake Bay in late winter and spring, but less so in the summer. They can tolerate salinities as low as 21 ppt and occasionally move into the middle Bay, extending as far north as the Patuxent River (Murdy and Musick, 2013). Juvenile red hake are generally found in water temperatures < 16°C, water depths < 100 m (328 ft), and salinities ranging from 31 to 33 ppt (https://www.greateratlantic.fisheries.noaa.gov/hcd/red-hake.pdf).

Adults

EFH for the adult red hake includes benthic habitats in the Gulf of Maine and the outer continental shelf and slope in depths of 50 – 750 meters and as shallow as 20 meters in a number of inshore estuaries and embayments as far south as Chesapeake Bay. Shell beds, soft sediments (mud and sand), and artificial reefs provide essential habitats for adult red hake. They are usually found in depressions in softer sediments or in shell beds and not on open sandy bottom. In the Gulf of Maine, they are much less common on gravel or hard bottom, but they are reported to be abundant on hard bottoms in temperate reef areas of Maryland and northern Virginia (NEFMC and NMFS, 2017).

Adults are usually found in depressions in soft sediments, but can also be found in the water column (Steimle et al., 1999). Adult red hake generally are found in water temperatures < 12°C, water depths ranging from 10 to 130 m (33 to 427 ft), and salinities ranging from 33 to 34 ppt (https://www.greateratlantic.fisheries.noaa.gov/hcd/red-hake.pdf). Adult red hake, like juveniles, prey upon crustaceans, but also consume a variety of demersal and pelagic fish and squid (Steimle et al., 1999).

Potential Impacts to Red Hake EFH

The project area meets the requirements for juvenile red hake EFH identified above, particularly bottom waters with high salinity. The site does not meet the requirements for adult red hake EFH, because even the deepwater trough portion of the site is too shallow.

Temporary adverse impacts to juvenile red hake EFH would primarily consist of disruptions of juvenile bottom habitats and benthic prey species due to placement of dredged material in the project area. Turbidity generated during placement would result in suspended particulates within the water column and may temporarily degrade ambient water quality for nutrients, dissolved oxygen content, and other constituents. Turbidity may also clog the gills of fishes and invertebrates within the turbidity plume, and may induce avoidance behavior by red hake and may reduce survivorship of some prey species. The spatial extent of impacts to juvenile red hake EFH would be limited to the sites of direct placement of dredged material and adjacent habitats. Given the relative size and open character of the Chesapeake Bay where work would occur and the rapid settling and dilution of suspended sediments, the potential effects to turbidity, dissolved oxygen, nutrient concentrations, and other water quality parameters are expected to be very short-term.

Dredged material placement would cause the displacement and temporary loss of benthic invertebrates preferred as prey by the juvenile red hake. Benthic invertebrates would be impacted

through burial from settling of suspended sediments, alteration of habitat structure, and disruption of egg settlement rate and early stage development of prey species, within and adjacent to the project. Juvenile red hake would be forced to seek other benthic foraging habitat within the lower Chesapeake Bay during and immediately following dredged material placement events, until the benthic community has reestablished in the disturbed areas. Recolonization of impacted areas would likely be initially dominated by opportunistic species which are typical of the area. Recolonization by equilibrium benthic organisms would be complete within approximately 1.5 years or less (USACE Norfolk District, 2016; Schaffner, 2010). There is abundant habitat throughout the lower Chesapeake Bay from which juvenile red hake may forage during periods of active dredged material placement.

Potential permanent impacts to juvenile red hake EFH would be related to the long-term availability and suitability of muddy, depressional habitats. Deepwater areas within the WTAPSNE site would be incrementally filled in by successive placement events over a period of decades, eventually reaching a depth of roughly 30 feet MLLW. Placement activities would create an uneven, mounded bottom profile that provides numerous depressional areas suitable for hake. Material to be dredged from within the York Spit Channel and placed at the proposed site is generally characterized as silts and clays, and would be comparable in composition to the soft, fine surficial sediments currently present, and would be similarly suitable for foraging by juvenile red hake. Impacted areas would continue to satisfy the requirements for juvenile red hake EFH, even if the bathymetry, and therefore the benthic prey communities are somewhat altered, over time. These impacts are therefore not expected to be substantially adverse.

In summary, the project area contains EFH only for juvenile stage red hake. Potential adverse impacts to juvenile red hake EFH would primarily consist of seasonal and temporary effects on benthic forage and shelter habitats during periods of maintenance dredging. Juveniles present during placement activities would be forced to seek other suitable habitat, and such habitats are abundant throughout the lower Chesapeake Bay. Benthic organisms would begin recolonizing impacted areas relatively quickly and would be fully re-established within approximately 1.5 years. Juvenile red hake are expected to return to impacted areas because a similar habitat, including depressions between and among placement mounds, would be available for their return. Long-term impacts to red hake EFH would be limited to gradual decrease in average depth over the WTAPSE site, which may slightly alter benthic community structure, but is not expected to be substantially adverse to hake.

WINDOWPANE FLOUNDER (*Scopthalmus aquosus*)

EFH is designated for the juvenile and adult windowpane flounder in both estuarine (0.5 < salinity < 25.0 ppt) and marine waters (salinity ≥ 25.0 ppt) of the Chesapeake Bay Mainstem (https://www.greateratlantic.fisheries.noaa.gov/hcd/md1.html/). Windowpane flounder are typically found on sand, silty sand or mud bottoms at depths ranging from 1 to 2 m to < 56 m (3 ft to < 184 ft). (Chang et al., 1999). Windowpane flounder are year-round residents of Chesapeake Bay. They common to abundant in the lower bay. They can be found as far north as the Choptank River (Murdy and Musick, 2013). During VIMS trawl surveys conducted between 1988 and 1999 in the Virginia waters of the Chesapeake Bay, approximately 72 percent of trawl catches were juveniles within the months of April to June representing peak abundance, with adults peaking in

November. Both juvenile and adult catches were concentrated in the Bay mouth and Eastern Shore during the spring and summer months. Windowpane flounder appear to prefer higher salinities (> 22 ppt) and lower temperatures (< 16°C) (VIMS, 2002).

Juveniles
EFH for the juvenile windowpane flounder includes intertidal and sub-tidal benthic habitats in estuarine, coastal marine, and continental shelf waters from the Gulf of Maine to northern Florida, including mixed and high salinity zones in bays and estuaries. Essential fish habitat for juvenile windowpane flounder is found on mud and sand substrates and extends from the intertidal zone to a maximum depth of 60 meters. Young-of-the-year juveniles prefer sand over mud (NEFMC and NMFS, 2017). Juveniles generally occur in water temperatures < 25°C, water depths ranging from 1 to 100 m (3 to 328 ft), and salinities ranging from 5.5 to 36 ppt (https://www.greateratlantic.fisheries.noaa.gov/hcd/windowpane.pdf). Juvenile windowpane flounder prey on small crustaceans, such as mysids and decapod shrimp, and tomcod and hake larvae (Chang et al., 1999).

Adults
EFH for the adult windowpane flounder includes intertidal and sub-tidal benthic habitats in estuarine, coastal marine, and continental shelf waters from the Gulf of Maine to Cape Hatteras, including mixed and high salinity zones in bays and estuaries. Essential fish habitat for juvenile windowpane flounder is found on mud and sand substrates and extends from the intertidal zone to a maximum depth of 70 meters. (NEFMC and NMFS, 2017). Adults generally occur in water temperatures < 26.8°C, water depths ranging from 1 to 75 m (3 to 246 ft), and salinities ranging from 5.5 to 36 ppt (https://www.greateratlantic.fisheries.noaa.gov/hcd/windowpane.pdf). Like the juveniles, adult windowpane flounder prey on small crustaceans, such as mysids and decapod shrimp, and gadid larvae (Chang et al., 1999).

Potential Impacts to Windowpane Flounder EFH
EFH for the juvenile and adult life stages of windowpane flounder is present within the project area.

Temporary adverse impacts to juvenile and adult windowpane flounder EFH would primarily consist of disruptions of bottom habitats and benthic prey species due to placement of dredged material in the project area. Turbidity would result in suspended particulates within the water column and may temporarily degrade ambient water quality for nutrients, dissolved oxygen content, and other constituents. Turbidity may also clog the gills of fishes and invertebrates within the turbidity plume, and may induce avoidance behavior by flounder and may reduce survivorship of some prey species. Given the relative size and open character of the Chesapeake Bay where work would occur and the rapid settling and dilution of suspended sediments, the potential effects to turbidity, dissolved oxygen, nutrient concentrations, and other water quality parameters are expected to be very short-term.

Dredged material placement would cause the displacement and temporary loss of benthic invertebrates and larval fish preferred as prey by the juvenile and adult windowpane flounder. Benthic invertebrates would be impacted through burial from settling of suspended sediments, alteration of habitat structure, and disruption of egg settlement rate and early stage development

of prey species, within and adjacent to the project. Flounder would be forced to seek other benthic foraging habitat within the lower Chesapeake Bay during and immediately following dredged material placement events, until the benthic community has reestablished in the disturbed areas. Recolonization of impacted areas would likely be dominated by opportunistic species which are typical of the area. Recolonization by benthic organisms is expected to begin quickly, and be complete within approximately 1.5 years or less (Schaffner, 2010). There is abundant suitable habitat throughout the lower Chesapeake Bay from which juvenile and adult windowpane flounder may forage during periods of active dredged material placement.

Potential permanent impacts to juvenile and adult windowpane flounder EFH would be related to the long-term suitability of available habitats within the WTAPSNE site. Deepwater areas within the WTAPSNE site would be incrementally filled in by successive placement events over a period of decades, eventually reaching a depth of roughly 30 feet MLLW. This infilling would gradually eliminate the trough as a distinctively deepwater feature. Material to be dredged from within the York Spit Channel and placed at the proposed site is generally characterized as silts and clays, and would be comparable in composition to the soft, fine surficial sediments currently present. Impacted areas would continue to satisfy the substrate requirements of juvenile and adult windowpane flounder EFH, even if benthic prey communities are temporarily altered. These long-term impacts are therefore not expected to be substantially adverse.

In summary, the project area contains EFH only for juvenile and adult stage windowpane flounder. While some individual flounder may be killed via rapid burial by sediments, turbidity and sedimentation in general are not expected to cause substantially adverse direct effects to juvenile or adult flounder, which are well adapted to temporarily turbid conditions, and frequently bury themselves in sediments to avoid detection by predators. Potential adverse impacts to windowpane flounder EFH would primarily consist of seasonal and temporary effects on benthic forage and shelter habitats during periods of maintenance dredging, which would occur roughly every four years. Individuals present during periods of active placement would be forced to seek other suitable habitat, and such habitats are abundant throughout the lower Chesapeake Bay. Benthic organisms would begin recolonizing impacted areas relatively quickly and would be fully re-established within approximately 1.5 years. Juvenile and adult windowpane flounder are expected to return to impacted areas because a similar habitat would be available for their return. Long-term impacts to windowpane flounder EFH would be limited to bathymetric changes, which may slightly alter benthic community structure, but such impacts are not expected to be substantially adverse.

SUMMER FLOUNDER (*Paralicthys dentatus*)

Potential EFH is designated for larvae, juvenile and adult summer flounder in both estuarine (0.5 < salinity < 25 ppt) and marine waters (salinity ≥ 25.0 ppt) of the Chesapeake Bay Mainstem (https://www.greateratlantic.fisheries.noaa.gov/hcd/md1.html/). Summer flounder exhibit strong seasonal inshore-offshore movements, although their movements are often not as extensive as compared to other highly-migratory species. Adult and juvenile summer flounder normally inhabit shallow coastal and estuarine waters during the warmer months of the year and remain offshore during the fall and winter. In warmer winters, some summer flounder may remain in deep water in the lower Chesapeake Bay. However, the VIMS 1995 juvenile finfish survey showed that

juvenile (as well as some adult) summer flounder occurred throughout most of the Chesapeake Bay Mainstem over most of the year (Packer et al. 1999). There appears to be very little difference in habitat preference between juvenile and adult summer flounder. Distribution appears to occur at depths primarily between 4 and 14 m (3 and 46 ft), salinities > 15 ppt and bottom temperatures >10°C. Adults appear to be more tolerant of colder waters than juveniles (VIMS, 2002).

Submerged Aquatic Vegetation (SAV) is important for the juvenile and adult life cycles of the summer flounder and is designated as HAPC for this species. Since there is no SAV within the footprint or adjacent to the open water placement sites due to insufficient light penetration, there would be no impacts to summer flounder HAPC (VIMS, 2019).

Larvae

Inshore EFH for summer flounder larvae includes all estuaries where summer flounder larvae were identified as being present (rare, common, abundant, or highly abundant) in the ELMR database for the "mixing" (defined in ELMR as 0.5 to 25.0 ppt) and "seawater" (defined in ELMR as > 25 ppt) salinity zones (https://www.greateratlantic.fisheries.noaa.gov/hcd/summerflounder.htm). In general, summer flounder larvae are most abundant nearshore (12 to 50 miles from shore) at depths ranging from 9 to 70 m (30 to 230 ft). Summer flounder larvae are pelagic, and are most frequently found in the Atlantic Ocean within the southern part of the Mid-Atlantic Bight (MAB) from November to May. From October to May, larvae and post-larvae migrate inshore, entering coastal and estuarine nursery areas to complete transformation. Larvae have been found in water temperatures ranging from 0 to 23°C, but are most abundant in temperatures ranging from 9 to 18°C. Transforming larvae and juveniles are most often captured in the higher salinity portions of estuaries. Post-larvae in the Chesapeake Bay prey on mysids (*Neomysis americana)* (Packer et al., 1999).

Juveniles

Inshore EFH for juvenile summer flounder includes all of the estuaries where juvenile summer flounder were identified as being present (rare, common, abundant, or highly abundant) in the ELMR database for the mixing and seawater salinity zones (https://www.greateratlantic.fisheries.noaa.gov/hcd/summerflounder.htm). In general, juveniles use several estuarine habitats as nursery areas, including salt marsh creeks, seagrass beds, mudflats, and open bay areas in water temperatures > 2°C and salinities ranging from 10-30 ppt. Juveniles are distributed inshore and in many estuaries throughout the range of the species during spring, summer, and fall. During the colder months in the north, there is some movement to deeper waters offshore with the adults, although many juvenile summer flounder would remain inshore through the winter months; some juveniles in southern waters may overwinter in bays and sounds. Offshore juveniles return to the coast and bays in the spring and generally stay the entire summer. The presence, distribution, and abundance of juveniles nearshore and in estuaries has been documented by both fishery dependent and independent data and each State's flounder experts. In the lower Chesapeake Bay, juveniles enter the Bay from March through April, are present in the Bay from April through September, and leave the Bay from October through November. Limited numbers of juvenile summer flounder are found from December through February. Juveniles found in the lower Chesapeake Bay prey on juvenile spot (*Leiostomus xanthurus*), pipefish (*Syngnathus fuscus*), mysid *Neomysis americana*, and shrimps (*P. vulgaris*, *C. septemspinosa*) (Packer et al., 1999).

Adults

Inshore EFH for adult summer flounder includes all of the estuaries where adult summer flounder were identified as being common, abundant, or highly abundant in the ELMR database for the mixing and seawater salinity zones (https://www.greateratlantic.fisheries.noaa.gov/hcd/summerflounder.htm). Generally, adult summer flounder inhabit shallow coastal and estuarine waters during warmer months and move offshore to the outer continental shelf to depths of 152 m (500 ft) during colder months. Some evidence suggests that older adults may remain offshore all year. However, due to overfishing, most of the adults are < 3 years of age and return to the inner continental shelf and estuaries during the summer. The presence, distribution, and abundance of adults nearshore and in estuaries has been documented by both fishery dependent and independent data. In the lower Chesapeake Bay, found that adults enter the Bay in April, are present in the Bay from April through September, and leave the Bay in mid-September. Adults have often been reported as preferring sandy habitats. However, adults can camouflage themselves via pigment changes to reflect the substrate. Thus, they can be found in a variety of habitats with both mud and sand substrates, including marsh creeks, seagrass beds, and sand flats. Laboratory studies on summer flounder in the lower Chesapeake Bay suggest that in patchy seagrass/sand habitats, flounder may avoid predation by staying in the sand near the seagrass beds, rather than in the grass beds themselves. Adult summer flounder are opportunistic feeders with fish and crustaceans making up a significant portion of their diet (Packer et al., 1999).

Potential Impacts to Summer Flounder EFH

EFH requirements are met throughout the entire project area for larval, juvenile and adult life stages of summer flounder.

Short-term adverse impacts to larval summer flounder would include direct mortality associated with dredged material placement as a result of burial or asphyxiation, and may include adverse impact to larval EFH. Turbidity would result in suspended particulates within the water column and may temporarily degrade ambient water quality for nutrients, dissolved oxygen content, and other constituents. Turbidity may also clog the gills of fishes and invertebrates within the turbidity plume. Anoxic dredged materials may also contain chemically-reduced sediments which, at least in some circumstances, produce significant chemical oxygen demand (COD) within ambient waters at the site of disposal. In practice, however, this effect is generally mitigated by the entrainment of oxygen-rich surficial waters during overboard placement and by tidal mixing. Due to their small size and weak swimming ability, larval summer flounder present in the immediate area of dredged material placement would be vulnerable to mortality by asphyxiation and oxygen stress. These impacts would only be likely within the most concentrated portion of a turbidity plume and would persist only for brief durations (e.g. 30-60 min following each placement event). Physical burial during placement of dredged material is not expected to be a significant source of mortality of larval or post larval summer flounder. Larvae are not demersal, and would not be expected to be concentrated in placement locations. Mysids and other invertebrate prey would be similarly affected by the project, which would constitute a temporary, adverse impact to larval summer flounder EFH.

Temporary adverse impacts to EFH for both juvenile and adult summer flounder would be short-term disruptions of bottom habitats and prey species due to placement of dredged material in the

project area. Turbidity would result in suspended particulates within the water column and may temporarily degrade ambient water quality, to include nutrients, dissolved oxygen content, etc. Turbidity may also clog the gills of fishes and invertebrates within the turbidity plume, and may induce avoidance behavior by flounder and may reduce survivorship of some prey species. The direct impacts to EFH would be limited to the sites of direct placement of dredged material and adjacent habitats. Given the relative size and open character of the Chesapeake Bay where work would occur and the rapid settling and dilution of suspended sediments, the potential effects to turbidity, dissolved oxygen, nutrient concentrations, and other water quality parameters are expected to be very short-term. Avoidance behavior due to increased turbidity and degradation or temporary loss of benthic habitat for prey species is the most likely temporary impact for juvenile and adult summer flounder. The project is not expected to cause significant mortality of juvenile or adult summer flounder.

Dredged material placement would cause the displacement and temporary loss of benthic invertebrates and larval fish preferred as prey by the juvenile and adult summer flounder. Benthic invertebrates would be impacted through burial from settling of suspended sediments, alteration of habitat structure, and disruption of egg settlement rate and early stage development of prey species, within and adjacent to the project. Flounder would be forced to seek other benthic foraging habitat within the lower Chesapeake Bay during and immediately following dredged material placement events, until the benthic community has reestablished in the disturbed areas. Recolonization of impacted areas would likely be initially dominated by opportunistic species which are typical of the area. Recolonization by equilibrium benthic organisms is expected to be complete within approximately 1.5 years or less (USACE Norfolk District, 2016; Schaffner, 2010). There is abundant habitat throughout the lower Chesapeake Bay from which juvenile and adult summer flounder may forage during periods of active dredged material placement.

Potential permanent impacts to juvenile and adult summer flounder EFH would be related to the long-term suitability of available habitats within the WTAPSNE site. Deepwater areas within the WTAPSNE site would be incrementally filled in by successive placement events over a period of decades, eventually reaching a depth of roughly 30 feet MLLW. This infilling would gradually eliminate the trough as a distinctively deepwater feature. Material to be dredged from within the York Spit Channel and placed at the proposed site is generally characterized as silts and clays, and would be comparable in composition to the soft, fine surficial sediments currently present. Impacted areas would continue to satisfy the requirements of juvenile and adult summer flounder EFH, even if benthic prey communities experience periodic, temporary disturbance. These effects are therefore not expected to be substantially adverse.

In summary, the project area contains EFH for larval, juvenile and adult stage summer flounder. Turbidity and sedimentation in general are not expected to cause substantially adverse direct effects to juvenile or adult flounder, which are well adapted to temporarily turbid conditions, and frequently bury themselves in sediments to avoid detection by predators. Larval flounder in the immediate area would be vulnerable to mortality from smothering and asphyxiation for a short period after dredged material placement, but this is not expected to affect significant numbers or constitute a substantially adverse effect on the species within the Chesapeake Bay. Potential adverse effects to summer flounder EFH would primarily consist of seasonal and temporary effects on benthic forage habitats and prey species, during periods of dredged material placement.

Juvenile and adult summer flounder would be forced to seek other suitable habitat during periods of active placement, and such habitats are abundant throughout the lower Chesapeake Bay. Larval, juvenile and adult EFH would undergo temporary, adverse impacts due to disruption and loss of benthic and demersal prey species and their habitats. Benthic organisms would begin recolonizing impacted areas relatively quickly and would be fully re-established within approximately 1.5 years. Long-term effects to summer flounder EFH would be limited to bathymetric changes, but such effects are not expected to be substantially adverse.

BLUEFISH (*Pomatomus saltatrix*)

EFH is designated for the juvenile and adult bluefish in both estuarine (0.5 < salinity < 25 ppt) and marine waters (salinity ≥ 25.0 ppt) of the Chesapeake Bay Mainstem (https://www.greateratlantic.fisheries.noaa.gov/hcd/md1.html/). Bluefish travel in schools of like-sized individuals and undertake seasonal migrations, moving into the MAB during spring and south or farther offshore in the fall. Bluefish are schooling, pelagic predators that feed primarily upon smaller, schooling baitfishes like anchovies, menhaden and river herring. While bluefish prey primarily upon small planktivorous baitfishes, they are opportunistic and may also prey upon other types of fishes and invertebrates such as shrimp and crab. Within the MAB, they occur in large bays and estuaries as well as across the entire continental shelf. Bluefish are generally found in estuaries during the juvenile phase and in larger bays and open oceans as adults (Fahay et al., 1999). Bluefish occur in the Chesapeake Bay from spring to autumn and are abundant in the lower Bay. In early autumn, bluefish begin to migrate out of the Bay and move south along the coast. Peak abundances near the Bay mouth occur from April to July and again in October and November (Murdy and Musick, 2013). Bluefish prefer salinities > 16 ppt and water depths between 8 and 10 m (26 and 33 ft) (VIMS, 2002).

Juveniles

EFH for the juvenile bluefish includes all major estuaries between Penobscot Bay, Maine and St. Johns River, Florida (https://www.greateratlantic.fisheries.noaa.gov/hcd/bluefish.htm). Generally juvenile bluefish occur in Mid-Atlantic estuaries from May through October, within the mixing and salinity zones. Distribution of juveniles by temperature, salinity, and water depth over the continental shelf is undescribed (Fahay et al., 1999). Juvenile bluefish enter the Chesapeake Bay during the spring and summer and leave the Bay in late fall (Lippson, 1973).

Adults

EFH for adult bluefish includes all major estuaries between Penobscot Bay, Maine and St. Johns River, Florida (https://www.greateratlantic.fisheries.noaa.gov/hcd/bluefish.htm). Adult bluefish are found in North Atlantic estuaries from June through October, Mid-Atlantic estuaries from April through October, and in South Atlantic estuaries. Adult bluefish are highly migratory and distribution varies seasonally and according to the size of the individuals comprising the schools. Adult bluefish enter the Chesapeake Bay during the spring and summer and leave the Bay in late fall (Murdy and Musick, 2013).

Potential Effects to Bluefish EFH

EFH requirements for juvenile and adult bluefish are met throughout the project area. EFH for other life stages is not present within the project area.

Temporary effects to juvenile and adult bluefish EFH would consist primarily of turbidity generated within the water column due to placement of dredged material in the project area. Turbidity would result in suspended particulates within the water column and may temporarily degrade ambient water quality, to include nutrients, dissolved oxygen content, etc. Turbidity may also clog the gills of fishes and invertebrates within the turbidity plume, and may induce avoidance behavior by bluefish and may reduce survivorship of some prey species. Given the relative size and open character of the Chesapeake Bay where work would occur and the rapid settling and dilution of suspended sediments, the potential effects to turbidity, dissolved oxygen, nutrient concentrations, and other water quality parameters are expected to be very short-term. While pelagic predators like bluefish may be unable to effectively hunt prey within the turbidity plume immediately following placement of dredged material, they are sometimes drawn towards dredging and disposal activities, which displace and expose potential prey along the periphery of the turbidity plume. Temporary turbidity during dredged material placement activities, although disruptive, is therefore not expected to constitute a substantially adverse effect.

Potential indirect effects to juvenile and adult bluefish EFH may result from the temporary loss of benthic organisms and disruption of their habitats. Small benthic invertebrates may be prey items for small fish that are, in turn, potential prey for juvenile or adult bluefish. Disturbance to benthic habitats and temporary loss of forage for bluefish prey species could, therefore, at least potentially impact bluefish EFH. Abundant suitable habitats for prey are available throughout the lower Chesapeake Bay, and this is not expected to constitute a substantially adverse impact to bluefish populations. The project is not expected to cause permanent effects to EFH for juvenile or adult bluefish. Gradual infilling of the deepwater trough would actually bring that area within the optimum depth range for bluefish (26 to 34 feet).

In summary, potential effects to juvenile and adult bluefish EFH would be temporary, minor and indirect, and are not expected to be substantially adverse. Bluefish are a schooling, pelagic species that is not generally associated with bottom habitats. Indirect effects due to the temporary loss or degradation of benthic habitats of potential prey species would be negligible, as benthic prey are a minor component of bluefish diets and there are abundant other prey throughout the area upon which the bluefish can feed. Given the above factors, no substantially adverse effects to bluefish EFH are expected to occur.

ATLANTIC BUTTERFISH (*Peprilus triacanthus*)

EFH is designated for eggs, larvae, juvenile and adult Atlantic butterfish in both estuarine ($0.5 <$ salinity < 25.0 ppt) and marine waters (salinity ≥ 25.0 ppt) of the Chesapeake Bay Mainstem (https://www.greateratlantic.fisheries.noaa.gov/hcd/md1.html/). Butterfish form large schools in inshore and offshore waters often near the surface. Butterfish are pelagic and typically found over sand, mud and mixed substrates (Murdy and Musick, 2013; Cross et al., 1999). Butterfish have a seasonal inshore-offshore, north-south migration in response to changing water temperatures. They winter near the edge of the continental shelf in the MAB and migrate inshore in the spring

to feed on planktonic fish, squid, crustaceans, and jellyfish, and to reproduce. They remain near the surface at water depths of 22 to 55 m (72 to 180 ft) and often come close inshore; schools are frequently seen on shallow flats and in sheltered bays and estuaries. During the summer, butterfish occur over the entire Mid-Atlantic shelf from sheltered bays and estuaries out to about 200 m (656 ft). In late fall, butterfish move southward and offshore in response to falling water temperatures (Cross et al., 1999). Butterfish occur in the Chesapeake Bay from March through November and are common to abundant in the lower Bay and occasional in the upper Bay, extending as far north as the Patapsco River. Within the Bay, butterfish move northward in the spring, first appearing in Virginia waters in March, but they are not found above the Rappahannock River before May. All butterfish leave the Chesapeake Bay by December and overwinter offshore in deeper water (Murdy and Musick, 2013). Butterfish are preyed on by many species including haddock, silver hake, goosefish, weakfish, bluefish, swordfish, sharks (hammerhead), and longfin inshore squid (Cross et al., 1999).

Eggs
Inshore EFH for butterfish eggs is the "mixing" and/or "seawater" portions of all the estuaries where butterfish eggs are "common," "abundant," or "highly abundant" on the Atlantic coast (https://www.greateratlantic.fisheries.noaa.gov/hcd/butterfish.htm). Butterfish eggs are buoyant, pelagic and occur from the outer continental shelf to the high-salinity, lower parts of estuaries in the MAB. Eggs have been collected at water temperatures ranging from 12 to 23ºC and at salinities ranging from 25 to 33 ppt (Cross et al., 1999).

Larvae
Inshore EFH for butterfish larvae is the "mixing" and/or "seawater" portions of all the estuaries where butterfish larvae are "common," "abundant," or "highly abundant" on the Atlantic coast (https://www.greateratlantic.fisheries.noaa.gov/hcd/butterfish.htm). Butterfish larvae are pelagic and occur from the outer continental shelf to the lower, high salinity parts of estuaries in the MAB. Larvae have been collected at water temperatures ranging from 7 to 26ºC (most abundantly found at temperatures ranging from 9 to 19ºC) and salinities ranging from 6.4 to 37.4 ppt, and water depths ranging from 10 to 1,750 m (33 to 5,741 ft). Larger larvae and pelagic juveniles (< 30 mm) often associate with jellyfish, *Sargassum*, and other flotsam (Cross et al., 1999).

Juveniles
Inshore EFH for butterfish juveniles is the "mixing" and/or "seawater" portions of all the estuaries where butterfish juveniles are "common," "abundant," or "highly abundant" on the Atlantic coast (https://www.greateratlantic.fisheries.noaa.gov/hcd/butterfish.htm). Butterfish juveniles reside on the continental shelf, inshore bays and estuaries and are common in inshore areas. Smaller juveniles have been found under floating objects, while larger juveniles aggregate over sandy to muddy substrates. Larger juveniles may congregate near the bottom during the day and move upward at night. Juvenile butterfish prefer water temperatures ranging from 4.4 to 29.7ºC and prefer salinities ranging from 3 to 37.4 ppt. Juvenile butterfish diet is similar to adult feeding habits, where diet is dominated by planktonic prey (Cross et al., 1999).

Adults
Inshore EFH for butterfish adults is the "mixing" and/or "seawater" portions of all the estuaries where butterfish adults are "common," "abundant," or "highly abundant" on the Atlantic coast (https://www.greateratlantic.fisheries.noaa.gov/hcd/butterfish.htm). Adult butterfish occur in

water temperatures ranging from 4.4 to 21.6ºC and in salinities ranging from 5 to 32 ppt and are frequently found over sand, mud, and mixed substrates. During the summer, adult butterfish occur inshore where they remain near the surface; schools are frequently seen on shallow flats and in sheltered bays, estuaries, and the surf zone. Adult butterfish feed mainly on planktonic prey including thaliaceans (primarily *Larvacea* and *Hemimyaria*), mollusks (primarily squids), crustaceans (copepods, amphipods, and decapods), coelenterates (primarily hydrozoans), polychaetes (primarily *Tomopteridae* and *Goniadidae*), small fishes, and ctenophores (Cross et al., 1999).

Potential Effects to Atlantic Butterfish EFH

EFH requirements are met for egg, larval, juvenile and adult life stages of butterfish, throughout the project area.

Atlantic butterfish eggs occur in salinities greater than the range of 11 to 24 ppt found within the project area, and the project is therefore not expected to have any meaningful effect on butterfish eggs or egg EFH. Potential adverse effects to Atlantic butterfish larvae, if present during dredged material placement activities, would include direct mortality associated with dredged material placement, as a result of burial or asphyxiation. Dredged material placement would be concurrent with maintenance dredging of the York Spit Channel, which can occur any time from November 15th through August 31st depending on dredge availability, but typically occurs between November 15th and early spring. Butterfish larvae are present within the lower Chesapeake in the spring and summer, therefore adverse effects to butterfish larvae are only anticipated in years when dredging cannot be conducted during winter. Atlantic butterfish larvae are planktonic and planktivorous, and the project will not meaningfully affect the availability of planktonic prey upon which butterfish larvae rely. The project would thus have no discernable effect on Atlantic butterfish larval EFH.

Juvenile and adult Atlantic butterfish are pelagic feeders and do not rely upon benthic prey. Potential temporary adverse effects to EFH for both juvenile and adult butterfish would be due to increased turbidity and interference with water column foraging. Juveniles, which may seek refuge near the bottom during the day, may be displaced during dredged material placement activities, but would likely shift to adjacent areas. Adult Atlantic butterfish occur within the lower Chesapeake Bay in the spring through fall, and overwinter in coastal shelf waters, whereas juveniles are present during the summer and fall. Temporary effects to juvenile and adult Atlantic butterfish and their EFH are only anticipated in years when dredging occurs during the late spring, summer or fall. Such effects are not expected to be substantially adverse. The project is not expected to cause significant mortality of juvenile or adult butterfish. The project is not expected to cause any substantially adverse permanent effects to butterfish EFH.

In summary, the project may cause direct mortality of larval Atlantic butterfish and temporary adverse effects to larval EFH, but only if maintenance dredging of the York Spit Channel occurs outside of the preferred winter timeframe due to contractor availability. The project may likewise cause temporary effects to juvenile and adult Atlantic butterfish EFH if maintenance dredging occurs during the late spring, summer or fall, although such effects are not expected to be substantially adverse.

SCUP (*Stenotomus chrysops*)

EFH is designated for the juvenile and adult scup in the marine waters (salinity ≥ 25.0 ppt) of the Chesapeake Bay Mainstem (https://www.greateratlantic.fisheries.noaa.gov/hcd/md1.html/). Scup are a temperate, demersal species that use several benthic habitats from open water to structured areas for feeding and possibly for shelter. Scup are commonly found during the summer in larger estuaries and in coastal waters; during the winter, they occur along the outer continental shelf to about 200 m (656 ft) and occasionally deeper. During the summer and early fall, juveniles and adults are common in larger estuaries and coastal areas in open and structured habitats where they feed on a variety of small benthic invertebrates. Scup distribution changes seasonally as fish migrate from estuaries to the edge of the continental shelf as water temperatures decline in the winter and return from the edge of the continental shelf to inshore areas as water temperatures rise in the spring. In the summer, juvenile and adult scup prefer waters with a salinity > 15 ppt and in the winter > 30 ppt (Steimle et al., 1999). Scup are common to abundant visitors to the lower Chesapeake Bay from spring to autumn, extending as far north as the York River, and they migrate offshore to deeper waters during the winter (Murdy and Musick, 2013).

Juveniles

EFH for the juvenile scup includes the estuaries where scup are identified as being common, abundant, or highly abundant in the ELMR database for the mixing and seawater salinity zones (https://www.greateratlantic.fisheries.noaa.gov/hcd/scup.htm). Juvenile scup are generally found in estuaries and bays between Virginia and Massachusetts in the spring and summer on sand, mud, mussel and eelgrass substrates and in water temperatures > 7°C and salinities > 15 ppt. Although formerly relatively abundant, juvenile scup have become less common in the lower Chesapeake Bay. However, in the fall, they are still collected in relatively large numbers at the mouth of the Bay. Juvenile scup feed during the day, principally on polychaetes (e.g., maldanids, nephthids, nereids, and flabelligerids), epibenthic amphipods and other small crustaceans, mollusks, and fish eggs and larvae. Copepods and mysids are important to post-larvae and early juveniles, while bivalve mollusks are more commonly eaten by larger fish (Steimle et al., 1999).

Adults

EFH for the adult scup includes the estuaries where scup were identified as being common, abundant, or highly abundant in the ELMR database for the mixing and seawater salinity zones (https://www.greateratlantic.fisheries.noaa.gov/hcd/scup.htm). Adult habitats are similar to those used by juveniles, including soft, sandy bottoms, on or near structures, such as rocky ledges, wrecks, artificial reefs, and mussel beds in euryhaline areas. Adult scup generally occur at bottom water temperatures ranging from 6 to 27°C. Wintering adults are usually found offshore between November and April, south of New York to North Carolina, in waters > 7ºC. Adult scup are also benthic feeders and forage on a variety of prey, including small crustaceans, zooplankton, polychaetes, mollusks, small squid, vegetable detritus, insect larvae, hydroids, sand dollars, and small fish (Steimle et al., 1999).

Potential Effects to Scup EFH

EFH requirements for the juvenile and adult scup are met for the project area. However, Murdy and Musick (2013) reported that scup only extend as far north as the York River, which is just south of the project area.

Potential temporary effects to juvenile and adult scup EFH would consist primarily of short-term turbidity generated within the water column and disruptions of bottom habitats and prey species due to placement of dredged material in the project area. Turbidity would result in suspended particulates within the water column and may temporarily degrade ambient water quality, to include nutrients, dissolved oxygen content, etc. Turbidity may also clog the gills of fishes and invertebrates within the turbidity plume, and may induce avoidance behavior by scup and may reduce survivorship of some prey species. Given the relative size and open character of the Chesapeake Bay where work would occur and the rapid settling and dilution of suspended sediments, the potential effects to turbidity, dissolved oxygen, nutrient concentrations, and other water quality parameters are expected to be very short-term. Avoidance behavior due to increased turbidity and degradation or temporary loss of benthic habitat for prey species is the most likely temporary effect for juvenile and adult scup. However, it is unlikely that scup would be present within the project area during placement activities, as scup are only present in the lower Chesapeake Bay during the spring through fall during which dredging and associated placement is unlikely to occur, and because the project is upstream of the normal range of scup occurrence within the Bay.

Potential temporary, indirect effects to scup EFH could occur due to the displacement and temporary loss of habitat for benthic invertebrates and larval fish prey. Benthic invertebrates would be impacted through burial from settling of suspended sediments, alteration of habitat structure, and disruption of egg settlement rate and early stage development of prey species, within and adjacent to the project. Scup would be forced to seek other benthic foraging habitat until the benthic community has reestablished in the disturbed areas. Recolonization of affected areas would likely be initially dominated by opportunistic species which are typical of the area. Recolonization by equilibrium benthic organisms is expected to be complete within approximately 1.5 years or less (USACE Norfolk District, 2016; Schaffner, 2010).

Potential permanent effects to juvenile and adult scup EFH would be related to the long-term suitability of available habitats within the WTAPSNE site. Deepwater areas within the WTAPSNE site would be incrementally filled in by successive placement events over a period of decades, eventually reaching a depth of roughly 30 feet MLLW. Material to be dredged from within the York Spit Channel and placed at the proposed site is generally characterized as silts and clays, and would be comparable in composition to the soft, fine surficial sediments currently present. Affected areas would continue to satisfy the requirements of juvenile and adult scup EFH, even if benthic prey communities are somewhat altered, over time. Moreover the project area may only be occasionally utilized by scup. These effects are therefore not expected to be substantially adverse.

In summary, substantially adverse effects are not expected to occur for juvenile or adult scup or its EFH. According to some recent investigation (Murdy & Musick, 2013), the project area is at the northern, upstream limit of scup occurrence within the Bay, likely due to scup's preference for higher salinities. Dredged material placement would be concurrent with maintenance dredging of the York Spit Channel, which can occur any time from November 15th through August 31st depending on dredge availability, but typically occurs between November 15th and early spring. Adult and young-of-year juvenile scup are likely only present in the Chesapeake Bay during the

late spring, summer and early fall. For these reasons, the project is expected to have minimal effect to any life stages of scup or its EFH.

BLACK SEA BASS (*Centropristus striata*)

EFH is designated for the juvenile and adult black sea bass in both estuarine (0.5 < salinity < 25.0 ppt) and marine waters (salinity ≥ 25.0 ppt) of the Chesapeake Bay Mainstem (https://www.greateratlantic.fisheries.noaa.gov/hcd/md1.html/). This species can be found from the Gulf of Maine to as far south as the Florida Keys. In the MAB, juvenile and adult black sea bass move inshore and north in the summer and offshore and south in the winter. Black sea bass are strongly associated with structurally-complex habitats such as reefs and shipwrecks (Drohan et al. 2007). Black sea bass are common in the Chesapeake Bay from spring to late autumn, extending as far north as the Chester River. In the winter, they migrate offshore and south. Large fish are more common offshore than in the Bay (Murdy and Musick, 2013).

Juveniles
Inshore, juvenile black sea bass EFH is the estuaries where black sea bass are identified as being common, abundant, or highly abundant in the ELMR database for the "mixing" and "seawater" salinity zones (https://www.greateratlantic.fisheries.noaa.gov/hcd/blackseabass.htm). Juveniles are found on vegetated flats and in channels (Murdy and Musick, 2013). Juveniles migrate in the fall from nearshore summer habitats to overwintering habitats on the outer continental shelf. During warmer winters, juveniles may overwinter in deeper waters of lower Chesapeake Bay. Juveniles return to nearshore and estuarine habitats in the spring and are collected as early as March in the Chesapeake Bay region. In the spring, juveniles are found in waters with salinities ranging from 28 to 36 ppt, with the majority spread in 33 to 35 ppt, and in the fall, juveniles are found in waters with salinities ranging from 29 to 36 ppt, with the majority spread in 31 to 33 ppt (Drohan et al., 2007). Juveniles prey on shrimp, isopods, and amphipods (Murdy and Musick, 2013).

Adults
Inshore, adult black sea bass EFH is the estuaries where black sea bass are identified as being common, abundant, or highly abundant in the ELMR database for the "mixing" and "seawater" salinity zones (https://www.greateratlantic.fisheries.noaa.gov/hcd/blackseabass.htm). Habitats used by adult black sea bass include rocky reefs, cobble and rock fields, stone coral patches, exposed stiff clay, and mussel beds. The VIMS trawl and beach seine surveys from 1988-1999 of Chesapeake Bay and tributaries show that adults were more common during the latter part of the summer and into the fall on the eastern side of the Bay. In the spring, adults are found in waters with salinities ranging from 32 to 36 ppt, with the majority spread in 34 to 35 ppt, and in the fall, adults are found in waters with salinities ranging from 30 to 36 ppt, with the majority spread in 31 to 32 ppt (Drohan et al., 2007). Black sea bass are visual feeders during daylight hours. Adults feed chiefly on crab, mussels, razor clams, and fishes (Murdy and Musick, 2013). In lower Chesapeake Bay eelgrass beds, black sea bass consume juvenile blue crab and pipefish (*Syngnathus* sp.), as well as isopods, caprellid amphipods, and shrimp.

Potential Effects to Black Sea Bass EFH
While within the geographic range of potential EFH for juvenile and adult black sea bass, the project area does not satisfy the EFH requirements for either life stage. Juveniles prefer vegetated

flats, which are absent from the project area, and channels. The trough within the WTAPSNE site is a relict channel, and may retain some channel-like characteristics, it does not have a deepwater bathymetric connection to the mainstem Chesapeake Bay channel downstream. Adult black sea bass prefer hardbottom and habitats with complex physical structure (e.g. steep slopes, rock, shellfish beds, etc.), which are not known within the project area. Furthermore, the normal salinity ranges within the project area are below the preferred salinity ranges for both life stages. Temporary impacts to bottom habitats and benthic species due to placement of dredged material in the project area are not expected to have any significant effect on the availability of prey for black sea bass. In summary, juvenile and adult black sea bass may occasionally occur within the project vicinity, but they prefer different structural habitats (structured bottoms, roughed bottoms, and shallow waters) and higher salinities than those found within the project area. For these reasons, potential effects to black adult and juvenile sea bass and their EFH are expected to be insignificant.

ATLANTIC SEA HERRING *(Clupea harengus)*

Atlantic sea herring occur in the western Northern Atlantic from Labrador to Cape Hatteras. This pelagic species migrate in schools to areas where they feed, spawn, and spend winter, with spawning occurring from October through November in the southern Gulf of Maine, Georges Bank, and Nantucket Shoals. The Atlantic sea herring deposits eggs on rock, gravel or sand ocean bottom. In late spring, the larvae grow into juveniles and form schools and travel into coastal waters during summer months. This species' eggs are fed upon by a variety of bottom dwelling fish, and juveniles are preyed upon by fish, sharks, skates and seabirds. The Atlantic sea herring feeds on zooplankton, fish larvae, and krill, which feed on phytoplankton and zooplankton (https://www.fisheries.noaa.gov/species/atlantic-herring). The EFH designation for the Atlantic sea herring associated with this project includes the seawater salinity zone of >25 ppt within the waters of the Chesapeake Bay. The water temperature where this species generally occurs is below 10°C, and the depth range is from approximately 20 to 130 m (66 to 427 ft) (https://www.greateratlantic.fisheries.noaa.gov/hcd/herring.pdf).

Potential Effects to Atlantic Sea Herring EFH

Potential EFH for adult Atlantic sea herring is located in the Virginia waters of the Chesapeake Bay where salinity is >25 ppt. They generally avoid water temperatures above 10°C and low salinities (NEFMC and NMFS 2017). Average bottom salinities within the project area are roughly 22 ppt. VECOS data show that bottom salinities within the WTAPSNE site may rise above 25 ppt in some years, but that typically occurs only during mid-summer to early fall, when water temperatures exceed 20°C, which is well above the preferred range for the species. Moreover, the depths within the project area much shallower than the preferred depth ranges for the species. For these reasons, the project is not expected to have any demonstrable effect on Atlantic Sea Herring or its EFH.

4.2 SHARKS

SANDBAR SHARK (*Carcharhinus plumbeus*)

The sandbar shark is a bottom-dwelling, shallow coastal water species that is seldom seen at the water's surface. It is believed that the sandbar shark favors a smooth substrate over muddy or sandy bottoms and would avoid coral reefs and other rough-bottom areas (Florida Museum 2019). It spends most of the time in water depths ranging from 20 to 55 m (66 to 180 ft), but are occasionally found at depths of 200 m (656 ft). Typical water conditions for the sandbar shark is salinity > 22 ppt and water temperatures > 21°C.

Sandbar sharks are common summer residents in the lower Chesapeake Bay, which serves as the principal pupping and nursery ground for the northwest Atlantic population. Sandbar sharks undertake seasonal migrations into temperate waters in the summer, and return to subtropical areas in the winter. Females give birth in late May and June and then migrate offshore and north along the coast. Newborn sharks remain in the nursery ground, which is defined as the 20 ppt salinity line. Thus, these sharks are mostly absent from lower-salinity areas of the Bay. The nursery area expands during dry summers and contracts toward the Bay mouth in rainy years. As day length shortens and Bay water temperatures drop, the young sharks leave the Bay and migrate south of Cape Hatteras to coastal wintering areas near the Gulf Stream off of North Carolina. In the spring as surface waters warm to about 18°C, juvenile sandbar sharks return north to the Chesapeake Bay and other nearshore areas in the MAB. Juveniles have been found in depths ranging from 0.8 m to 23 m (2.625 to 75.459 ft); in water temperatures ranging from 15 to 30°C; and in sand, mud, shell and rocky habitats from Massachusetts to North Carolina (NOAA, 2017). As juveniles grow older, their fall migrations become longer, extending to wintering areas off of Florida and the Gulf of Mexico. Females return to pup every other summer. Young sandbar sharks feed heavily on crustaceans such as juvenile blue crab and mantis shrimp, but transition to a predominantly fish diet with age. Adults prey on mostly bottom fishes such as croakers, small sharks, and skates (Murdy and Musick, 2013).

The Cooperative Atlantic States Shark Pupping and Nursery (COASTSPAN) Survey conducted in 2015 in the lower Chesapeake Bay and in coastal inlets and lagoon habitats along the eastern shore of Virginia, showed that juvenile sandbar sharks dominated the catch in bay, lagoon, and inlet habitats, and the majority of sandbar sharks caught were young-of-year. The study concluded that Virginia's estuarine waters continue to provide important nursery habitat for sandbar sharks (NMFS SAFE Report, 2016).

Potential Effects to Sandbar Shark EFH and HAPC

EFH is designated for the neonate and juvenile life stages of the sandbar shark in the project area. The project area is designated HAPC for the neonate, juvenile and adult life stages of the sandbar shark.

Potential direct, temporary effects to EFH & HAPC for neonatal and juvenile sandbar sharks would consist primarily of short-term disruptions of bottom habitats and the water column. Turbidity would result in suspended particulates within the water column and may temporarily degrade ambient water quality, to include nutrients, dissolved oxygen content, etc. Turbidity may also clog

the gills of fishes and invertebrates within the turbidity plume, and may induce avoidance behavior by sandbar sharks and may reduce survivorship of some prey species. Conversely, young sandbar sharks may be drawn towards disposal activities, which could displace and expose potential prey along the periphery of the turbidity plume. Given the relative size and open character of the Chesapeake Bay where work would occur and the rapid settling and dilution of suspended sediments, the potential effects to turbidity, dissolved oxygen, nutrient concentrations, and other water quality parameters are expected to be very short-term. Temporary turbidity generated during dredged material placement activities, although disruptive to sandbar sharks, is not expected to constitute a substantially adverse effect.

Potential indirect, temporary effects to EFH & HAPC for sandbar sharks would be those resulting from disturbance or temporary loss or alteration of prey habitat related to the proposed dredged material placement. Blue crab, shrimp and other benthic invertebrates and fishes are potential prey for neonate and juvenile sandbar sharks. Adult sandbar sharks feed on mostly bottom fishes such as croakers, small sharks, and skates. Disturbance to benthic habitats and temporary loss of forage for these prey species could potentially impact neonate and juvenile sandbar shark EFH. However, recolonization is expected to occur fairly quickly, possibly within one season, or approximately 1.5 years, of the proposed open water placement activities (Schaffner, 2010). Given the relative abundance of other undisturbed habitats and potential prey throughout the lower Chesapeake Bay, the project is not expected to constitute a substantially adverse effect to neonatal or juvenile sandbar shark EFH.

Potential permanent effects to sandbar shark EFH and HAPC would be related to the long-term suitability of available habitats within the WTAPSNE site. Deepwater areas within the WTAPSNE site would be incrementally filled in by successive placement events over a period of decades, eventually reaching a depth of roughly 30 feet MLLW. Material to be dredged from within the York Spit Channel and placed at the proposed site is generally characterized as silts and clays, and would be comparable in composition to the soft, fine surficial sediments currently present. Affected areas would continue to support benthic communities and potential prey for sharks, and these effects to neonate and juvenile sandbar shark EFH are therefore not expected to be substantially adverse. Adult sandbar sharks are not known to use the project area, and the project is expected to have no significant effect on adult sandbar shark EFH.

In summary, adult sandbar sharks prefer deeper waters than found in the project area, and are not expected to be significantly impacted by the project. There would be some potential for effects on EFH and HAPC of neonate pups and juveniles due to temporary degradation of benthic habitat and prey species following dredged material placement events. However, it is not likely to result in adverse cumulative effects to the species given the abundant adjacent similar habitat. Potential effects to sandbar shark EFH and HAPC would be seasonal and temporary. No long-term detrimental effects to sandbar shark EFH and HAPC are expected to occur. Based on this evaluation, we have determined that no TOY restriction is needed.

4.3 SKATES

CLEARNOSE SKATE (*Raja eglanteria*)

This species may occur along the east coast from the Gulf of Maine south. The clearnose skate is the most abundant inshore skate in the mid-Atlantic inshore waters from late spring to early fall (Robins et al., 1986). North of Cape Hatteras, it moves inshore and northward along the continental shelf during the spring and early summer, and offshore and southward during autumn and early winter when water temperatures cool to 13-16°C. Clearnose skates are demersal and occur within habitat consisting of soft, sandy bottoms, but may also occur within habitats consisting of rocky or gravelly bottoms (Packer et al. 2003. The salinity range is between approximately 12 to 35 ppt. The depth range for this species within the mid-Atlantic is between approximately 1 and 33 m (3 to 108 ft), with most occurring between 7 to 15 m (23 to 49 ft).

According to the 1988-1999 VIMS trawl surveys of Chesapeake Bay, most juvenile and adult clearnose skate appear within the Chesapeake Bay waters between April and December with peak presence between May and August. The findings of the trawl surveys identified that this species was most abundant near the Bay mouth during spring and summer months; however, the species did appear through the Bay during all four seasons. (Packer et al., 2003). The clearnose skate feeds on prey including polychaetes, amphipods, shrimp, crab, bivalves, squids, and small fish such as soles, weakfish, butterfish, and scup. It is regularly preyed upon by sharks, such as the sand tiger.

Juveniles
The habitat for juvenile clearnose skates consists of a substrate of soft, sandy bottom, but may also include rocky or gravelly bottom. Juveniles move inshore and northward during the spring and early summer and offshore and southward during autumn and early winter. Most juveniles are found in salinities of 32 to 35 ppt in the spring, and 31 to 32 ppt in the fall (Packer et al., 2003). The VIMS trawl and beach seine surveys from 1988-1999 of Chesapeake Bay and tributaries indicate that juvenile clearnose skates in the Chesapeake Bay are present for all but the coldest months. Juveniles prey on shrimp, isopods, and amphipods.

Adults
The preferred habitat substrate of adult clearnose skates is similar to that of juveniles. The VIMS trawl and beach seine surveys from 1988-1999 of Chesapeake Bay and tributaries indicate that adult clearnose skates in the Chesapeake Bay are present for all but the coldest months. Most adults are found in salinities ranging from 25 to 27 ppt in the spring, and 26 to 30 ppt in the fall (Packer et al., 2003). Like the juveniles, adults prey on shrimp, isopods, and amphipods, but also on larger crustaceans, bivalves and bony fishes.

Potential Effects to Clearnose Skate EFH
The project area is designated as potential EFH for juvenile and adult clearnose skate.

Juvenile and adult clearnose skate would potentially be directly impacted via mortality due to burial during placement of dredged material in the project area. This would only occur to skates that were in the direct path of the dense, central mass of descending sediment, and is not likely to

affect large numbers of individuals. Given the relative size and open character of the Chesapeake Bay where work would occur and the rapid settling and dilution of suspended sediments, the potential effects to turbidity, dissolved oxygen, nutrient concentrations, and other water quality parameters are expected to be very short-term. While turbidity and sedimentation may cause juveniles and adults to avoid the area for a short period of time, it is unlikely to significantly affect clearnose skates. Skates in general are well adapted to temporarily turbid conditions, as their own benthic feeding behavior generates significant turbidity and partially bury themselves in sediments to avoid detection by predators. Benthic and infaunal feeders like skates may be drawn towards the disposal areas after the initial placement, as this activity may displace and expose potential prey along the edge of the activity and amongst the deposited material.

Potential indirect, temporary effects to juvenile and adult clearnose skate EFH would be those resulting from disturbance or temporary loss or alteration of prey habitat related to the proposed dredged material placement. Both juvenile and adult clearnose skates feed on mostly benthic and infaunal invertebrates, although adults may also prey on squid and bony fishes. Disturbance to benthic habitats and temporary loss of forage for these prey species could potentially impact clearnose skate EFH. However, recolonization is expected to occur fairly quickly, possibly within one season, or approximately 1.5 years, of the proposed open water placement activities (Schaffner, 2010). Maximum bottom salinities within the project area are near the lower limit of the preferred salinity range for the clearnose skate, so the project area probably provides suboptimal habitat value. Given the abundance of other undisturbed habitats and potential prey species throughout the lower Chesapeake Bay, and the marginal nature of the project area relative to clearnose skate habitat preferences, the project is not expected to constitute a substantially adverse effect to juvenile or adult clearnose skate EFH.

Potential permanent effects to juvenile and adult clearnose skate would be related to the long-term suitability of available habitats within the WTAPSNE site. Deepwater areas within the WTAPSNE site would be incrementally filled in by successive placement events over a period of decades, eventually reaching a depth of roughly 30 feet MLLW. Material to be dredged from within the York Spit Channel and placed at the proposed site is generally characterized as silts and clays, and would be comparable in composition to the soft, fine surficial sediments currently present. Affected areas would continue to support benthic communities and potential prey for juvenile and adult clearnose skate, and therefore any effects to EFH are not expected to be substantially adverse.

WINTER SKATE (*Leucoraja ocellata*)

The winter skate occurs from the south coast of Newfoundland and the southern Gulf of St. Lawrence to Cape Hatteras. In the MAB, juvenile and adult winter skates have been identified both inshore and offshore throughout the year. The information provided by the NEFSC bottom trawl surveys indicates that juvenile winter skates were captured year round, and in the Chesapeake Bay area, winter skates have been identified during the timeframe of December to April (Packer et al., 2003). Winter skates may remain buried within the substrate during the daytime hours and be more active at night. The temperature range for this species may range from -1.2°C to 21°C and it is found from the shoreline to approximately 400 m (1,312 ft) (https://www.habitat.noaa.gov/protection/efh/pdf/Winter_Skate_EFH.pdf). Winter skates are

demersal and occur within habitat consisting of soft, sandy bottoms; however, the species may also occur within habitats consisting of rocky or gravelly bottoms (Packer et al., 2003). This species prefers salinities of 28 to 35 ppt. Winter skates are carnivorous and feed on polychaetes, amphipods, decapods, isopods, bivalves, and fishes. Bony fish prey may include smaller skates, alewives, blueback herring, smelt, eels, and butterfish (Packer et al., 2003).

Juveniles
The habitat for juvenile winter skates consists of a substrate of soft, sandy bottom; however, juvenile habitat may also contain rocky or gravelly bottom. Juvenile abundance is greatest at 13 to 15°C (https://www.habitat.noaa.gov/protection/efh/pdf/Winter_Skate_EFH.pdf). Juveniles are most often found in depths between 21 to 80 m (69 to 262 ft), and within salinities ranging between 31 to 35 ppt, with the majority being between 32 to 33 ppt (Packer et al., 2003).

Adults
The habitat of adult winter skates is similar to the juveniles, and consists of soft, sandy bottom but also may include rocky or gravely bottom. Adults generally occur in salinities of 30 to 36 ppt, being most abundant at 33 ppt. Adult abundance during the fall is greatest in waters between 11 to 15°C. The average depth range was identified to be between approximately 21 to 70 m (69 to 230 ft). The fall salinity range was identified as being between 31 to 34 ppt, (Packer et al., 2003). The feeding habits of adults are similar to juveniles and include polychaetes, amphipods, decapods, isopods, bivalves, and fishes.

Potential Effects to Winter Skate EFH
The project area is mapped as potential EFH for the juvenile and adult winter skate. However, the observed salinity ranges within the project area are well below the preferred salinity ranges for both life stages. Temporary effects to bottom habitats and benthic species due to placement of dredged material in the project area are not expected to have any demonstrable indirect effect on the offsite availability of prey for juvenile or adult winter skate. In summary, due to the winter skate's preference for euhaline habitats that not found at the project site, potential project effects to juvenile and adult winter skate and their EFH are unlikely and are considered insignificant.

LITTLE SKATE (*Leucoraja erinacea*)

The little skate occurs from Nova Scotia to Cape Hatteras and is abundant in the northern section of the Mid-Atlantic bight (MAB) and Georges Bank. Little skate habitat consists of sandy or gravelly bottoms, but the species may also occur on mud bottom. The little skate may be found year-round across a range of temperatures. Along the inshore portion of its range, this species moves onshore and offshore during seasonal temperature changes. In spring months, this species generally occurs in shallow waters and moves into deeper waters during winter months. The depth range is from shoreline to approximately 137 m (449 ft) (https: //www.habitat.noaa.gov/protection/efh/pdf/Little_Skate_EFH.pdf.). According to the 1963-2002 NEFSC bottom trawl surveys within the MAB, adults and juveniles were found nearshore in abundance during the winter and infrequently during the summer months (Packer et al., 2003). The temperature range for this species ranges from 1°C to 21°C. Little skates are demersal and occur within habitat consisting of sandy or gravelly bottoms, but this species may also occur within areas of muddy substrate (Packer et al., 2003). This species may occur within waters with salinities

of 28 to 35 ppt. Little skates are carnivorous and generally feed on invertebrates such as decapod crustaceans and amphipods. However, additional food sources include isopods, bivalves, and fishes. (Packer et al., 2003).

Juveniles
The habitat for juvenile little skates consists of a substrate of soft, sandy bottom; however, juvenile habitat may also contain rocky or gravelly bottom. The feeding habits of adults are similar to juveniles. The full depth range for juveniles is from shore to approximately 137 m (449 ft), with the greatest abundance being within between 73 to 91 m (240 to 299 ft) (https://www.habitat.noaa.gov/protection/efh/pdf/Little_Skate_EFH.pdf). Juveniles occur in salinities from 28 to 35 ppt, and are most common in 32 to 33 ppt. The temperature range in the fall for juveniles was identified to be between 5 to 22°C, with the greatest abundance occurring from 8 to 16°C (Packer et al., 2003).

Adults
The habitat of adult little skates is similar to the juveniles, and consists of soft, sandy bottom but also may include rocky or gravely bottom. The full depth range is from shore to approximately 137 m (449 ft), with the most abundance from 73 to 91 m (240 to 299 ft) ((https://www.habitat.noaa.gov/protection/efh/pdf/Little_Skate_EFH.pdf). Adults occur in salinities from 30 to 36 ppt, and are most common at 33 ppt (Packer et al., 2003).

Potential Effects to Little Skate EFH
The project area is mapped as potential EFH for the juvenile and adult little skate. However, the observed salinity ranges within the project area are well below the preferred salinity ranges for both life stages. Temporary effects to bottom habitats and benthic species due to placement of dredged material in the project area are not expected to have any demonstrable indirect effect on the offsite availability of prey for juvenile or adult little skate. In summary, due to the little skate's preference for euhaline habitats that not found at the project site, potential project effects to juvenile and adult little skate and their EFH are unlikely and are considered insignificant.

4.4 NOAA SPECIES OF CONCERN AND OTHER TRUST RESOURCES

SAND TIGER SHARK *(Carcharias taurus*)

The sand tiger shark is a NMFS species of concern throughout its range (http://www.fisheries.noaa.gov/pr/species/fish/sand-tiger-shark.html). Species of concern are those species that NMFS has concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the Endangered Species Act (ESA) (http://www.nmfs.noaa.gov/pr/species/concern/). Sand tiger sharks are found in the surf zone, in shallow bays and around coral and rocky reefs down to depths as great as 190 m. They are most often found near the bottom, but are also found throughout the water column. Sand tiger sharks are migratory, moving poleward during the summer while making equatorial movements during the fall and winter months. Prey items include bony fishes, small sharks, rays, squid, crab and lobsters (http://www.fisheries.noaa.gov/pr/species/fish/sand-tiger-shark.html).

Potential Effects to Sand Tiger Shark EFH
Sand tiger shark EFH is not mapped within the project area and would not be impacted by the project. However, potential EFH is designated for the juvenile sand tiger shark in the marine waters of the lower portion of the Chesapeake Bay, where salinity is >25 ppt. Average bottom salinities within the project area are roughly 22 ppt. VECOS data show that bottom salinities within the WTAPSNE site may rise above 25 ppt in some years, but that typically occurs only during mid-summer to early fall. Juvenile sand tiger sharks may occasionally occur within the project area, but they are not expected to depend upon the area for significant habitats.

Potential temporary, indirect effects to juvenile sand tiger shark could occur due to the displacement and temporary loss of habitat for benthic invertebrates and fish prey. Benthic invertebrates would be impacted through burial from settling of suspended sediments, alteration of habitat structure, and disruption of the development of prey species, within and adjacent to the project. Potential permanent, indirect effects to juvenile sand tiger sharks would be related to the long-term suitability of available habitats for prey within the WTAPSNE site. However, because the project area is not mapped as potential EFH for any life stage, and because any habitat value provided by the project area to sand tiger sharks is speculative, the project is expected to have no significant effect on the sand tiger shark.

DUSKY SHARK (*Carcharhinus obscurus*)

The dusky shark is a NMFS species of concern in the western Atlantic, and occurs from southern Massachusetts and Georges Bank to Florida, Bahamas and Cuba (http://www.nmfs.noaa.gov/pr/pdfs/species/duskyshark_detailed.pdf). Dusky sharks occur in inshore (surf zone) and offshore waters to depths of approximately 400 m (1,300 ft). This species undergoes long temperature-related migrations along the U.S. East Coast, traveling north as water temperatures increase in spring and return south in the fall as waters cool. Adults are more common offshore, and juveniles are common along seaside shoals of the Virginia barrier islands (http://www.vims.edu/research/departments/fisheries/programs/sharks/species/dusky.php). This species occasionally enters the Chesapeake Bay but avoids low salinity waters and is not common to estuaries (http://www.nmfs.noaa.gov/pr/pdfs/species/duskyshark_detailed.pdf). The diet of dusky sharks consists of cartilaginous and bony fishes, as well as squid. This species reproduces every 3 years, between December and January, or between June and July (http://www.nmfs.noaa.gov/pr/pdfs/species/duskyshark_highlights.pdf).

Potential Effects to Dusky Shark EFH
Dusky shark EFH is not mapped within the project area and would not be impacted by the project. However, potential EFH is designated for the adult dusky shark in the marine waters of the lower portion of the Chesapeake Bay, where salinity is >25 ppt. Average bottom salinities within the project area are roughly 22 ppt. VECOS data show that bottom salinities within the WTAPSNE site may rise above 25 ppt in some years, but that typically occurs only during mid-summer to early fall. Adult dusky sharks may rarely occur within the project area, but they are not known to be dependent upon such habitats. Because the project area is not mapped as potential EFH for any life stage, and because the species seldom enters the Bay, the project is expected to have no discernable effect on the dusky shark or its EFH.

BLUE CRAB (*Callinectes sapidus*)

Blue crab are not federally-managed or listed, but they are a NOAA trust resource species because of their ecological and economic significance. They are the most valuable commercial fishery in the Chesapeake Bay, and are important prey for many finfish species that have EFH in the project area. Cobia and red drum prey on adult and larger juvenile blue crab while summer flounder and sandbar shark prey on young juvenile blue crab (Maryland Sea Grant, 2011).

Blue crab habitat includes shallow and brackish waters, eelgrass beds, and muddy bottoms. In the Chesapeake Bay, mating occurs within shallow tributaries between May and October. After mating, female blue crab migrate from sub-estuaries to spawning areas in the lower Chesapeake Bay. When water temperatures fall below 10°C, blue crab activity ceases (e.g., movement and foraging) and the crabs begin a period of overwintering dormancy. In the Chesapeake Bay, most females go through an overwintering stage and produce broods of eggs the following spring (USACE, 2017). In the tidal waters of Virginia, commercial harvest of crabs by crab pot is not allowed from December 1 through March 16 (beginning in 2018), and the commercial harvest of crabs using commercial gear is prohibited from November 1 through March 30 (VMRC, 2017). Juvenile blue crab utilize grass beds for nursery areas, and throughout the life stages of blue crab, grass beds are utilized for foraging.

The VMRC has previously raised concerns regarding potential effects to overwintering female blue crab due to usage of the existing Wolf Trap Alternate Placement Site (WTAPS), which is located to the south of the project area. Lipcius and Knick (2016) analyzed data from the blue crab winter dredge survey conducted from 2009-2016 in the Wolf Trap and Rappahannock Shoal Placement Sites. Lipcius and Knick (2016) reported a high abundance of overwintering female blue crab in the southern portion of the WTAPS, moderate abundance in the north portion of the site, and low abundance in the middle of the site (Figure 3, note that actual densities are exaggerated by factor of 1,000 for visual clarity). They also reported considerable annual variability in female blue crab density at the WTAPS, with low densities in 2012 and 2014 and high densities in 2013 and 2016.

The effects of dredged material placement upon blue crab survival was studied by the USACE Norfolk District and Engineer Research and Development Center (ERDC), using a controlled mesocosm study. Burial of mature female blue crab at depths of 5 and 10 cm increased mortality, whereas few crabs survived burial depths of 30 cm. There did not appear to be an effect of burial duration, i.e., mortality rates did not increase over time. Although water temperatures reached lows of -2°C, the high survival rates of control crabs suggest low temperatures alone did not cause mortality. In addition, because survivors were recovered at the sediment surface, it appears that an inability to ascend through the sediment overburden was the cause of death, with a burial depth of 30 cm most associated with having very few crabs recovered at the sediment surface (ERDC, 2018).

Many factors influence fluctuations in blue crab abundances, including larval success, prey availability, predator abundance, habitat degradation, and disease. Overwintering mortality is another important factor affecting the variability in population size and can be especially influential for crab species near their range limit. Overwintering studies have found that smaller

blue crab are more likely to survive intense cold winters and mature females are more susceptible to mortality. Overwintering blue crab survival is highest in warmer, saline waters (ERDC, 2018).

Placement of dredged material into WTAPS while female crabs are not overwintering (generally from early April to mid-November) is not feasible due to higher costs to dredge in the summer and potential adverse impacts to sea turtles. A hopper dredge is the preferred dredge method because it is more cost efficient and generally performs better than other dredge types in rough sea conditions. A hopper dredge removes material from the bottom of the channel in thin layers with hydraulic pressure. Sea turtles are generally present in the lower Chesapeake Bay from April through November. Sea turtles are vulnerable to entrainment in the draghead of the hopper dredge when they are likely to be feeding or resting on the bay bottom. Measures can be taken to minimize adverse impacts to sea turtles including the use of a mechanical dredge instead of a hopper dredge. Mechanical dredging entails removing material by scooping it from the channel bottom using an open bucket or clamshell and then placing it on a barge. It is unlikely that sea turtles would be captured in the mechanical dredge, presumably because they are able to avoid the dredge bucket. However, it is more cost effective to use a hopper dredge than a mechanical dredge. Therefore, because a hopper dredge is more cost effective and to minimize adverse impacts to sea turtles that may be entrained in a hopper dredge, dredging and placement is conducted in the winter months.

Short-term project effects to blue crab would consist primarily of direct mortality, by burial or asphyxiation, of overwintering female crabs, when these crabs are present within the dredged material placement area. Turbidity would result in suspended particulates within the water column and may temporarily degrade ambient water quality for nutrients, dissolved oxygen content, and other constituents. Turbidity may also clog the gills of fishes and invertebrates within the turbidity plume. Anoxic dredged materials may also contain chemically-reduced sediments which, at least in some circumstances, produce significant chemical oxygen demand (COD) within ambient waters at the site of disposal. In practice, however, this effect is generally mitigated by the entrainment of oxygen-rich surficial waters during overboard placement and by tidal mixing. Cold temperatures reduce the crabs' locomotor ability, and would make overwintering females susceptible to mortality by burial, especially in overburden thicknesses greater than 10cm. When assessing the significance of this effect, however, it must be remembered that the WTAPSNE site is believed to support fewer overwintering female crabs than the currently-used WTAPS site. As previously discussed, a deep muddy channel runs through the center of WTAPSNE. According to the Dredge Disposal Effects on Blue Crab Report provided by VIMS (Appendix F), crab density will almost always be low in muddy habitats. It is likely that within the deeper, muddy channel, crab density will almost always be low due to the muddy habitat, which is usually avoided as an overwintering habitat by blue crab (Lipcius and Knick, 2016).

If, due to placement of dredged material at WTAPSNE, crab habitat becomes more suitable in the area, USACE will reevaluate the use of individual WTAPSNE cells (Figure 4). If habitat alteration occurs, it may take multiple maintenance dredging cycles to alter habitat suitability over the entire WTAPSNE site. In FY 2020, the Baltimore District plans to begin a comprehensive evaluation of alternative placement sites and methods through a DMMP for the portion of the Baltimore Harbor and Channels Project located in Virginia.

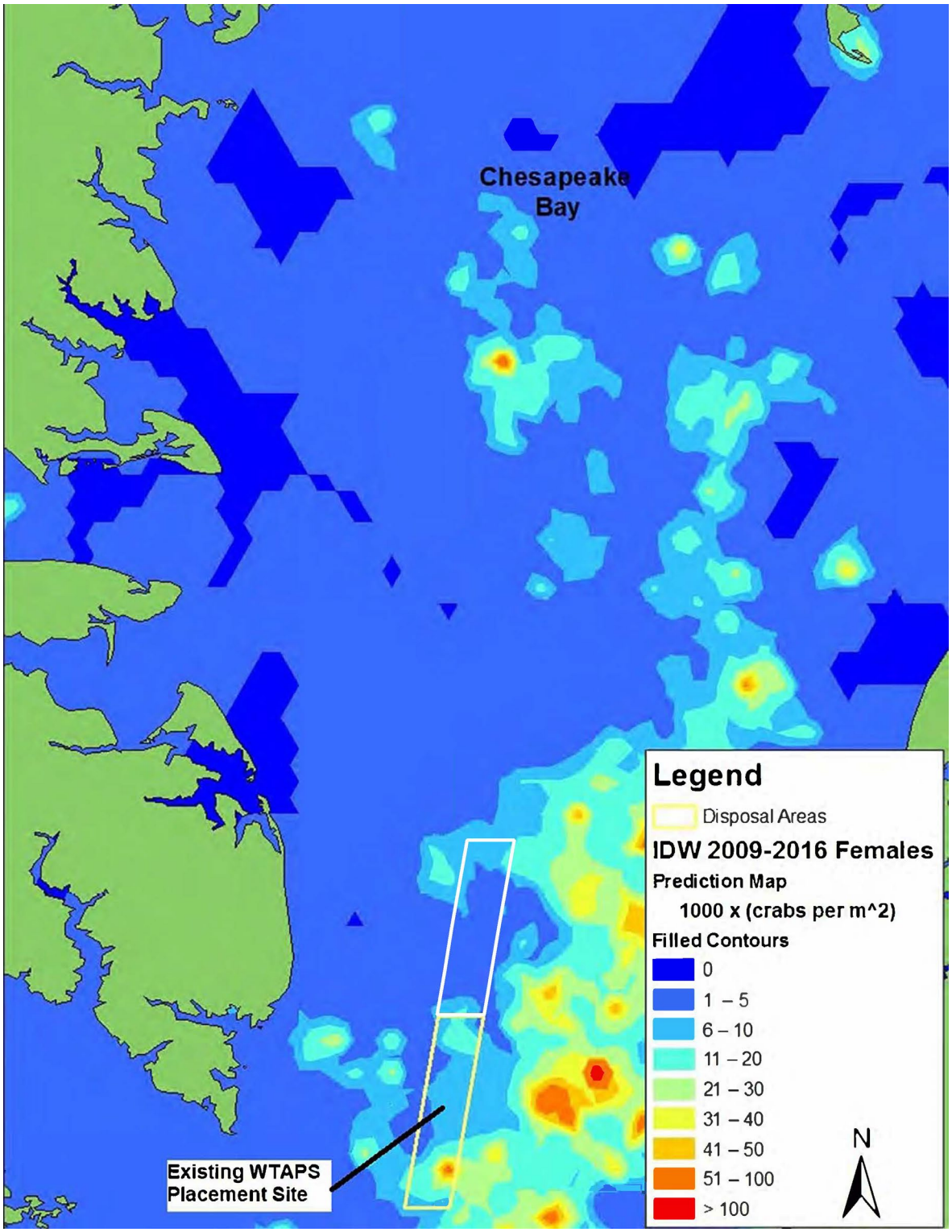

Figure 4. Relative Density of Female Blue Crab 2009-2016 composite, density multiplied by factor of 1,000 for clarity (Modified from Lipcius and Knick 2016)

5 CUMULATIVE EFFECTS TO EFH

For the purpose of this EFH assessment, cumulative effects are considered to be those effects on the habitat of the 16 designated species resulting from other federal, state, and privately sponsored projects that may occur in the project vicinity.

In Virginia, port growth is anticipated to increase throughout the next 50 years, and upon completion of the Craney Island Eastward Expansion Project, a new port facility is planned. Deepening and maintenance of the Atlantic Ocean Channel, Thimble Shoals Channel, Norfolk Harbor Channels and Anchorage F, and Elizabeth River and Southern Branch Channels, as well as sand borrow activities for the Virginia Beach Hurricane Protection Project and Willoughby Spit and Vicinity Hurricane Protection Project is also planned. Additional development, including the construction of the Third Crossing, expansion of the Chesapeake Bay Bridge Tunnel, and construction of the in-water features for the Norfolk Coastal Storm Risk Management Project are planned for the future.

In Maryland, the Department of Transportation may construct a third Bay Bridge span. Baltimore Gas and Electric (BGE) may relocate submerged power cables to overhead in-water pylons at Key Bridge. The USACE plans to continue restoration of Paul S. Sarbanes Ecosystem Restoration at Poplar Island and plans for future Mid Chesapeake Bay Island Ecosystem Restoration; and lastly, Maryland Department of Natural Resources plans the dredging of oyster shell from the Man O'War Shoal for future oyster reef restoration.

Throughout the Chesapeake Bay, ecosystem restoration projects are being implemented by government agencies, nongovernmental organizations, and private entities to restore and/or augment submerged aquatic vegetation, reef, and wetland habitats. These projects revitalize and enhance EFH throughout the bay and its tributaries.

Global climate change also has the potential to affect EFH, managed species, and their prey. Sea level rise may cause an increase in salinity in upstream areas that could affect spawning locations and survivability of early life stages (eggs, larvae, and young-of-the-year). Shifts in breeding habitat could affect the availability or timing of spawning events, though the effects of this change on EFH is uncertain at this time. Shifts in salinity, temperature, and sea level all may result in shifts in forage and forage habitat, which could impact managed species. While such changes in climatic conditions would likely affect EFH, implementation of the WTAPSNE Project is not expected to significantly contribute to those climate-related effects, either cumulatively or synergistically.

The proposed action would establish alternative locations for the ongoing open-water placement activities associated with maintenance dredging of the York Spit Channel, but would not alter the frequency or intensity of those activities. This change does not present any substantially adverse cumulative effects, relative to the "no project" alternative. It would, however, have a substantially beneficial effect upon blue crab populations by reducing adverse effects on overwintering female crabs.

6 FEDERAL AGENCY'S OPINION ON PROJECT EFFECTS TO EFH

In summary:

1. Potential adverse effects to EFH of the 16 species described in this assessment would be periodic, concurrent with maintenance dredging of the York Spit Channel roughly every four years. Potential adverse effects due to turbidity and sedimentation would be temporary. The proposed dredged material placement would potentially disturb motile life stages of managed fish species, at least temporarily, which may cause them to seek alternative habitats elsewhere. This avoidance would occur only in when dredged material placement activities are underway. The proposed placement sites comprise a small proportion of the suitable area within the lower Bay. There would be plentiful habitat available throughout the Bay, to include adjacent waters, from which fishes can forage during project activities. In-water work would occur over several months, and once completed, the local habitats would again be available to all managed fish species and their prey.

2. Existing sediments in the open water placement sites support a benthic community living in the substrate (infauna), including segmented and unsegmented worms, flatworms, bristle worms, and aquatic earthworms, and a variety of amphipods, crabs, and snails living on the surface of the substrate (epifauna). This community is an important food source for fish, particularly the epifauna. This community is characterized by opportunistic ("weedy") and equilibrium (climax) species that are adapted to and tolerant of bottom-disturbing events such as major storms and flows. The existing community is also probably exposed to episodic oxygen stress and hypoxia, at least during some summers. Effects to the benthic community would be short-term, since natural sedimentation and subsequent recolonization of benthic invertebrates is expected to occur rapidly, within months following project activities. Because of its widespread occurrence and rapid expected recovery after disturbance, the short-term loss of the benthic community to dredged material placement activities is not expected to be a substantially adverse, long-term effect to EFH of designated species.

3. Blue crab are an important prey for many finfish species that have EFH in the project area. A high abundance of overwintering female blue crab have been reported in the southern portion of the existing Wolf Trap Alternate Placement Site. The purpose of the proposed project is to expand the placement site to include areas that have been shown to not support such significant populations of overwintering female crabs. Therefore, no substantially adverse effects to overwintering female blue crab are expected to occur as a result of the proposed project, and the overall survivorship of blue crab within the Chesapeake Bay would be improved, relative to continued use of the existing placement site under the "no project" alternative. Mitigation undertaken to benefit blue crab is inherently beneficial to numerous species for which blue crab is an important prey item, including managed species.

4. Dredged material placement would occur approximately every four years. WTAPSNE would reach capacity (be full) after approximately 20 cycles of maintenance of the York

Spit Channel in about the year 2100. Significant effects, both direct and indirect, would be temporary and limited to areas undergoing placement activities. Direct impacts from the proposed project primarily affects the EFH of demersal species. Impacts to EFH for pelagic species in the proposed project area consists of primarily impacts to prey. Sequencing of the activities would result in the effects moving from one placement site to another, within the overall WTAPSNE site, as the project progresses. The next dredge contract requires material to be placed within the southeast quadrant of the southernmost cell ("NE6") of WTAPSNE, with mound heights not to exceed an elevation of -30 feet MLLW. Dredged material placement is closely monitored and recorded by GPS, in accordance with USACE Dredge Quality Management requirements. All material placement contracts require pre- and post-placement bathymetric surveys of the placement sites to ensure compliance. Previously disturbed areas would be available for use by managed species for the majority of the time the project is underway. No substantially adverse, long-term effects to EFH are expected to occur as a result of the proposed project.

5. Although other federal, state and private sponsored projects occur in the project vicinity, these projects do not significantly affect the 16 species in this assessment and their associated EFH is expected to fully recover. It is expected that the dredged material placement locations would return to pre-placement conditions following the project activities, with an approximation that the benthic community would become recolonized within 1.5 years. SAV and shellfish beds would not be impacted by this project. Placement activities would occur in accordance with the anticipated York Spit Channel maintenance schedule, or as necessary as a result of shoaling from storm events and other environmental factors. The benthic community would have an opportunity to fully recover following each dredged material placement event and prior to the subsequent such event. Given the above factors, no substantially adverse cumulative effects to EFH are expected to result from this project.

In conclusion, the Baltimore District, after reviewing relevant fisheries information and analyzing potential project effects, has determined that the project would have a temporary adverse impact on EFH. However, the project would not have a substantial cumulative or long-term adverse effect on EFH, species with designated EFH in the project area, or their prey.

7 MITIGATION

For this proposal, a number of mitigation measures/best management practices are being implemented by USACE, to minimize effects to EFH, managed species, and their prey.

Disposal of dredged material would occur within the limits of the Wolf Trap Alternate Placement Site. No unconfined disposal of contaminated sediments would occur with implementation of the project.

The purpose of the proposed project is to provide additional dredged material placement area to minimize effects to female blue crab overwintering grounds. Available data indicate that the existing WTAPS placement site, particularly the southern portion, supports a significant fraction of the population of overwintering female blue crab within the lower Chesapeake Bay. By

proceeding with the proposed action, adverse effects to these overwintering female crabs would be greatly reduced, relative to the "no project" alternative. Although blue crab is not managed under the Magnuson-Stevens Act, minimizing impacts to blue crab mitigates EFH impacts for those managed fish species evaluated in this document for which blue crab is an important prey item.

To avoid/minimize adverse effects to ESA-listed sea turtles, USACE makes every effort to avoid dredging the York Spit Channel from September 1 through November 14, of any year. Therefore, if dredging doesn't occur during this period, dredged material placement would not occur at the project site. Furthermore, USACE generally seeks to perform this work in the winter and early spring, subject to availability of dredging contractors. This TOY would also help to avoid and minimize effects to sandbar shark HAPC used for pupping and nursery activities (occurring from May 1 to October 30).

Bottom-dump placement of dredged material typically produces mounded deposits on the bay bottom, and the thickness of such mounds and the force of impacting sediment will be lethal to benthic organisms within the footprint of the deposit. USACE considered requiring the contractor to smooth the deposits out to a roughly uniform thickness, but reworking the sediments in this way would be extremely costly, time consuming and likely ineffective. It would extend the duration of project disturbance, increase vessel traffic and emissions, and exacerbate turbidity. Moreover, distributing the sediments after placement would merely spread adverse effects over a much larger greater area. While it might result in somewhat-reduced mortality within the deposit footprint, it would greatly increase mortality and sublethal stress on benthic communities over a much larger area, and would result in delayed post-disturbance recovery and greater temporal loss of functions. If deposited "mounds" are left in place, natural tidal currents will gradually redistribute sediments, but this process would occur at a rate similar to that of natural sediment movements within the area, to which native benthic communities can acclimate with minimal risk of harm. For these reasons, USACE believes that spreading deposited material is not a viable measure to reduce project impacts, and would likely increase adverse effects to the benthic community.

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CLEAN WATER ACT SECTION 404(b)(1) EVALUATION

WOLF TRAP ALTERNATE OPEN WATER PLACEMENT SITE NORTHERN EXTENSION
VIRGINIA WATERS OF THE CHESAPEAKE BAY
OCTOBER 2019

Prepared by the U.S. Army Corps of Engineers, Baltimore District

I. PROJECT DESCRIPTION

A. LOCATION

The proposed Wolf Trap Alternate Open Water Placement Site Northern Extension (WTAPSNE) is an extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS), and is located in the lower Chesapeake Bay between the Piankatank River and Mobjack Bay, approximately five miles east of Mathews County, Virginia.

Coordinates for WTAPSNE in Degrees, Minutes, Seconds

Latitude	Longitude
76°09'56.72962"W	37°26'26"N
76°10'45.17785"W	37°21'48.49069"N
76°08'41.58373"W	37°26'26"N
76°09'30.11100"W	37°21'48.48148"N

B. GENERAL DESCRIPTION

The proposed action would establish an extension of WTAPS to the north, increasing the size of the placement site by approximately 3,900 acres. WTAPSNE would serve as an open water placement site for dredged material primarily from the York Spit Channel, but may also be used as a placement site for other dredging projects in the lower Chesapeake Bay pending evaluation. The WTAPSNE has been recommended by agencies of the Commonwealth of Virginia as an alternative to the currently-used WTAPS due to the potential for a high abundance of female blue crab to overwinter in the southern portion of WTAPS. Blue crab winter dredge survey data collected by the Virginia Institute of Marine Science (VIMS) between 2009 and 2016 indicate that WTAPSNE provides less suitable habitat for overwintering female blue crab than WTAPS. The proposed action does not include any changes to the historic maintenance dredging activities. The only change to the project is the proposed use of the placement site extension.

Approximately 2.6 million cubic yards (mcy) of dredged material from maintenance of the York Spit Channel would be placed into quadrant 1 of cell NE-6 in WTAPSNE during the initial placement event that is expected to begin in late fall of 2019. After initial placement into WTAPSNE, it is anticipated that approximately 1.5 mcy of dredged material from the York Spit Channel would be placed into the site approximately every 4 years, or until another alternate placement site or method is identified, approved, and implemented. Each

dredging cycle and the associated placement activities (mobilization to demobilization of the dredging operation) lasts for approximately 4½ months. Maintenance dredging would be allowed 24 hours per day and 7 days per week. Based on previous maintenance dredging, it is expected that approximately 15,000 cubic yards would be dredged per day, resulting in 2 to 5 loads of dredged material being placed at WTAPSNE per day. The USACE would make every effort to avoid placement into WTAPSNE during the dredge closure period for sea turtles, from September 1 through November 14.

A Dredged Material Management Plan (DMMP) update process for the Virginia Channels will be initiated in 2020. The DMMP framework is a consistent and logical procedure by which dredged material management alternatives can be identified, evaluated, screened, and recommended so that dredged material placement operations are conducted in a timely, environmentally sensitive, and cost-effective manner. Any consideration of future placement options will include opportunities for the public, stakeholders, and agencies to provide their ideas and concerns for material placement during a scoping period and opportunities to comment on the draft management plan. Additional study and design may be necessary at the conclusion of the DMMP process in order to implement the recommended placement plan.

C. AUTHORITY AND PURPOSE

The USACE is responsible for maintaining the Baltimore Harbor and Channels 50-Foot Navigation Project (50-Foot Project) to allow large, deep-draft commercial shipping vessels to safely navigate the Chesapeake Bay to and from Baltimore Harbor. The 50-Foot Project was authorized in Section 101 of the River and Harbor Act of 1970 and provides for a 50-foot-deep main shipping channel that extends from the Virginia Capes to Fort McHenry in Baltimore Harbor, Maryland, and a series of branch channels that provides access to various public and private terminals serving the Port of Baltimore.

The purpose of the proposed action is to provide a cost-effective, environmentally-acceptable placement site that that minimizes adverse impacts to overwintering female blue crab in response to a recommendation by agencies of the Commonwealth of Virginia. The proposed action is needed to provide a safe, reliable, and efficient channel to maintain waterborne commerce to and from the Port of Baltimore.

D. GENERAL DESCRIPTION OF THE DISCHARGE MATERIAL

(1) **General Characteristics of the Material** - Sediments that would be dredged from the northern part of York Spit Channel are predominantly comprised of silt and clays (79.5 percent) and are most similar to the sediments at WTAPS (78.4 percent silt/clay). Sediments from the southern part of the York Spit Channel are predominately comprised of sand (81.9 percent).

(2) **Quantity of Material (cubic yards)** - Approximately 2.6 mcy of dredged material from maintenance of the York Spit Channel would be placed into WTAPSNE during the initial placement event that is expected to occur in the late fall of 2019. After initial placement

into WTAPSNE, it is anticipated that approximately 1.5 mcy of dredged material from the York Spit Channel would be placed into the site approximately every 4 years. Based on previous maintenance dredging actions for the York Spit Channel, it is expected that dredging would generate roughly 15,000 cubic yards (cy) of material per day. However, the volume and frequency of dredged material placement events during maintenance dredging is a function of the rate of dredging production, the number of hopper vessels in use, and their size, speed and capacity. The thickness of the material that would be deposited in one cycle would range from 2 inches to 2 feet (ft) thick.

(3) **Source of Material** - York Spit Channel Maintenance Material

E. DESCRIPTION OF THE PROPOSED DISCHARGE SITE

(1) **Location** - Lower Chesapeake Bay between the Piankatank River and Mobjack Bay, approximately five miles east of Mathews County, Virginia. See coordinates in Section I(A) above.

(2) **Size (acres)** - 3,900

(3) **Type of Site (confined, unconfined, open water)** – open water

(4) **Type of habitat** - A flat, relatively featureless plain in the center of Chesapeake Bay with no submerged aquatic vegetation or shellfish beds. A deep channel runs lengthwise through the site.

(5) **Timing and Duration of Discharge** - The initial placement event is expected to occur in late fall of 2019. After initial placement, it is anticipated that dredged material will be placed into the site every 4 years, or until another alternate placement site or method is identified, approved, and implemented. Each dredging cycle and associated placement activity (mobilization to demobilization of the dredging operation) lasts for approximately 4½ months. Maintenance dredging would be allowed 24 hours per day and 7 days per week. The USACE would make every effort to avoid placement into WTAPSNE during the dredge closure period for sea turtles, from September 1 through November 14.

F. DESCRIPTION OF DISPOSAL METHOD

Dredged material would be placed into WTAPSNE using a hopper dredge. Dredged material would be dropped to the bottom of WTAPSNE through openings in the bottom of the hull. Upon placement, dredged material will partition into a main cloud, which will descend vertically. The main cloud would descend to the bottom at a high velocity, leaving behind a turbidity cloud.

Hopper dredge capacity is expected to range from 3,600 to 8,600 cy depending on the dredging contractor used. Depending on the size and types of vessels used, this would require the placement of 2 to 5 loads of dredged material at WTAPSNE per day during maintenance dredging periods.

II. FACTUAL DETERMINATIONS

A. PHYSICAL SUBSTRATE DETERMINATIONS

(1) **Substrate Elevation and Slope -** Water depths in WTAPSNE range from 23 ft to 55 ft mean lower low water (MLLW), with an average depth of 36 ft MLLW. A deep trough that reaches -55 feet MLLW runs lengthwise through the site.

(2) **Sediment Type -** WTAPSNE consists of two bottom types as defined by Wright et al., 1987: bay-stem plains and bay-stem channels. The beds of bay-stem plains and bay-stem channels are soft and consist of fine sediments. No sediment testing has been conducted by USACE in WTAPSNE. However, sediments found in WTAPS are expected to be similar to sediments found in WTAPSNE. Sediments in WTAPS are composed of very fine/fine sand and silts consistently throughout the entire site.

(3) **Dredged/Fill Material movement –** Upon placement, dredged material will partition into a main cloud, which will descend vertically. The main cloud would descend to the bottom at a high velocity, leaving behind a turbidity cloud. The thickness of the dredged material that would be deposited during one maintenance dredge cycle into WTAPSNE would range from 2 inches to 2 ft thick. The proposed action area is susceptible to wave-induced velocities that may cause sediments to become resuspended in the water column. The site is relatively shallow, with an average depth of 36 ft, and the area can experience wind speeds of 35 miles per hour or greater. The combination of water depth and high wind speeds may cause wave-induced velocities that could resuspend deposited materials. However, this generally occurs less than 48 hours per year. Material eroded out of this placement site would be expected to move northward in the Bay or locally to deeper parts of the Bay floor.

(4) **Physical Effects on Benthos (burial, changes in sediment type)** – The benthic community in WTAPSNE is characterized by opportunistic and equilibrium species that are adapted to and tolerant of bottom-disturbing events such as major storms. The existing community is also probably exposed to episodic oxygen stress and hypoxia, at least during some summers. Bottom-dump placement of dredged material typically produces mounded deposits on the Bay bottom, and the thickness of such mounds and the force of impacting sediment will be lethal to benthic organisms within the footprint of the deposit.

It is expected that the benthic community would recolonize within approximately one season, or at most 1.5 years (Schaffner, 2010). It is expected that the project would have minimal effect on the benthic communities. Many organisms would be able to burrow back to the surface, and recolonization would occur due to immigration from adjacent and nearby locations.

During the anticipated life of the project, successive dredged material placement events will raise the average bottom elevation within the project area from the current average of -36 feet MLLW, up to a maximum of -30 feet MLLW. The actual magnitude of this change

over time would be subject to rates of sedimentation within the York Spit Channel, as well as prevailing currents, major storms and other factors which affect the movement of sediments in the area. The relative change in depth would be greatest within the deep "trough" portion of WTAPSNE. The cumulative effects of this bathymetric change are not expected to constitute a substantially adverse effect on benthic communities. These depth changes may cause minor changes in the relative abundances of benthic taxa, but are not expected to fundamentally alter the benthic community type. Given that the deepest waters in the general vicinity of the project area are subject to seasonal hypoxia, it is possible that decreasing these depths, particularly within the trough, may reduce the frequency and severity of summer oxygen stress experienced by benthic organisms in those areas. The estimated decrease in average depths is based on current bathymetry and expected rates of dredging, and does not consider relative sea level changes. Recent climate models predict a relative rise in sea levels within the region which, regardless of magnitude, would have the effect at least partially offsetting the changes in depth caused by the project.

Short-term project effects to blue crab would consist primarily of direct mortality, by burial or asphyxiation, of overwintering female crabs, when these crabs are present within the dredged material placement area. Cold temperatures reduce the crabs' locomotor ability, and would make overwintering females susceptible to mortality by burial, especially in overburden thicknesses greater than 10cm.

When assessing the significance of this effect, however, it must be remembered that the WTAPSNE site is believed to support fewer overwintering female crabs than the currently-used WTAPS site. As previously discussed, a deep muddy channel runs through the center of WTAPSNE. According to the Dredge Disposal Effects on Blue Crab Report provided by VIMS, crab density will almost always be low in muddy habitats. It is likely that within the deeper, muddy channel, crab density will almost always be low due to the muddy habitat, which is usually avoided as an overwintering habitat by blue crabs (Lipcius and Knick, 2016).

(5) Actions Taken to Minimize Impacts – Attempting to flatten or spread out dredged material not appropriate.

B. WATER CIRCULATION, FLUCTUATION, AND SALINITY DETERMINATIONS

(1) **Water Quality**

(a) Salinity – Surface salinities vary from 10 to 24 parts per thousand (ppt), with an average of 17.9 ppt. Bottom salinities vary from 14 to 28 ppt, with an average of 22.2 ppt. No change in salinity expected.

(b) Water Chemistry - No change in water chemistry is expected.

(c) Clarity – Temporary change in water clarity expected during placement activities due to an increase in turbidity. No long-term change expected.

(d) Color – Temporary change in water color expected during placement activities due to an increase in turbidity. No long-term change expected.

(e) Odor – No change expected.

(f) Taste – Not applicable.

(g) Dissolved Oxygen Levels – In WTAPSNE, bottom dissolved oxygen levels reach hypoxic levels near 4 milligrams/liter (mg/l) during the summer months while the surface dissolved oxygen remains above hypoxic levels at 6 mg/l during the summer months. During the winter months, both the surface and the bottom dissolved oxygen levels remain above hypoxic levels with a typical range of 8 to 12 mg/l at the bottom and a range of 10 to 12 mg/l at the surface. Minor temporary localized change in dissolved oxygen expected near depositional sites in warm water months. Negligible DO effects at other times of year.

(h) Nutrients – Minor and temporary mobilization of nutrients (nitrogen and phosphorus) would occur during placement activities and subsequent movement of placed material by currents.

(i) Eutrophication – Not expected to occur.

(j) Temperature – Fluctuates widely throughout the year. Temperatures in WTAPSNE range from 4°C in February to 25°C in July. No change in temperature expected.

(2) **Current Patterns and Circulation**

(a) Current Patterns and Flow – Currents are generally slow and scattered across the site. A trough runs lengthwise through the site, but there is no defined channel that carries water through the site. No change in current patterns or circulation expected.

(b) Velocity - Currents within the bay are generally slow, primarily less than 1.6 ft/second. Minor changes in current velocity where placed materials forms local flow obstacles. Gradually reworking and flattening of mounds by currents would reduce this.

(c) Stratification – Strong seasonal stratification. During warm water months salty/cool oceanic water at bottom, fresher/warmer estuarine/riverine water at top, although then with some occasional mixing from strong winds. No changes in stratification are expected.

(d) Hydrologic Regime – WTAPSNE influenced by both river flow toward the Atlantic Ocean and the Atlantic Ocean flowing into the bay with the tides. No change expected to the hydrologic regime.

(3) **Normal Water Level Fluctuations** – Semi-diurnal lunar tide with a tidal range of 0.66 ft to 2.95 ft. The mean tidal range in the bay is approximately 2.6 ft. No change in water levels expected.

(4) **Salinity Gradients** - Varies from season to season and year to year depending largely on the amount of freshwater flowing into the Chesapeake Bay. Surface salinities vary from 10 to 24 parts per thousand (ppt), with an average of 17.9 ppt. Bottom salinities vary from 14 to 28 ppt, with an average of 22.2 ppt. No change in salinity expected.

(5) **Actions that will be taken to Minimize Impacts** – No actions will be taken to minimize impacts to water quality. Water quality impacts during open water placement activities are expected to be temporary, minimal and similar to conditions of past placement events in WTAPS. The project vicinity has historically been used for the placement of

dredged material since the 1950's. No measurable changes in temperature, salinity, oxygen content or other chemical characteristics are expected. Suspended particles are expected to settle out within a short time, with no long-term measurable effects on water quality. Placement during winter would serve to mitigate impacts by inducing less potential impact to DO than during warm water months because of reduced biological/chemical oxygen demand.

C. SUSPENDED PARTICULATE/TURBIDITY DETERMINATIONS

(1) **Expected Changes in Suspended Particulates and Turbidity Levels in the Vicinity of the Disposal Site** - Open water placement activities are expected to create some degree of turbidity in excess of ambient conditions up to 6,500 ft from the discharge location. During placement activities, suspended sediment levels can be as high as 500 mg/l within 250 feet of the discharge location, decreasing to background levels (i.e., 15 to 100 mg/l depending on location and sea conditions) within 1,000 to 6,500 feet of the discharge location.

(2) **Effects on Chemical and Physical Properties of the Water Column**

(a) Light Penetration – Temporary effects due to turbidity during placement activities. No long-term changes expected.

(b) Dissolved Oxygen - Bottom dissolved oxygen levels reach hypoxic levels below 4 milligrams/liter (mg/l) during the summer months while the surface dissolved oxygen remains healthier levels at 6 mg/l during the summer months. During the winter months, both the surface and the bottom dissolved oxygen levels are higher with a typical range of 8 to 12 mg/l at the bottom and a range of 10 to 12 mg/l at the surface. No change in DO expected.

(c) Toxic Metals and Organics - Metals of concern and polycyclic aromatic hydrocarbons (PAHs) in the sediments dredged from the York Spit Channel occur at low levels, and would likely settle out onto the bottom remaining adsorbed to sediment and not be released into the water column.

(d) Pathogens – No change expected.

(e) Aesthetics – A temporary and minor reduction in aesthetic value is expected to occur during placement activities from turbidity. No long-term effects expected.

(f) Temperature - Fluctuates widely throughout the year. Temperatures range from 4°C in February to 25°C in July. No change in temperature expected.

(3) **Actions taken to Minimize Impacts** - Total suspended solids (TSS) concentrations near the center of the plume created by the placement of dredged material have been observed to reach near background levels in 35 to 45 minutes. Furthermore, the high flushing rate (due to the water exchange and tidal fluctuations) of the Chesapeake Bay is anticipated to cause turbidity plumes to be quickly dispersed, with no long-term measurable impacts to water quality.

D. CONTAMINANT DETERMINATIONS

No hazardous waste, brownfields, voluntary remediation programs, or federal Superfund sites are located in or adjacent to WTAPSNE. Dredged material from the York Spit

Channel placed into WTAPSNE would not be toxic to marine life. Metals of concern and PAHs occur at low levels, and would likely settle out onto the bottom remaining adsorbed to sediment and would not be released into the water column.

E. AQUATIC ECOSYSTEM AND ORGANISM DETERMINATIONS

(1) **Effects on Plankton and Nekton** – Negligible impacts. Demersal nekton destroyed in areas of rapid thick placement. Populations would recover.

(2) **Primary Production, Photosynthesis** - Any turbidity generated during placement activities may reduce photosynthesis within the limit of disturbance area. No long-term effects expected.

(3) **Effects on Benthos** - This benthic community in WTAPSNE is characterized by opportunistic and equilibrium species that are adapted to and tolerant of bottom-disturbing events such as major storms and flows. The existing community is also probably exposed to episodic oxygen stress and hypoxia, at least during some summers. Bottom-dump placement of dredged material typically produces mounded deposits on the Bay bottom, and the thickness of such mounds and the force of impacting sediment will be lethal to benthic organisms within the footprint of the deposit. It is expected that the dredged material placement locations would return to pre-placement conditions following the project activities, with an approximation that the benthic community would become recolonized within 1.5 years. Placement activities would occur in accordance with the anticipated York Spit Channel maintenance schedule, or as necessary as a result of shoaling from storm events and other environmental factors. The benthic community would have an opportunity to fully recover following each dredged material placement event and prior to the subsequent such event.

(4) **Effects on Aquatic Food Web** – No change expected.

(5) **Effects on Special Aquatic Sites**

(a) Sanctuaries and Refuges – The WTAPSNE is located in a blue crab sanctuary designated by the Commonwealth of Virginia. The sanctuary, generally located in water more than 35 feet deep, is closed to crabbing from June 1 through Sept. 15 each year, a time frame that corresponds with the crab's spawning season. The WTAPSNE is believed to support significantly fewer overwintering female crabs than the currently-used WTAPS site, and thus the project would constitute, overall, a net reduction of the effect to blue crab.
(b) Wetlands – Not applicable.
(c) Mud Flats – Not applicable.
(d) Vegetated Shallows – Not applicable.
(e) Coral Reefs – Not applicable.
(f) Riffle and Pool Complexes – Not applicable.

(6) **Threatened and Endangered Species** - Effects from the continued placement in WTAPS on threatened and endangered species was assessed in the 2018 National Marine

Fisheries Service (NMFS) Biological Opinion (BO) (F/NER/2018/14816). Activities covered under this BO included the construction and maintenance of the Chesapeake Bay Entrance channels and use of the associated dredged material placement sites. In the BO, NMFS concluded that that these activities may adversely affect, but are not likely to jeopardize the continued existence of any distinct population segment (DPS) of Atlantic sturgeon, Kemp's ridley or green sea turtles or the Northwest Atlantic DPS of loggerhead sea turtles, and is not likely to adversely affect leatherback sea turtles, hawksbill sea turtles, shortnose sturgeon, fin whales, sei whales, blue whale, sperm whales, and North Atlantic right whales. The BO acknowledged a certain number of incidental take of listed species over the life of the project (50 years). The BO also included reasonable and prudent measures designed to minimize and monitor the impact of incidental take that might otherwise result from the activities including a time-of-year (TOY) restriction for dredging. To minimize adverse impacts to sea turtles, USACE makes every effort to avoid dredging in the York Spit Channel from September 1 through November 14 in accordance with the BO. USACE, in coordination the NMFS, determined that the effects on listed species from placement of dredged material in WTAPSNE are similar to the effects considered in the 2018 NMFS BO. Therefore, USACE determined that re-initiation with NMFS was not warranted. Coordination with NMFS is currently ongoing.

(7) **Other Wildlife -** Short-term project effects to blue crab would consist primarily of direct mortality, by burial or asphyxiation, of overwintering female crabs, when these crabs are present within the dredged material placement area. Turbidity would result in suspended particulates within the water column and may temporarily degrade ambient water quality for nutrients, dissolved oxygen content, and other constituents. Turbidity may also clog the gills of fishes and invertebrates within the turbidity plume. Anoxic dredged materials may also contain chemically-reduced sediments which, at least in some circumstances, produce significant chemical oxygen demand within ambient waters at the site of disposal. In practice, however, this effect is generally mitigated by the entrainment of oxygen-rich surficial waters during overboard placement and by tidal mixing. Cold temperatures reduce the crabs' locomotor ability, and would make overwintering females susceptible to mortality by burial, especially in overburden thicknesses greater than 10cm. When assessing the significance of this effect, however, it must be remembered that the WTAPSNE is believed to support significantly fewer overwintering female crabs than the currently-used WTAPS site, and thus the project would constitute, overall, a net reduction of the effect to blue crabs.

(8) **Actions to Minimize Impacts** –

Blue Crab

Available data indicate that WTAPS, particularly the southern portion, supports a significant fraction of the population of overwintering female blue crab within the lower Chesapeake Bay. By proceeding with the proposed action (WTAPSNE), adverse effects to these overwintering female crabs would be greatly reduced, relative to continued placement only in WTAPS. Although blue crab is not managed under the Magnuson-Stevens Act, minimizing impacts to blue crab mitigates Essential Fish Habitat impacts for

those managed fish species evaluated in this document for which blue crab is an important prey item.

Placement of dredged material into WTAPS while female crabs are not overwintering (generally from early April to mid-November) is not feasible due to higher costs to dredge in the summer and potential adverse impacts to sea turtles. A hopper dredge is the preferred dredge method because it is more cost efficient and generally performs better than other dredge types in rough sea conditions. A hopper dredge removes material from the bottom of the channel in thin layers with hydraulic pressure. Sea turtles are generally present in the lower Chesapeake Bay from April through November. Sea turtles are vulnerable to entrainment in the draghead of the hopper dredge when they are likely to be feeding or resting on the bay bottom. Measures can be taken to minimize adverse impacts to sea turtles including the use of a mechanical dredge instead of a hopper dredge. Mechanical dredging entails removing material by scooping it from the channel bottom using an open bucket or clamshell and then placing it on a barge. It is unlikely that sea turtles would be captured in the mechanical dredge, presumably because they are able to avoid the dredge bucket. However, it is more cost effective to use a hopper dredge than a mechanical dredge. Therefore, because a hopper dredge is more cost effective and to minimize adverse impacts to sea turtles that may be entrained in a hopper dredge, dredging and placement is conducted in the winter months.

Sea Turtles

To avoid/minimize adverse effects to Endangered Species Act (ESA)-listed sea turtles, USACE makes every effort to avoid dredging the York Spit Channel from September 1 through November 14, of any year. Therefore, dredged material placement would not occur in WTAPSNE during this period. Furthermore, USACE generally seeks to perform this work in the winter and early spring, subject to availability of dredging contractors. This TOY would also help to avoid and minimize effects to sandbar shark habitat area of particular concern used for pupping and nursery activities (occurring from May 1 to October 30).

Benthic Organisms

Bottom-dump placement of dredged material typically produces mounded deposits on the bay bottom, and the thickness of such mounds and the force of impacting sediment will be lethal to benthic organisms within the footprint of the deposit. USACE considered requiring the contractor to smooth the deposits out to a roughly uniform thickness, but reworking the sediments in this way would be extremely costly, time consuming and likely ineffective. It would extend the duration of project disturbance, increase vessel traffic and emissions, and exacerbate turbidity. Moreover, distributing the sediments after placement would merely spread adverse effects over a much larger greater area. While it might result in somewhat-reduced mortality within the deposit footprint, it would greatly increase mortality and sub-lethal stress on benthic communities over a much larger area, and would result in delayed post-disturbance recovery and greater temporal loss of functions. If deposited “mounds” are left in place, natural tidal currents will gradually redistribute sediments, but this process would occur at a rate similar to that of natural sediment movements within the area, to which native benthic communities can acclimate with

minimal risk of harm. For these reasons, USACE believes that spreading deposited material is not a viable measure to reduce project impacts, and would likely increase adverse effects to the benthic community.

F. PROPOSED DISPOSAL SITE DETERMINATIONS

(1) **Mixing Zone Determination –** Open water placement activities are expected to create some degree of turbidity in excess of ambient conditions up to 6,500 ft from the discharge location. During placement activities, suspended sediment levels can be as high as 500 mg/l within 250 feet of the discharge location, decreasing to background levels (i.e., 15 to 100 mg/l depending on location and sea conditions) within 1,000 to 6,500 feet of the discharge location.

(2) **Determination of Compliance with Applicable Water Quality Standards –** On October 30, 2013, the Commonwealth of Virginia issued a Virginia Water Protection Permit (13-0593) and a Section 401 Water Quality Certification for maintenance dredging of the York Spit Channel and for placement of dredged material into WTAPS. The permit and WQC expires on October 29, 2028. In a letter dated 17 September 2019, the Commonwealth of Virginia stated that the section 401 WQC requirements were met through the CZM conditional consistency determination provided by VADEQ on 17 September 2019.

(3) **Potential Effects on Human Use Characteristic**

(a) Municipal and Private water Supply – Not applicable.

(b) Recreational and Commercial Fisheries - Recreational and commercial fishing vessels would not be able to access the waters of WTAPSNE during placement activities. Fish may temporarily leave the area during placement activities. However, impacts to recreational and commercial fisheries will be minor and temporary and the public will be able to access the area shortly after placement activities occur.

(c) Water Related Recreation – The public would not be able to access the area for water-related recreational activities during placement activities. The public will be able to access the area shortly after placement activities occur.

(d) Aesthetics - Temporary presence of a hopper dredge would occur. However, the proposed vessel presence is characteristic of the area and is consistent with vessel activity during dredging projects for the Baltimore Harbor and Channels project.

(e) Parks, Nation and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves – Not applicable.

G. DETERMINATION OF CUMULATIVE EFFECTS ON THE AQUATIC ECOSYSTEM

Historical use of open water placement sites within the lower Chesapeake Bay has been necessary to accommodate large volumes of dredged material from the Baltimore Harbor and Channels Project. The project vicinity has historically been used for the placement of

dredged material since the early 1960s. The proposed action would not create new or additional impacts, relative to the No-Action Alternative. The volumes, frequency, and acreage impacted by placement activities during any given dredging cycle of the York Spit Channel would not change. It would merely expand the allowable placement area, to enable dredged material to be placed in the northern extension area, and thereby mitigate adverse impacts on overwintering female blue crabs that currently occurs under the No-Action Alternative. Therefore, no adverse cumulative impacts are anticipated as a result of the proposed action.

There are efforts underway by many entities to improve water quality in the Chesapeake Bay through a Total Maximum Daily Load (TMDL). Positive trends in Bay water quality would not be impacted by placement activities.

H. DETERMINATION OF SECONDARY EFFECTS ON THE AQUATIC ECOSYSTEM

Secondary effects to aquatic organisms are expected to occur to aquatic organisms due to the placement of dredged material in WTAPSNE. However, these impacts would be minor and temporary. No long-term secondary effects from the proposed project are expected.

III. FINDINGS OF COMPLIANCE OR NON-COMPLIANCE WITH RESTRICTIONS ON DISCHARGE

a. Adaptation of the Section 404(b) (1) Guidelines to this Evaluation – No adaptations of the guidelines were made relative to the evaluation.

b. Evaluation of Availability of practicable Alternatives to the Proposed Discharge Site Which would have Less Adverse impact on the Aquatic Ecosystem - In addition to a "no action" plan (continued placement into WTAPS), two alternatives were evaluated. The alternatives included an extension of WTAPS and deferred maintenance dredging of the York Spit Channel.

c. Compliance With Applicable State Water Quality Standards – In full compliance.

d. Compliance with Applicable Toxic Effluent Standard or Prohibition under Section 307 of the Clean Water Act – Not applicable.

e. Compliance with Endangered Species Act of 1973 - Effects from the continued placement in WTAPS on threatened and endangered species was assessed in the 2018 NMFS BO (F/NER/2018/14816). Activities covered under this BO included the construction and maintenance of the Chesapeake Bay Entrance channels and use of the associated dredged material placement sites. In the BO, NMFS concluded that that these activities may adversely affect, but are not likely to jeopardize the continued existence of any distinct population segment (DPS) of Atlantic sturgeon, Kemp's ridley or green sea turtles or the Northwest Atlantic DPS of loggerhead sea turtles, and is not likely to adversely affect leatherback sea turtles, hawksbill sea turtles, shortnose sturgeon, fin

whales, sei whales, blue whale, sperm whales, and North Atlantic right whales. The BO acknowledged a certain number of incidental take of listed species over the life of the project (50 years). The BO also included reasonable and prudent measures designed to minimize and monitor the impact of incidental take that might otherwise result from the activities including a TOY restriction for dredging. To minimize adverse impacts to sea turtles, USACE makes every effort to avoid dredging in the York Spit Channel from September 1 through November 14 in accordance with the BO. USACE, in coordination the NMFS, determined that the effects on listed species from placement of dredged material in WTAPSNE are similar to the effects considered in the 2018 NMFS BO. Therefore, USACE determined that re-initiation with NMFS was not warranted. Coordination with NMFS is currently ongoing.

f. Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972 - Not applicable.

g. Evaluation of the Extent of Degradation of the Waters of the United States – No significant adverse impacts to the diversity of the aquatic ecosystem, productivity and stability, and recreation, aesthetics and economic values will occur as a result of the proposed project.

h. Appropriate and Practicable Steps taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem

(i) Bottom-dump placement of dredged material typically produces mounded deposits on the bay bottom, and the thickness of such mounds and the force of impacting sediment will be lethal to benthic organisms within the footprint of the deposit. USACE considered requiring the contractor to smooth the deposits out to a roughly uniform thickness, but reworking the sediments in this way would be extremely costly, time consuming and likely ineffective. It would extend the duration of project disturbance, increase vessel traffic and emissions, and exacerbate turbidity. Moreover, distributing the sediments after placement would merely spread adverse effects over a much larger area. While it might result in somewhat-reduced mortality within the deposit footprint, it would greatly increase mortality and sub-lethal stress on benthic communities over a much larger area, and would result in delayed post-disturbance recovery and greater temporal loss of functions. If deposited "mounds" are left in place, natural tidal currents will gradually redistribute sediments, but this process would occur at a rate similar to that of natural sediment movements within the area, to which native benthic communities can acclimate with minimal risk of harm. For these reasons, USACE believes that spreading deposited material is not a viable measure to reduce project impacts, and would likely increase adverse effects to the benthic community.

(ii) No actions will be taken to minimize impacts to water quality. Water quality impacts during open water placement activities are expected to be temporary, minimal and similar to conditions of past placement events in WTAPS. The project vicinity has historically been used for the placement of dredged material

since the 1950's. No measurable changes in temperature, salinity, oxygen content or other chemical characteristics are expected. Suspended particles are expected to settle out within a short time, with no long-term measurable effects on water quality.

(iii) Available data indicate that WTAPS, particularly the southern portion, supports a significant fraction of the population of overwintering female blue crab within the lower Chesapeake Bay. By proceeding with the proposed action (WTAPSNE), adverse effects to these overwintering female crabs would be greatly reduced, relative to continued placement only in WTAPS. Although blue crab is not managed under the Magnuson-Stevens Act, minimizing impacts to blue crabs mitigates Essential Fish Habitat impacts for those managed fish species evaluated in this document for which blue crab is an important prey item.

(iv) To avoid/minimize adverse effects to Endangered Species Act (ESA)-listed sea turtles, USACE makes every effort to avoid dredging of the York Spit Channel from September 1 through November 14, of any year. Therefore, if dredging does not occur during the time period, dredged material placement would not occur in WTAPSNE. Furthermore, USACE generally seeks to perform this work in the winter and early spring, subject to availability of dredging contractors. This TOY would also help to avoid and minimize effects to sandbar shark habitat area of particular concern used for pupping and nursery activities (occurring from May 1 to October 30).

i. On the Basis of the Guidelines the proposed Disposal Site(s) for the Discharge of Dredged or Fill Material is: Specified as complying with the requirements of these guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects on the aquatic ecosystem.

References

Lipcius, R.N. and K.E. Knick. 2016. Dredge Disposal Effects on Blue Crab. Virginia Institute of Marine Science.

Schaffner, L.C. 2010. Patterns and Rates of Recovery of Macrobenthic Communities in a Polyhaline Temperate Estuary Following Sediment Disturbance: Effects of Disturbance Severity and Potential Importance of Non-local ProcessesEstuaries and Coasts. 33: 1300.

PROGRAMMATIC AGREEMENT
BETWEEN
THE U.S. ARMY CORPS OF ENGINEERS, BALTIMORE DISTRICT
AND
THE VIRGINIA STATE HISTORIC PRESERVATION OFFICER
REGARDING
THE WOLF TRAP ALTERNATE PLACEMENT SITE NORTHERN EXTENSION PROJECT

WHEREAS, the U.S. Army Corps of Engineers, Baltimore District (USACE) proposes to establish the Wolf Trap Alternate Placement Site Northern Extension (WTAPSNE site) to place dredge material from routine operation and maintenance of the York Spit Channel located in the Chesapeake Bay approximately four (4) miles southeast of Bethel Beach, Mathews County, Virginia (Project; Department of Historic Resources [DHR] Review No. 2019-0196); and,

WHEREAS, the Project is a federally funded undertaking, and therefore subject to the requirements of Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108; Section 106); and,

WHEREAS, the USACE has consulted about the Project with the DHR, which serves as the Virginia State Historic Preservation Office (SHPO), pursuant to 36 CFR Part 800, the regulations implementing Section 106; and,

WHEREAS, the USACE, in consultation with the SHPO, has established the Project's direct Area of Potential Effects (APE) as encompassing the WTAPSNE site, divided into six cells, (Appendix A);and,

WHEREAS, the USACE conducted a Phase I underwater archaeological survey of the Project's direct APE which identified ten (10) remote-sensing targets that have the potential to contain historic properties recorded as archaeological sites 44MT0175 through 44MT0184 inclusive, and two (2) potential relic channels indicative of potential pre-contact living surfaces; and,

WHEREAS, archaeological site 44MT0184 is located adjacent to Cell NE-5 and was identified as the former steam yacht Polynia, which was converted to a barge and sunk in 1917; and,

WHEREAS, Phase II Evaluation of the ten (10) identified archaeological sites cannot be conducted at this time due to schedule and contract constraints. Additionally, the Project cannot be limited to Cell NE-6 as this would eliminate flexibility for material placement needed for potential overwintering female blue crab population movement into the northern extension in the future; and,

WHEREAS, none of the identified archaeological sites have been evaluated for their eligibility for listing on the National Register of Historic Places (NRHP); and,

WHEREAS, the USACE, in consultation with the SHPO and other consulting parties, has determined that the ten (10) identified archaeological sites should be avoided by a minimum distance of fifty (50) meters (one hundred sixty-four [164] feet), and, if avoidance is not feasible, the USACE shall then conduct a Phase II archaeological investigations of any affected sites to assess their eligibility for the NRHP; and,

WHEREAS, the USACE has provided the SHPO and other consulting parties an opportunity to review and comment on the Phase I underwater archaeology report, and the SHPO concurred with its findings (letter dated September 6th, 2019); and,

WHEREAS, the USACE, in consultation with the SHPO and other consulting parties, has determined that the Project has the potential to cause adverse effects to recorded archaeological sites which may be eligible for listing in the NRHP; and,

WHEREAS, the USACE, in consultation with the SHPO and other consulting parties, has determined that Cell NE-6 (Appendix A) does not contain any submerged NRHP-eligible archaeological sites and no historic properties will be directly affected by the placement of dredge material in Cell NE-6; and,

WHEREAS, the USACE anticipates that any visual, auditory, or other indirect effects for the undertaking will be temporary and not adverse; and,

WHEREAS, the USACE intends to utilize Cell NE-6 for dredge material placement at this time; and,

WHEREAS, 36 CFR § 800.14(b)(1)[ii] allows federal agencies to fulfill their obligations under Section 106 through the development and implementation of programmatic agreements when effects on historic properties cannot be determined prior to approval of an undertaking; and,

WHEREAS, in accordance with 36 CFR § 800.14(b), the USACE has notified the Advisory Council on Historic Preservation (ACHP) of its intention to develop this Programmatic Agreement (Agreement), pursuant to 36 CFR § 800.14(b)(1)(ii) (e106 submission dated August 5th, 2019), and the ACHP has chosen not to participate in the consultation (letter dated August 20th, 2019); and,

WHEREAS, in accordance with 36 CFR § 800.14(b)(2)(i) the USACE has invited the Delaware Nation and the Pamunkey Indian Tribe to consult on and sign this Agreement as concurring parties and they have declined to participate or have not responded; and,

WHEREAS, in accordance with 36 CFR § 800.2(c)(3) the USACE has invited Mathews County to consult on and sign this Agreement as a concurring party and they have declined to participate or have not responded; and,

WHEREAS, in accordance with 36 CFR § 800.2(c)(5) the USACE has invited the Mathews County Historical Society to consult on and sign this Agreement as concurring parties and

they have accepted/declined to participate or have not responded; and,

WHEREAS, in accordance with 36 CFR § 800.2(c)(5) the USACE has invited the Naval History and Heritage Command and the Mariners' Museum and Park to consult on and sign this Agreement as a concurring party and they have elected to participate; and,

WHEREAS, in accordance with 36 CFR § 800.2(d), the USACE has solicited public comments on the Project through an Environmental Assessment that was submitted for public review in July 2019, and no comments were received regarding historic properties; and,

WHEREAS, the Project was advertised in the Newport News Daily Press on Sunday, July 21st, 2019, the Gloucester-Matthews Gazette-Journal on Thursday, July 25th, 2019, and the Hampton Daily Press on Saturday, September 14th, 2019, and no comments were received regarding historic properties.

NOW, THEREFORE, the USACE and the SHPO **(**Signatories) agree that the Project shall be implemented in accordance with the following stipulations in order to take into account the effects of the Project on historic properties:

STIPULATIONS

The USACE shall ensure that the following measures are carried out:

I. PLACEMENT OF DREDGED MATERIAL IN CELL NE-6

A. Cell NE-6

The USACE shall only place dredged material in Cell NE-6 (Appendix A) of the WTAPSNE site at this time. No historic properties have been documented within Cell NE-6; therefore, the placement of dredged material here will have no effect on historic properties.

B. Future Dredged Material Placement

If, in the future, the USACE proposes to place dredged material in the WTAPSNE site outside of Cell NE-6, the USACE shall adhere to Stipulation II below.

II. PLACEMENT OF DREDGED MATERIAL OUTSIDE CELL NE-6

A. Notification

If, in the future, the USACE proposes to place dredged material outside of Cell NE-6, USACE shall notify the SHPO and other consulting parties within thirty (30) days of the decision to do so.

B. Consultation Requirements

Prior to implementation of the proposed placement of dredge material outside of Cell NE-6, the USACE shall consult with the SHPO and other consulting parties to determine if the proposed placement will have an effect on any of the submerged archaeological sites within the Project's APE. If the proposed placement would affect the previously identified archaeological sites, and avoidance is not a practicable alternative, the USACE shall:

1. Prepare a Scope of Work (SOW) to submit to the SHPO and other consulting parties for review and comment. The SOW shall outline and describe Phase II underwater archaeological evaluation efforts to be conducted on any affected archaeological site. The SOW shall also describe reporting protocols in accordance with the guidelines set forth in Stipulation III.B of this Agreement. Pursuant to Stipulation III.B, the USACE shall provide the SHPO and other consulting parties an opportunity to review and comment on the SOW.

2. Conduct Phase II underwater archaeological evaluations on any affected archaeological site as outlined in the SOW discussed in Stipulation II.B.1, employing methods equivalent or superior to those used in SEARCH's 2019 survey of the WTAPSNE site. The evaluations shall be conducted by a qualified maritime archaeologist meeting the standards set forth in Stipulation VI.B, and shall be conducted in accordance with the guidelines set forth in Stipulations III.A and VI. If any affected archaeological site is associated with the NHHC, the NHHC Guidelines for Archaeological Field Practices will be utilized. The evaluations shall be conducted to determine the potential NRHP eligibility of any affected archaeological site.

3. Prepare a report that describes the findings and recommendations of the Phase II underwater archaeological evaluations. The report shall be prepared in accordance with Stipulations III.A and VI.C. Pursuant to Stipulation III. B, the USACE shall provide the SHPO and other consulting parties the opportunity to review and comment on the results.

C. Assessment of Effects

If archaeological sites meeting the criteria for listing on the NRHP are identified as a result of the activities described in Stipulation II.B.2, the USACE shall assess the effects of the Project on these sites in a manner consistent with 36 CFR §800.5, and submit its findings to the SHPO and other consulting parties for its review and concurrence pursuant to Stipulation III.B.

D. Treatment of Archaeological Sites Determined Eligible for Listing on the NRHP

1. If the USACE, in consultation with the SHPO and other consulting parties, determines that an archaeological site eligible for listing on the NRHP will be adversely affected by the Project, the USACE, in consultation with the SHPO and

other consulting parties, shall determine whether avoidance or minimization of the adverse effects is practicable. If the adverse effects cannot be practicably avoided, the USACE, in consultation with the SHPO and other consulting parties, shall develop a treatment plan for the archaeological site. In a manner consistent with Stipulation III.B of this Agreement, the USACE shall provide the SHPO and other consulting parties the opportunity to review and concur with the treatment plan.

2. Any treatment plan the USACE develops for an archaeological site under the terms of this Stipulation shall be consistent with the requirements of Stipulation VI.A and shall include, at a minimum:

    a. Information on the portion of the site where data recovery or controlled site burial, as appropriate, is to be carried out, and the context in which the site is eligible for the NRHP;

    b. The results of previous research relevant to the Project;

    c. Research problems or questions to be addressed, with an explanation of their relevance and importance;

    d. The field and laboratory analysis methods to be used, with a justification of their cost-effectiveness and how they apply to this particular site and the research needs;

    e. The methods to be used in artifact, data, and other records management;

    f. Arrangements for presenting to the public the research findings, focusing particularly on the community or communities that may have interests in the results;

    g. The curation of recovered materials and records resulting from the data recovery in accordance with 36 CFR Part 79;

    h. The conservation of recovered materials, as applicable; and

    i. Procedures for evaluating and treating discoveries of unexpected human remains during the course of the Project, including necessary consultation with other parties.

3. The USACE shall ensure the treatment plan is implemented and that any agreed-upon data recovery field operations have been completed before dredged material placement activities associated with the Project are initiated at or near the affected site. The USACE shall notify the SHPO and other consulting parties once data recovery field operations have been completed so that a site visit may be scheduled, if the SHPO and other consulting parties find a visit appropriate. The USACE shall ensure that the archaeological site form on file in the SHPO's Virginia Cultural

Resources Information System (V-CRIS) is updated to reflect the implementation of the treatment plan for each affected site.

4. Pursuant to Stipulation III. B, the USACE shall provide the SHPO and other consulting parties the opportunity to review and comment on the results of the implementation of any treatment plan prepared under this Agreement via a technical report prepared in accordance with Stipulation III. A.

III. PREPARATION AND REVIEW OF DOCUMENTS

A. Technical Preparation

All archaeological studies, technical reports, and treatment plans prepared pursuant to this Agreement shall be consistent with the federal standards entitled *Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44716-44742, September 29, 1983), the SHPO's *Guidelines for Conducting Historic Resources Survey in Virginia* (September 2017), and the ACHP's *Recommended Approach for Consultation on Recovery of Significant Information from Archaeological Sites* (1999), or subsequent revisions or replacements to these documents.

B. Review

The SHPO and other consulting parties agree to provide comments to the USACE on all technical materials, findings, and other documentation arising from this Agreement within thirty (30) calendar days of receipt unless otherwise specified. If no comments are received from the SHPO and other consulting parties within the thirty (30) calendar-day review period, the USACE may assume that the non-responsive party has no comment. The USACE shall take into consideration all comments received in writing from the SHPO and other consulting parties within the thirty (30) calendar-day review period.

C. Physical Documents

The USACE shall provide the SHPO two (2) copies, one (1) hard copy comb-bound on acid-free paper and one (1) in Adobe (R) Portable Document Format (.pdf) on compact disk of all final reports prepared pursuant to this Agreement. The USACE shall also provide the other consulting parties all final reports in a format of their choosing.

IV. CURATION STANDARDS

The USACE shall ensure that all original archaeological records (research notes, field records, maps, drawings, and photographic records) and all archaeological collections recovered from the USACE Project area produced as a result of implementing the Stipulations of this Agreement are provided to the SHPO for permanent curation. In exchange for its standard collections management fee as published in the *Virginia Department of Historic Resources State Collections Management Standards* (June 26, 2009), or subsequent revisions or replacements to that document, the SHPO agrees to maintain such

records and collections in accordance with 36 CFR 79, *Curation of Federally Owned and Administered Archaeological Collections*.

V. CHANGES IN PROJECT SCOPE

In the event of any changes to the Project scope that may alter the APE, the USACE shall consult with the SHPO and other consulting parties pursuant to 36 CFR § 800.2 through § 800.5.

VI. STANDARDS

A. Research Standards

All work carried out pursuant to this Agreement shall the *Secretary of the Interior's Standards for Archaeology and Historic Preservation* (SOI's Standards: http://www.nps.gov.history/local-law/arch_stnds_9.htm) and, if applicable, the NHHC Guidelines for Archaeological Field Practices.

VII. PROFESSIONAL STANDARDS

The USACE shall ensure that all work carried out pursuant to this Agreement shall be done by or under the direct supervision of marine archaeology professionals who meet the *Secretary of Interior's Professional Qualifications Standards.* The USACE shall ensure that consultants retained for services pursuant to this Agreement meet these standards.

VIII. SUNKEN MILITARY CRAFT

If at any point in the Project, the USACE discovers or reasonably believes that a Department of the Navy sunken military craft or part thereof will be disturbed or otherwise affected in the course of the Project, the USACE shall immediately notify the NHHC. The USACE shall provide the NHHC with a reasonable opportunity to accomplish the following:

A. In relation to Stipulation II.B, review and provide concurrence on the USACE identification of archaeological sites eligible for listing on the NRHP within the APE of the Project.

B. In relation to Stipulation II.B(2), review and provide concurrence on the evaluation of any such historic property, as opposed to review and comment on a report of the USACE findings.

C. In relation to Stipulation II.C, review and provide concurrence on the USACE assessment of effects of the Project, as opposed to review and comment on the USACE assessment.

D. In relation to Stipulation II.D(1), in consultation with the USACE and with the SHPO, determine whether avoidance or minimization of the adverse effects on an archaeological

site eligible for listing on the NRHP that will be adversely affected by the Project is practicable.

E. In relation to Stipulation II.D(1), review and provide concurrence on the treatment plan for archaeological sites that will be impacted by practicably unavoidable adverse effects, as opposed to review and comment on the treatment plan.

F. The USACE further agrees to the following if impacts to Department of the Navy sunken military craft are unavoidable or have inadvertently occurred in the course of the Project:

1. Any treatment plan developed pursuant to Stipulation II.D(2) for an archaeological property that is also a Department of the Navy sunken military craft will have to take into account the requirements otherwise imposed on permit applicants under 32 CFR § 767.6 (d).

2. In relation to Stipulation II.D(3), the USACE will notify the NHHC once recovery field operations have been completed so that a site visit may be completed. One or more site visits may also be completed by the NHHC during recovery field operations.

3. In relation to Stipulation III.C, the USACE will provide the NHHC with all final reports prepared pursuant to this Agreement pertaining to Department of the Navy sunken military craft – two (2) copies on acid-free paper and one (1) copy in pdf format on an archival compact disc.

4. In relation to Stipulation IV, the USACE will transfer all original archaeological records (research notes, field records, maps, drawings, and photographic records) and all archaeological collections recovered and retained from Department of the Navy sunken military craft to the NHHC at the completion of the Project for curation.

5. The USACE will fund the professional recovery, documentation, conservation, packaging, and transportation of the associated retained archaeological collections, as well as costs for certifying inert any associated ordnance in consultation with appropriate Department of Navy personnel. The NHHC will be afforded a determinative role should the USACE desire not to retain any part of an associated archaeological collection post-recovery and documentation, and agrees to maintain such records and collections in accordance with 36 CFR § 79, *Curation of Federally Owned and Administered Archaeological Collections*.

6. In relation to Stipulation VIII.B, the USACE will address the treatment of any human remains associated with Department of the Navy sunken military craft in consultation with the NHHC.

7. The aforementioned clauses supersede Appendix B with respect to Department of the Navy sunken military craft.

IX. POST-REVIEW DISCOVERIES

A. Should any activity that takes place as a result of this Agreement result in unanticipated or post-review archaeological discoveries, the USACE shall ensure work in the area is immediately stopped, the area secured, and the SHPO and other consulting parties notified. The USACE shall implement the Post-Review Discovery Plan included as Appendix B of this Agreement. The USACE, in consultation with the SHPO and other consulting parties, shall determine if significant resources are present and, if so, may be adversely affected by the remaining work. If avoidance of the resources is not possible the USACE shall ensure appropriate minimization and/or mitigation measures are implemented in consultation with the SHPO and other consulting parties before activity in the location of the discovery resumes.

B. Treatment of Human Remains

1. In the event human skeletal remains or burials are encountered during implementation of the Project, the USACE shall coordinate its compliance with Section 106 with other applicable federal, state, and local laws and reviews as appropriate.

2. Historic and prehistoric human remains from non-federal, non-tribal lands are subject to protection under Virginia's burial/unmarked grave/cemetery law(s) that require a permit from the DHR before remains are removed. As such, if human remains are discovered, the USACE shall ensure work in that portion of the Project area is stopped immediately. The remains shall be covered and/or protected in place in such a way that minimizes further exposure of and damage to the remains and the USACE shall immediately notify the SHPO and other consulting parties. If the remains are found to be Native America, in accordance with applicable law, the USACE shall develop a treatment plan in consultation with the SHPO, other consulting parties, and appropriate federal and state recognized Indian tribes. The USACE shall ensure that any treatment and reburial plan is fully implemented. If the remains are not Native American, the appropriate local authority shall be consulted to determine final disposition of the remains. Avoidance and preservation in place is the preferred option for treating human remains.

X. COMMUNICATIONS

Electronic mail (email) may serve as the official correspondence method for all communications regarding this Agreement and its provisions. See Appendix C for a list of contacts and email addresses. Contact information in Appendix C may be updated as needed without an amendment to this Agreement. It is the responsibility of each party to the Agreement to immediately inform the USACE of any change in name, address, email address, or phone number of any point-of-contact. The USACE shall forward this information to all parties to this Agreement by email.

XI. ELECTRONIC COPIES

Within one (1) week of the last signature on this Agreement, the USACE shall provide the SHPO and other consulting parties with one (1) high-quality, legible, color, electronic copy of this fully-executed Agreement and all of its appendices fully integrated into one, single document. Internet links shall not be used as a means to provide copies of the appendices since web-based information often changes. If the electronic copy is too large to send by e-mail, the USACE shall provide the SHPO and other consulting parties with a copy of this Agreement on a compact disc or other appropriate means.

XII. MONITORING AND REPORTING

Each year on the anniversary of the execution of this Agreement until it expires or is terminated, the USACE shall provide all parties to this Agreement a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in the USACE's efforts to carry out the terms of this Agreement. The reporting period shall be the fiscal year from October 1 to September 30.

XIII. DISPUTE RESOLUTION

Should any party to this Agreement object in writing to the USACE regarding any actions proposed under this Agreement, or the manner in which the terms of this Agreement are implemented, the USACE shall consult with the objecting party to resolve the objection. If the USACE determines that such objection cannot be resolved, the USACE shall:

A. Documentation

Forward all documentation relevant to the dispute, including the USACE's proposed resolution, to the ACHP. The ACHP shall provide the USACE with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the USACE shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and consulting parties, and provide them with a copy of this written response. The USACE shall then proceed according to its final decision.

B. Resolution

If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, the USACE may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the USACE shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and consulting parties to the Agreement, and provide them and the ACHP with a copy of such a written response.

C. Continuity

The USACE's responsibility to carry out all other actions subject to the terms of this Agreement that are not the subject of the dispute remain unchanged.

XIV. AVAILABILITY OF FEDERAL FUNDS / ANTI-DEFICIENCY ACT

The obligations of the USACE under this Agreement are subject to the availability of appropriated funds, and the stipulations of this Agreement are subject to the provisions of the Anti-Deficiency Act and other applicable provisions of federal fiscal law. The USACE shall make a reasonable and good faith effort to secure the necessary funds to implement its obligations under this Agreement. If compliance with the Anti-Deficiency Act or other applicable provisions of federal fiscal law alters or impairs USACE's ability to implement its obligations under this Agreement, the USACE shall consult in accordance with Stipulation XIII (Amendments) and, if necessary, Stipulation XIV (Termination).

XV. AMENDMENTS

This Agreement may be amended when an amendment is agreed to in writing by both Signatories. The amendment shall be effective on the date a copy signed by both of the Signatories is filed with ACHP.

XVI. TERMINATION

If either Signatory to this Agreement determines that the terms of the Agreement cannot or are not being carried out, that objecting party shall so notify the other Signatory in writing and consult with them to seek amendment of the Agreement. If within sixty (60) days, an amendment cannot be reached, either Signatory may terminate the Agreement upon written notification to the other Signatory. Once the Agreement is terminated, and prior to work continuing on the Project, the USACE must (a) either execute a new programmatic agreement pursuant to 36 CFR 800.14.(b) or (b) comply with 36 CFR 800 for any uncompleted aspects of the Project. The USACE shall notify the SHPO and other consulting parties as to the course of the action it will pursue.

XVII. DURATION

This Agreement shall be in effect for a period of fifteen (15) years from the date of the last signature of a Signatory party on this Agreement. At any time in the six (6)-month period prior to such date, the USACE may request that the Signatories consider an extension of this Agreement. No extension shall be effective unless all Signatories to the Agreement have agreed with the extension in writing.

EXECUTION OF THIS AGREEMENT

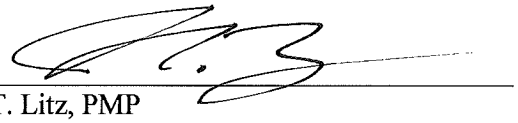
Execution of this Agreement and implementation of its terms evidences that USACE has taken into account the effects of the Project on historic properties and afforded ACHP a reasonable opportunity to comment.

Appendix A – Area of Potential Effects
Appendix B – Procedures for Post-Review Discoveries
Appendix C – Contact Information

Signatures Follow on Separate Page

SIGNATORY:

U.S. Army Corps of Engineers



05 DEC 17

John T. Litz, PMP
Colonel, U.S. Army
Commander and District Engineer

Date

SIGNATORY:

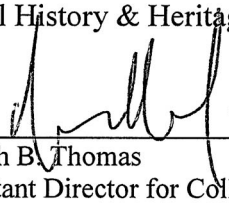
Virginia State Historic Preservation Officer

Julie V. Langan
Director, Department of Historic Resources

12-10-19
Date

CONCURRING PARTY:

Naval History & Heritage Command



10 DEC 2019

Joseph B. Thomas
Assistant Director for Collection Management

Date

CONCURRING PARTY:

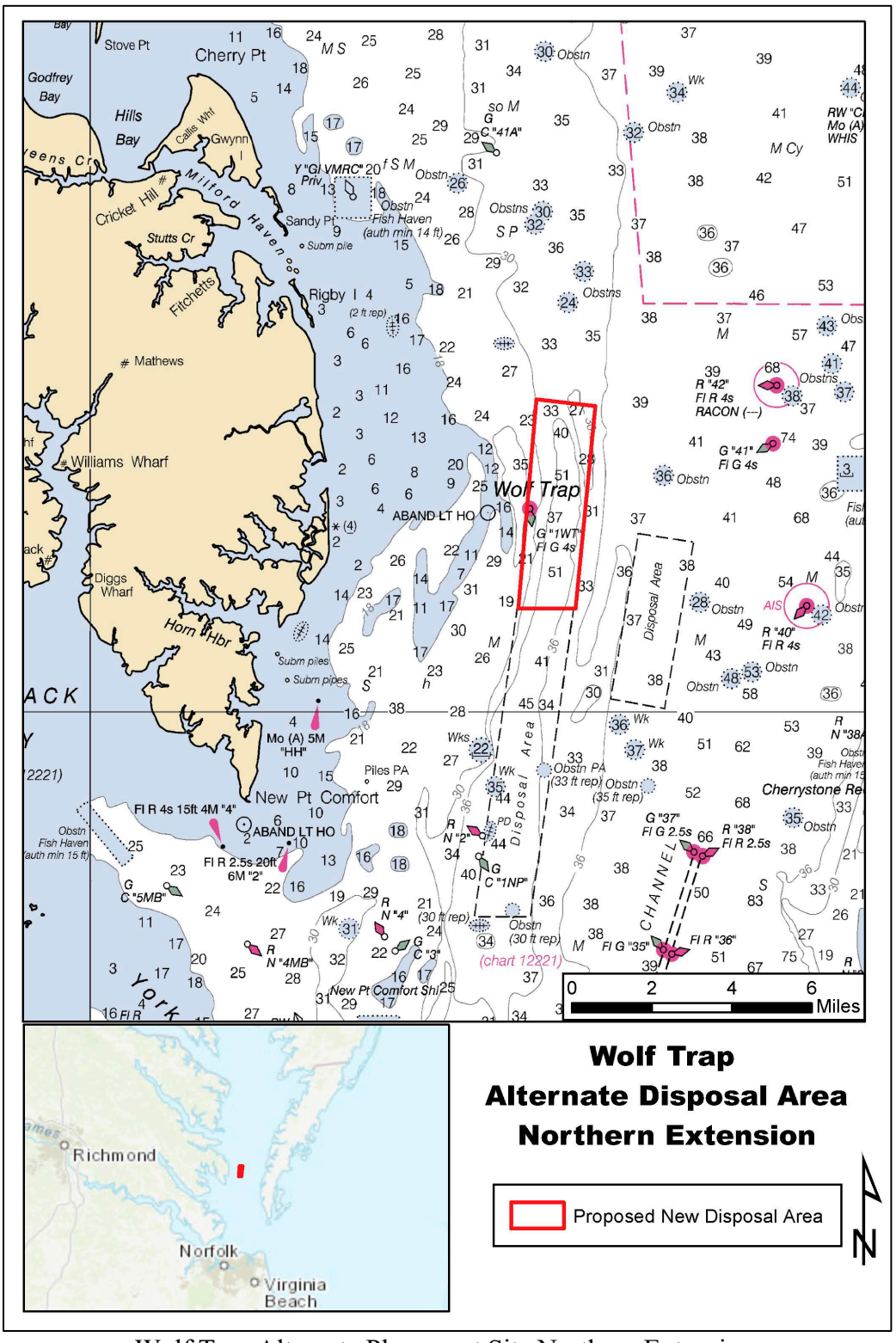
Mariners' Museum and Park

Hannah Fleming
Material Culture Specialist

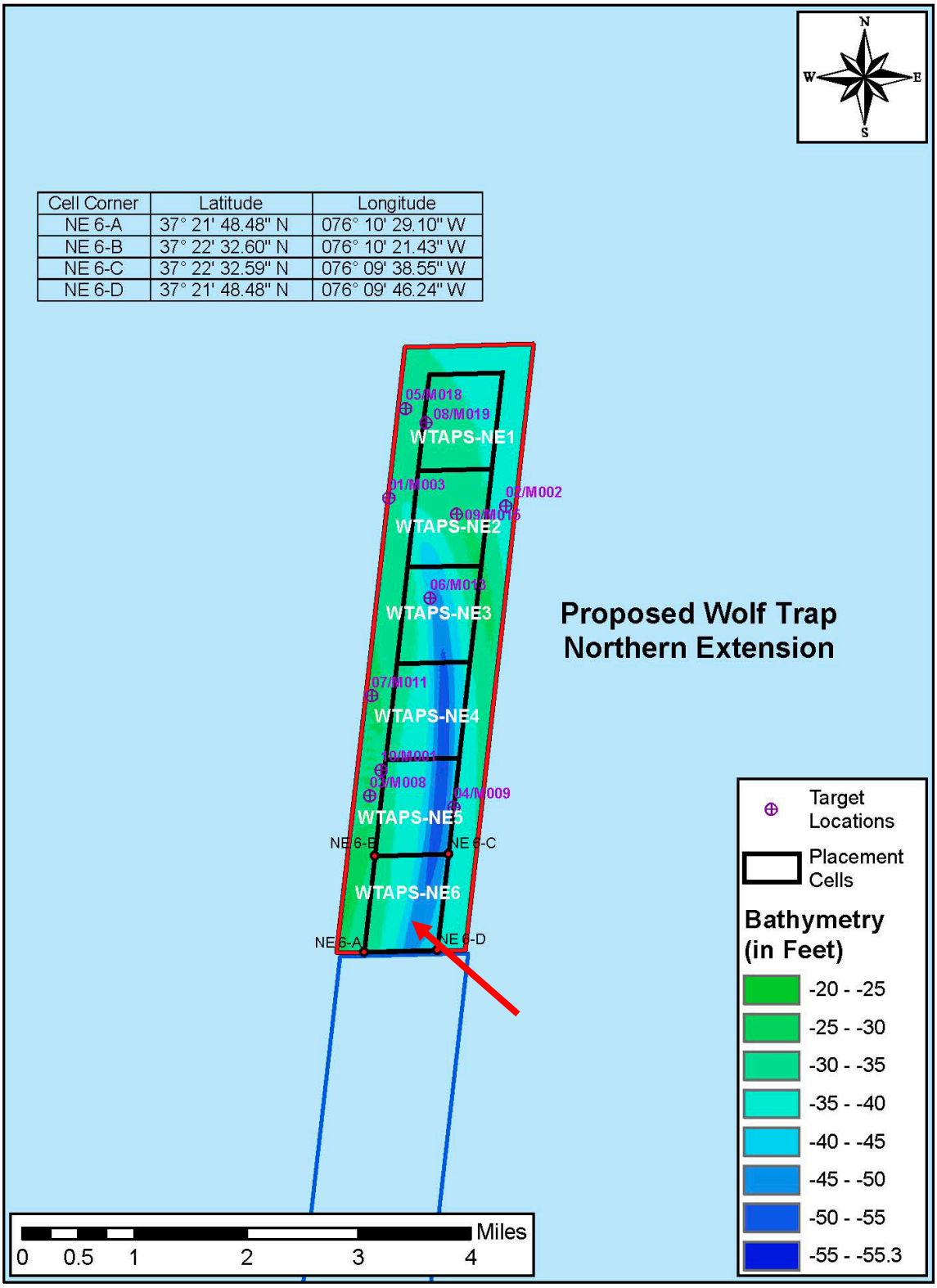
12/11/2019
Date

APPENDIX A

Area of Potential Effects



Wolf Trap Alternate Placement Site Northern Extension.



Location of Cell NE-6.

APPENDIX B

Procedures for Post-Review Discoveries

PROCEDURES FOR POST-REVIEW DISCOVERIES

Post-Review Discoveries

If previously unidentified historic properties or unanticipated effects to historic properties are discovered during contract activities, the contractor shall immediately halt all activity within a minimum fifty (50) meter (one hundred sixty-four [164] feet) radius of the discovery, notify the USACE Project Manager and the USACE Archaeologist of the discovery and implement interim measures to protect the discovery from looting and vandalism. Work in all other areas not the subject of discovery may continue without interruption.

Immediately upon receipt of the notification from the contractor (see subparagraph immediately above), the USACE Archaeologist shall:

1. Inspect the site to determine the extent of the discovery and ensure that the Undertaking in that area is halted; and,

2. Clearly mark the area of the discovery; and,

3. Implement additional measures, as appropriate, to protect the discovery from looting and vandalism; and,

4. Determine the extent of the discovery and provide recommendations regarding its National Register of Historic Places (NRHP) eligibility and treatment; and,

5. Notify the USACE Project Manager, the SHPO and other consulting parties of the discovery describing the measures that have been implemented to comply with this Post-Review Discovery procedure.

Upon receipt of the information required in subparagraphs 1 – 5 above, the USACE shall provide the SHPO and other consulting parties with an assessment of the NRHP eligibility of the discovery and the measures proposed to resolve adverse effects. In making the evaluation, the USACE, in consultation with the SHPO, may assume the discovery to be eligible for the NRHP for the purposes of Section 106 pursuant to 36 CFR Part 800.13(c). The SHPO and other consulting parties shall respond to the USACE's assessment within forty-eight (48) hours of receipt.

The USACE shall take into account the SHPO and other consulting parties' recommendations on eligibility and treatment of the discovery and shall provide the SHPO and other consulting parties with a report on the actions when implemented. The Undertaking may proceed in area of the discovery, once the USACE has determined that the actions undertaken to address the discovery pursuant to this Stipulation are complete.

Treatment of Human Remains

The USACE shall make all reasonable efforts to avoid disturbing gravesites, including those containing Native American human remains and associated funerary objects. If human remains and/or associated funerary objects are encountered during the course of the Undertaking, the USACE shall immediately halt the Undertaking in the area and contact the USACE Archaeologist and the appropriate city Police Department.

The USACE shall treat all human remains in a manner consistent with the ACHPS's Policy Statement Regarding Treatment of Burial Sites, Human Remains and Funerary Objects (February 23, 2007; http://www.achp.gov\docs\hrpolivy0207.pdf)

The USACE shall make a good faith effort to ensure that the general public is excluded from viewing any Native American burial site or associated funerary objects. The Signatories to this PA agree to release no photographs of any Native American burial site or associated funerary objects to the press or general public. The USACE shall notify the Delaware Nation, the Pamunkey Indian Tribe, and other appropriate federally-recognized Tribe(s) if their interest(s) have been established, when Native American burials, human skeletal remains, or funerary objects are encountered during the Undertaking. Following consultation by the USACE, the SHPO, and identified Tribes with cultural affiliation, the USACE shall ensure that the proper steps are taken regarding the remains. This could include the delivery of any Native American human skeletal remains and associated funerary objects recovered pursuant to this PA to the appropriate Tribe.

If the remains are determined to be historic and not Native American, USACE shall consult with the SHPO and other appropriate consulting parties prior to any excavation by providing a treatment plan including the following information:

- The name of the property or archaeological site and specific location from which the recovery is proposed. If the recovery is from a known archaeological site, a state-issued site number must be included.
- Indication of whether a waiver of public notice is requested and why. If a waiver is not requested, a copy of the public notice to be published in a newspaper having general circulation in the Mathews County area for a minimum of four weeks prior to recovery.
- A copy of the curriculum vitae of the skeletal biologist who will perform the analysis of the remains.
- A statement that the treatment of human skeletal remains and associated artifacts will be respectful.
- An expected timetable for excavation, osteological analysis, preparation of a final report, and final disposition of remains.
- A statement of the goals and objectives of the removal of human remains (to include both excavation and osteological analysis).
- If a disposition other than reburial is proposed, a statement of justification for that decision.

The USACE Archaeologist shall submit the draft treatment plan to the SHPO and appropriate consulting parties for review and comment. All comments received within thirty (30) calendar days shall be addressed in the final treatment plan. Upon receipt of final approval in writing from the USACE Archaeologist, the treatment plan shall be implemented prior to those Undertaking activities that could affect the burial(s).

The USACE Archaeologist shall notify the USACE Project Manager and the SHPO in writing once the fieldwork portion of the removal of human remains is complete. The Undertaking in the area may proceed following this notification while the technical report is in preparation. The USACE Archaeologist may approve the implementation of Undertaking-related ground disturbing activities in the area of the discovery while the technical report is in preparation.

The USACE Archaeologist shall ensure that a draft report of the results of the recovery is prepared within one (1) year of the notification that archaeological fieldwork has been completed and submitted to the SHPO and other appropriate consulting parties for review and comment. All comments received within thirty (30) calendar days of receipt shall be addressed in the final report. When the final report has been approved by the USACE Archaeologist, two (2) copies of the document, bound and on acid-free paper and one (1) electronic copy in Adobe (R) Portable Document Format (.pdf) shall be provided to the SHPO.

The USACE Archaeologist shall notify the USACE Project Manager and the SHPO within fifteen (15) calendar days of final disposition of the human remains.

APPENDIX C

Contact Information

U.S. Army Corps of Engineers, Baltimore District

Jeremiah Spiga
Project Manager
U.S. Army Corps of Engineers
Baltimore District (NAB)
2 Hopkins Plaza
Baltimore, MD 21201
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Jeremiah.p.spiga@usace.army.mil

Ethan Bean
Cultural Resources Specialist
U.S. Army Corps of Engineers
Baltimore District (NAB)
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Baltimore, MD 21201
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Ethan.a.bean@usace.army.mil

Naval History & Heritage Command

Robert S. Neyland, PhD
Head, Underwater Archaeology Branch
Naval History & Heritage Command
805 Kidder Breese Street SE
Washington Navy Yard
Washington DC, 20374-5060
Office: (202) 685-0897
Robert.Neyland@navy.mil

Mariners' Museum and Park

Hannah Fleming
Material Culture Specialist
Mariners' Museum and Park
100 Museum Drive
Newport News, VA 23606
Office: (757) 596-2222
hfleming@marinersmuseum.org

DREDGE DISPOSAL EFFECTS ON BLUE CRAB
Report to USACE, Baltimore District

Romuald N. Lipcius[a,c] and Kathleen E. Knick[b,c]

29 March 2016

a. Principal Investigator

b. Marine Scientist

c. Virginia Institute of Marine Science
College of William & Mary
Gloucester Point, VA 23062 USA

Contents

1 Objectives

The U.S. Army Corps of Engineers (Baltimore District) has requested an opinion on (i) how placement of dredge materials from the channel dredging in Chesapeake Bay might affect blue crab survival and abundance, and (ii) alternative sites for dredge materials disposal where blue crab survival and abundance would not be reduced in winter (December-March). To address these two issues, we analyzed data from the blue crab winter dredge survey (WDS) from 2009-2016 in relation to the proposed dredge materials disposal sites at Wolf Trap and Rappahannock Shoal (Figure 1).

2 Methods

Blue crab, bathymetry, and sediment type data were derived from the WDS, which samples the blue crab population in wintertime at approximately 1,500 stations annually. The WDS is a cooperative survey between the Virginia Institute of Marine Science and the Maryland Department of Natural Resources. Further details are available at: http://www.vims.edu/research/units/programs/bc_winter_dredge/index.php.

3 Assessment of Wolf Trap and Rappahannock Shoal Disposal Sites

First, we evaluated the two disposal sites, Wolf Trap (WT) and Rappahannock Shoal (RS), relative to water depth (Figure 2) and sediment type (Figure 3). The RS site is mostly in 12-13 m water depths and in muddy sediments (Figures 2 and 3). In contrast, the WT site is somewhat deeper at 13-16 m water depths, and is composed of diverse sediments ranging from mud to muddy sand and sand (Figures 2 and 3).

Data from the WDS from 2009-2016 are portrayed in Figures 4-12. [Note that in the figures the densities have been multiplied by a factor of 1000 for clarity.]

At the WT disposal site, in the composite for 2009-2016, female blue crabs were generally very abundant in the southern portion of the WT disposal site, moderately abundant in the northern portion of WT, and less so in the middle section of WT (Figure 4), although the pattern varied across years (Figures 5 to 12). During 2009, 2010 and 2015, the general spatial pattern of crab abundance held (Figures 5, 6 and 11), wheres in other years (2011, 2013 and 2016), crab densities were high throughout WT (Figures 7, 9 and 12). Alternately, in two years (20112 and 2014) highest crab densities were to the northeast of WT, resulting in relatively low densities in WT (Figures 8 and 10). Consequently, it is difficult to predict if crab abundance will be high or low in a given section of WT for an upcoming winter. A risk-averse approach to management dictates that WT is not a suitable site for dredge

materials disposal in the wintertime, if management wishes to prevent significant blue crab mortality.

At the RS disposal site, the pattern differed significantly from that of the WT disposal site. In the composite for 2009-2016, female blue crabs were never abundant throughout the RS disposal site (Figure 4), and the pattern held across years (Figures 5 to 12). High densities of crabs always occurred to the east of the RS disposal site, and were generally low both in the RS disposal site and to the west of RS (Figures 5 to 12). Hence, the RS disposal site is an acceptable disposal site, even under a risk-averse management approach.

4 Alternative to Wolf Trap Disposal Site

In the process of evaluating the WT and RS disposal sites, we also evaluated an alternative disposal site in the deeper, muddy channel (WTalt) immediately north of the WT site (Figure 13). In general, crab densities were highest just east of the WTalt site, and low at the WTalt site (Figure 4), except for one year (2011) when crab densities rose throughout the lower bay, including the WTalt site (Figures 5 to 12). It is likely that within the deeper, muddy channel north of the WT site crab density will almost always be low due to the muddy habitat, which is usually avoided as an overwintering habitat by blue crabs. Thus, the WTalt site is suitable as a wintertime disposal site.

5 Acknowledgements

We thank Michael Seebo and Alison Smith of VIMS, as well as students in the Marine Conservation Ecology and Community Ecology Programs, for their hard work in the conduct of the blue crab winter dredge survey.

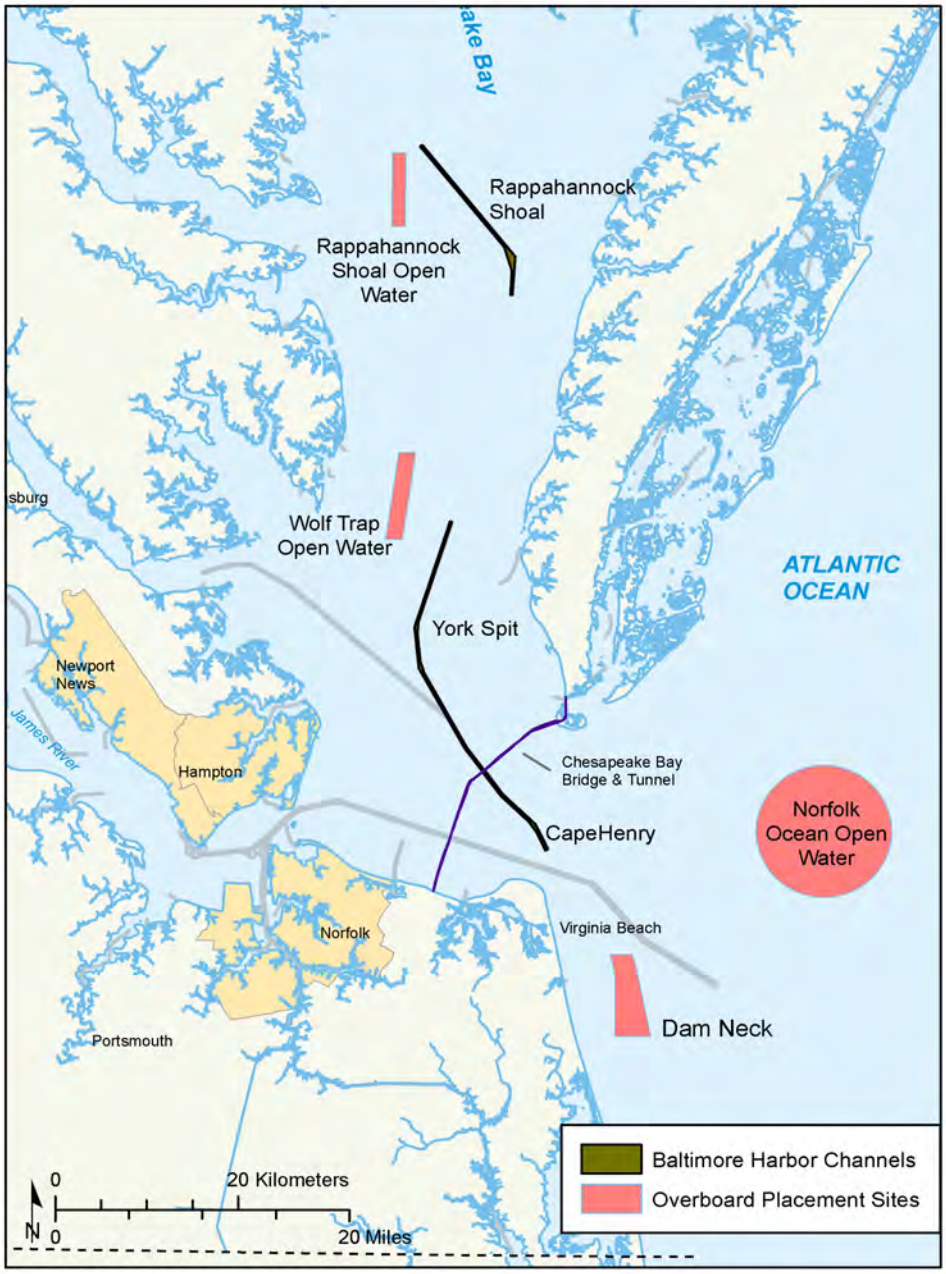


Figure 1: Proposed dredge materials disposal sites by U.S. Army Corps of Engineers, Baltimore District.

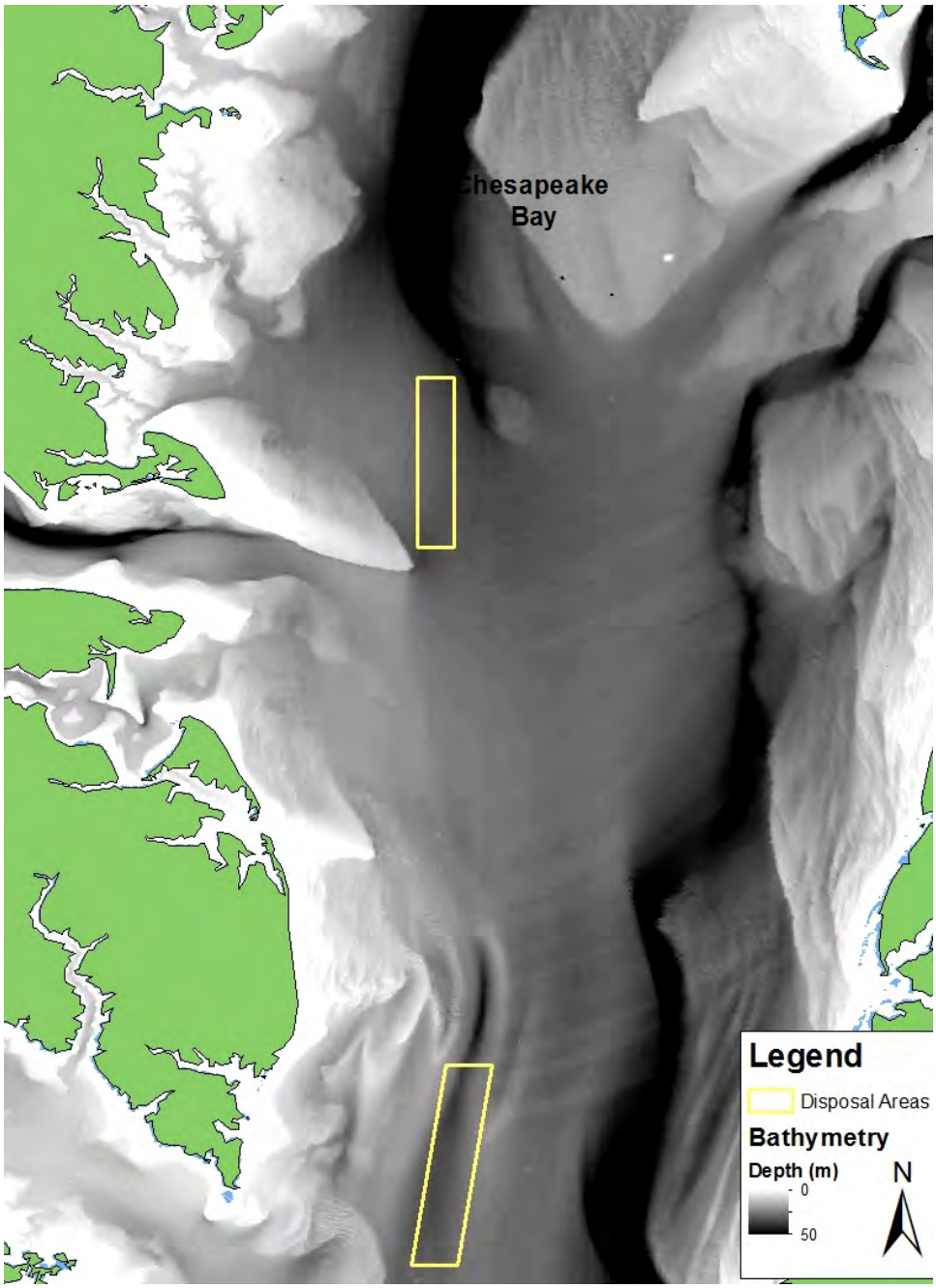


Figure 2: Proposed dredge materials disposal sites relative to bathymetry.

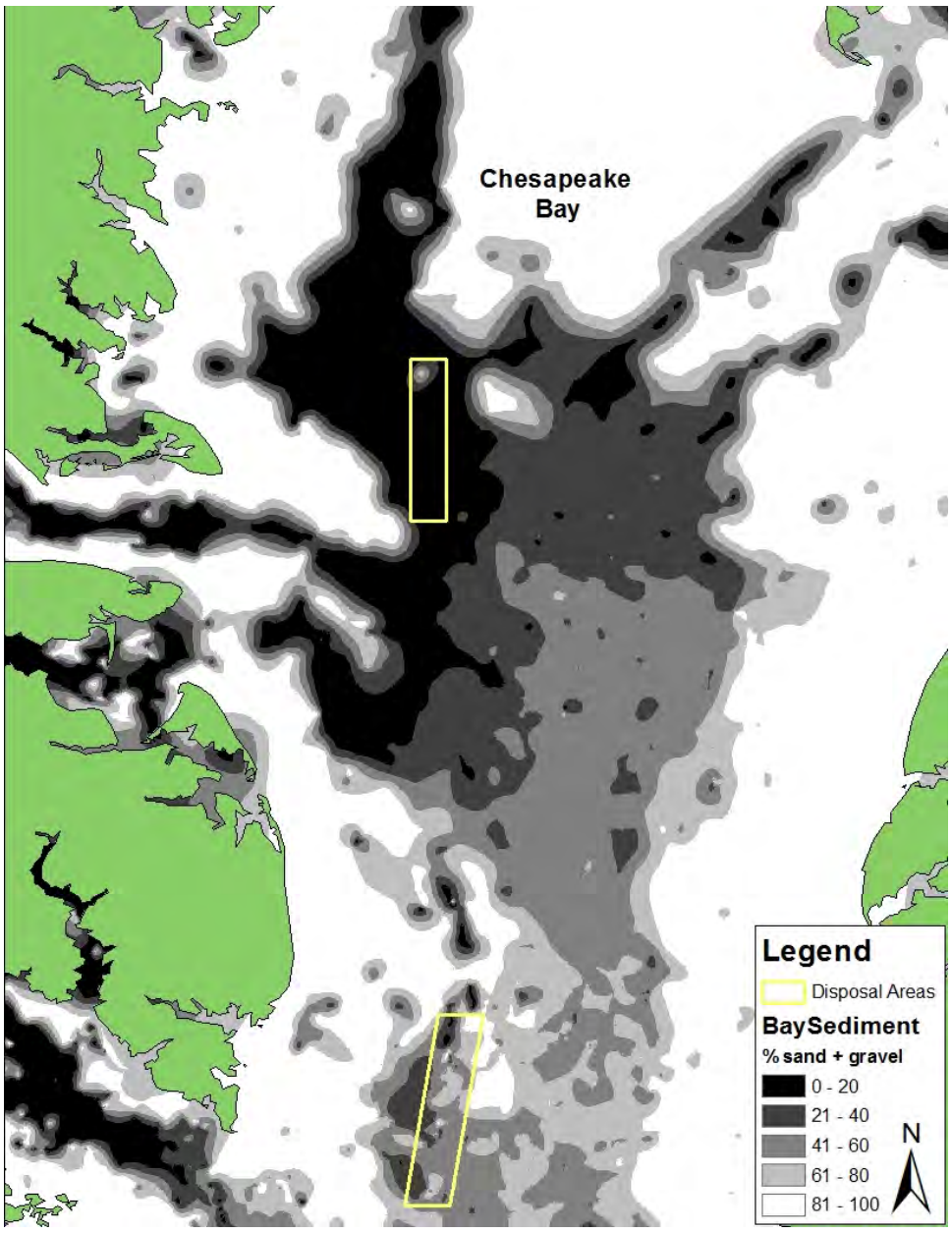


Figure 3: Proposed dredge materials disposal sites relative to sediment type.

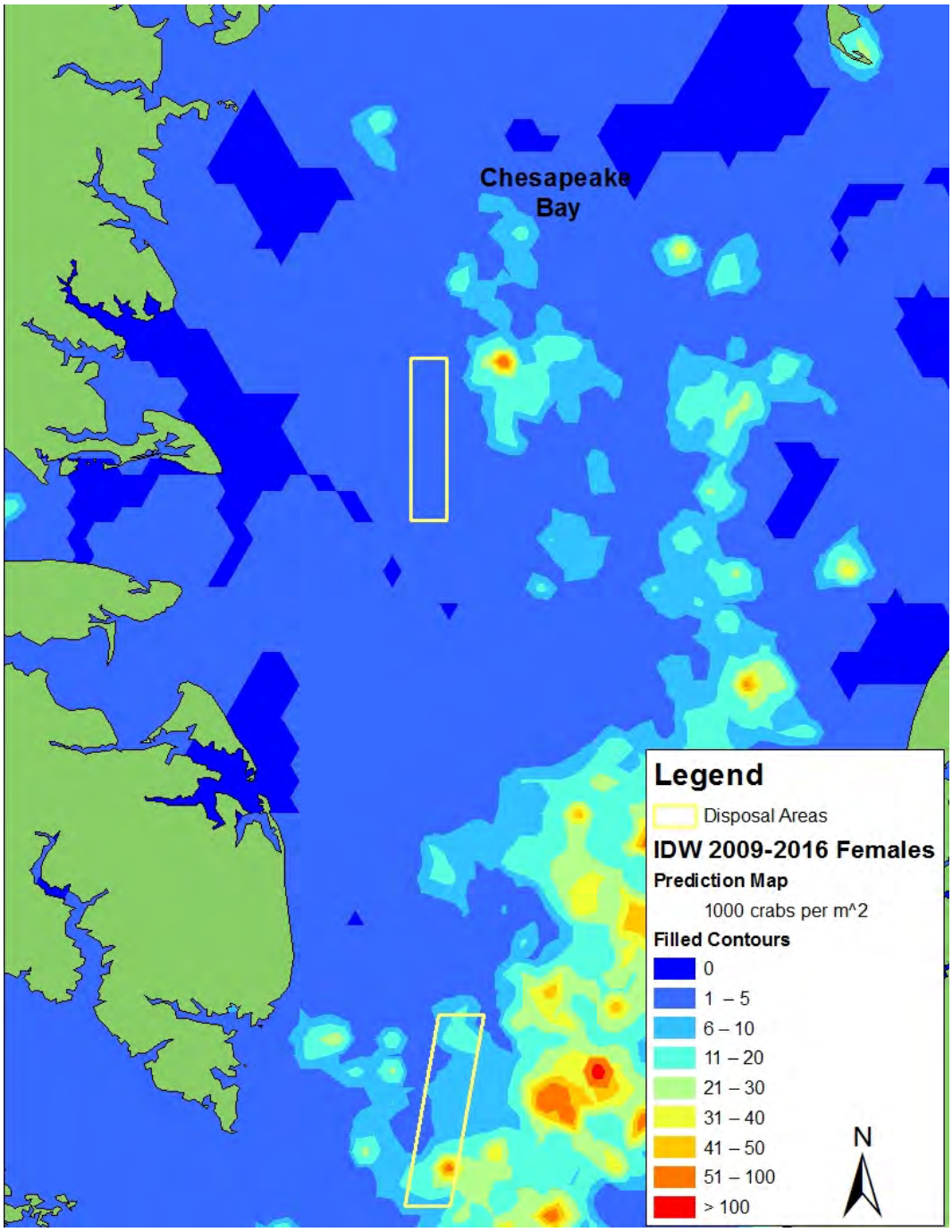


Figure 4: Density of blue crab females as a composite from 2009-2016.

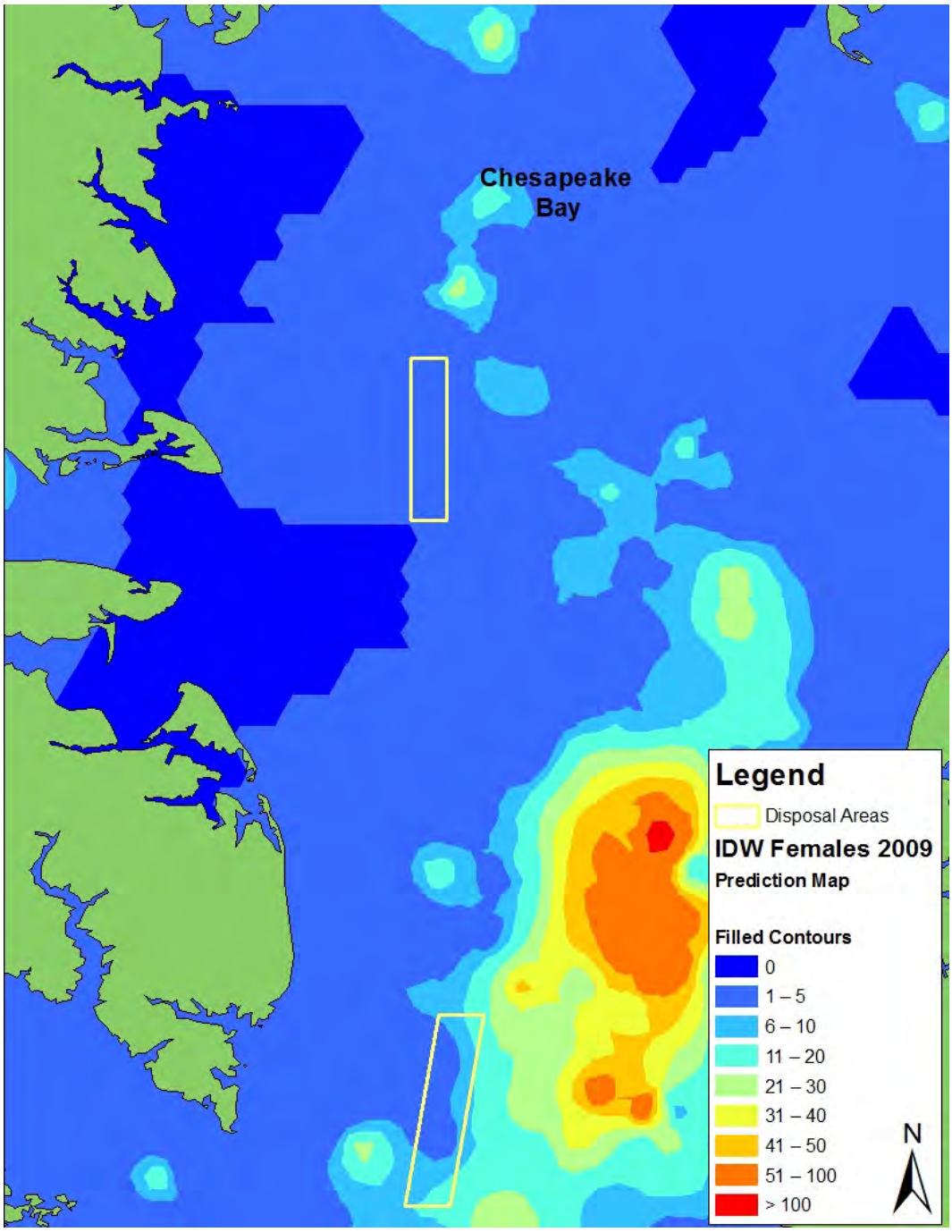


Figure 5: Density of blue crab females in 2009.

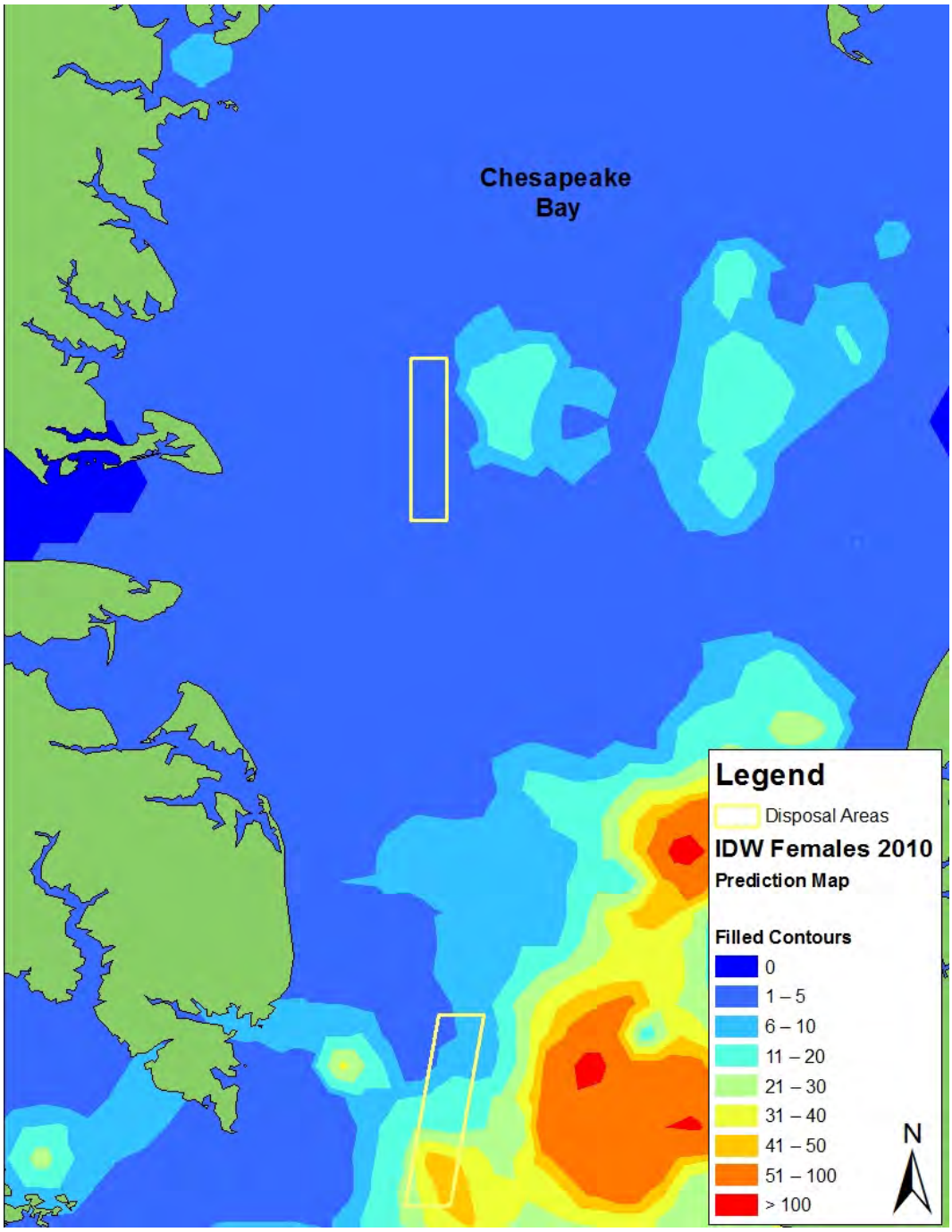


Figure 6: Density of blue crab females in 2010.

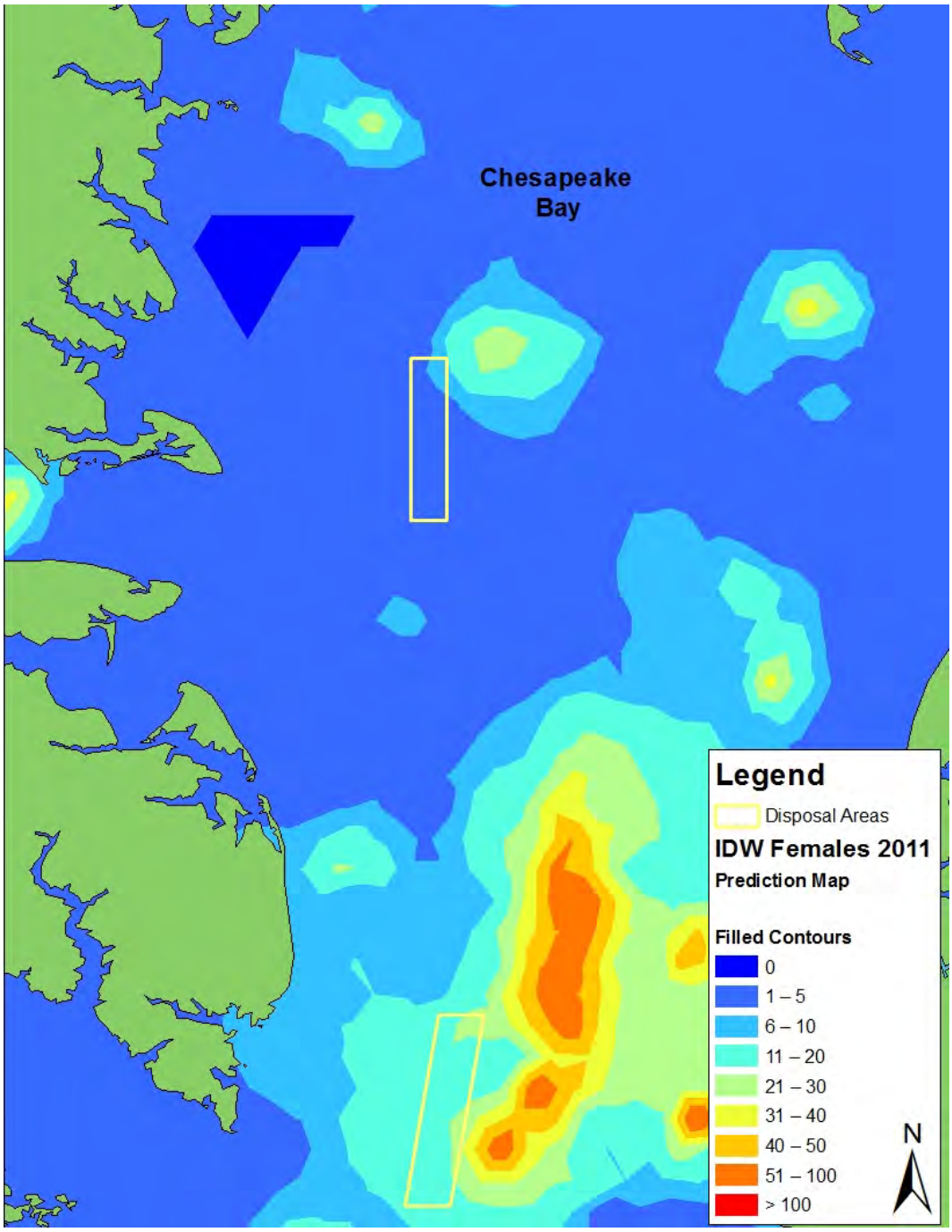


Figure 7: Density of blue crab females in 2011.

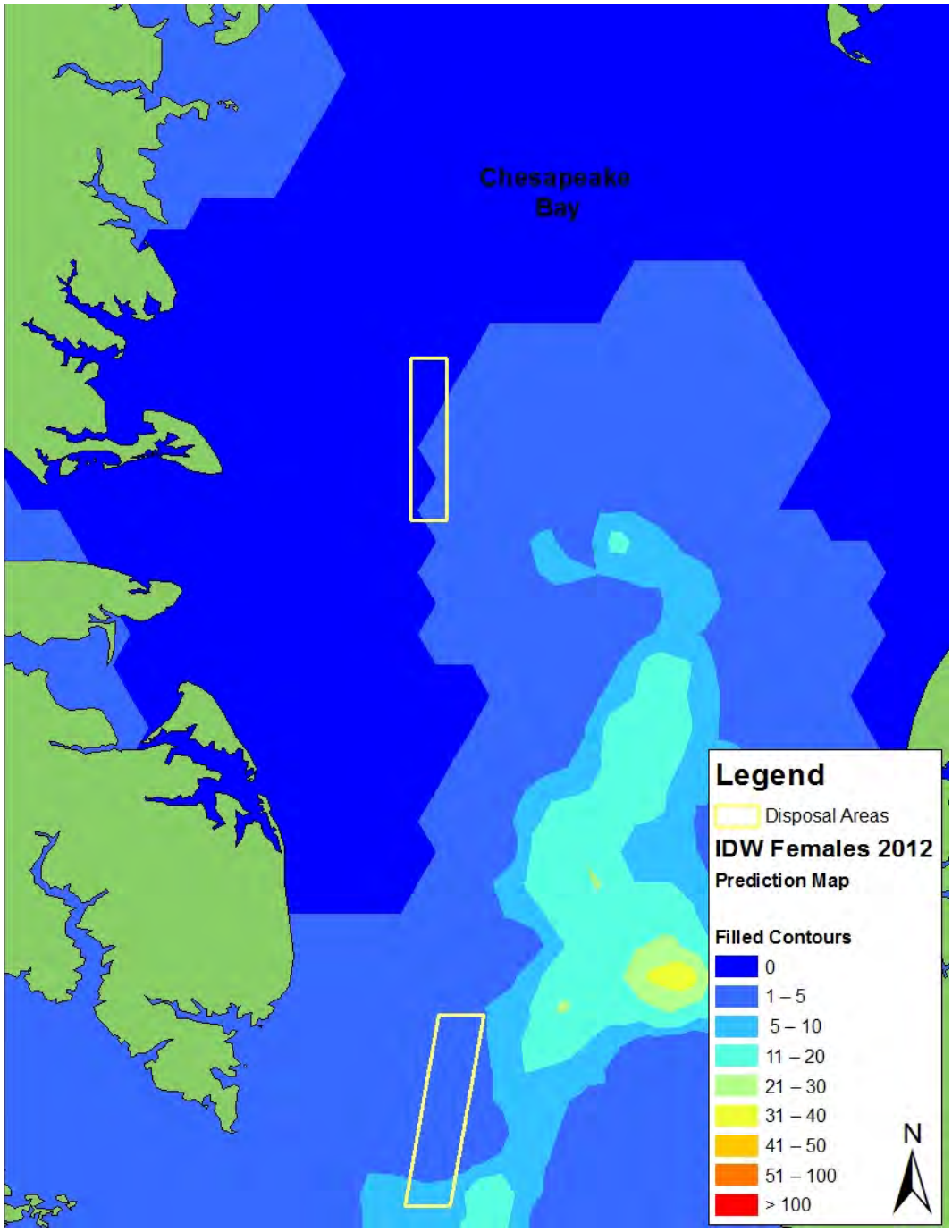


Figure 8: Density of blue crab females in 2012.

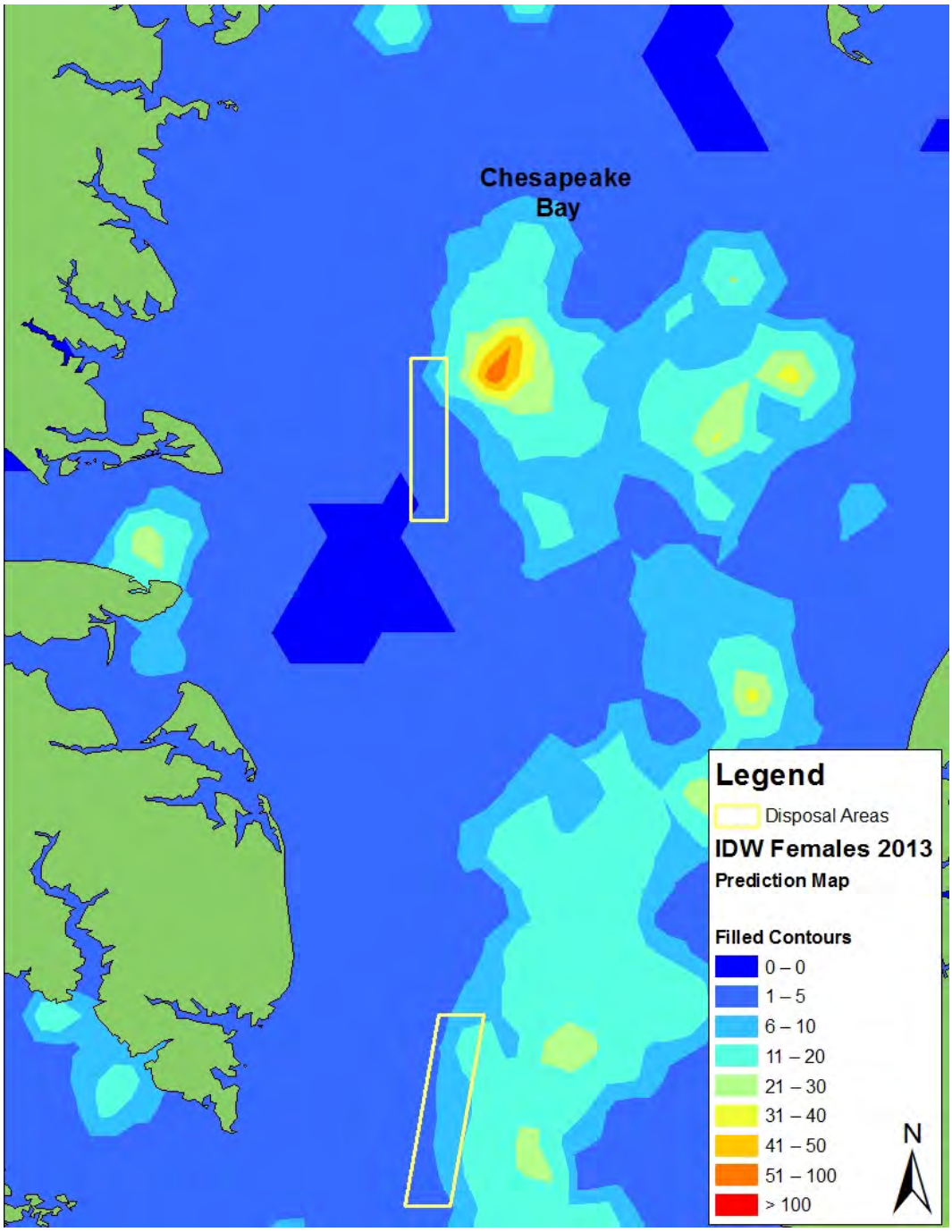


Figure 9: Density of blue crab females in 2013.

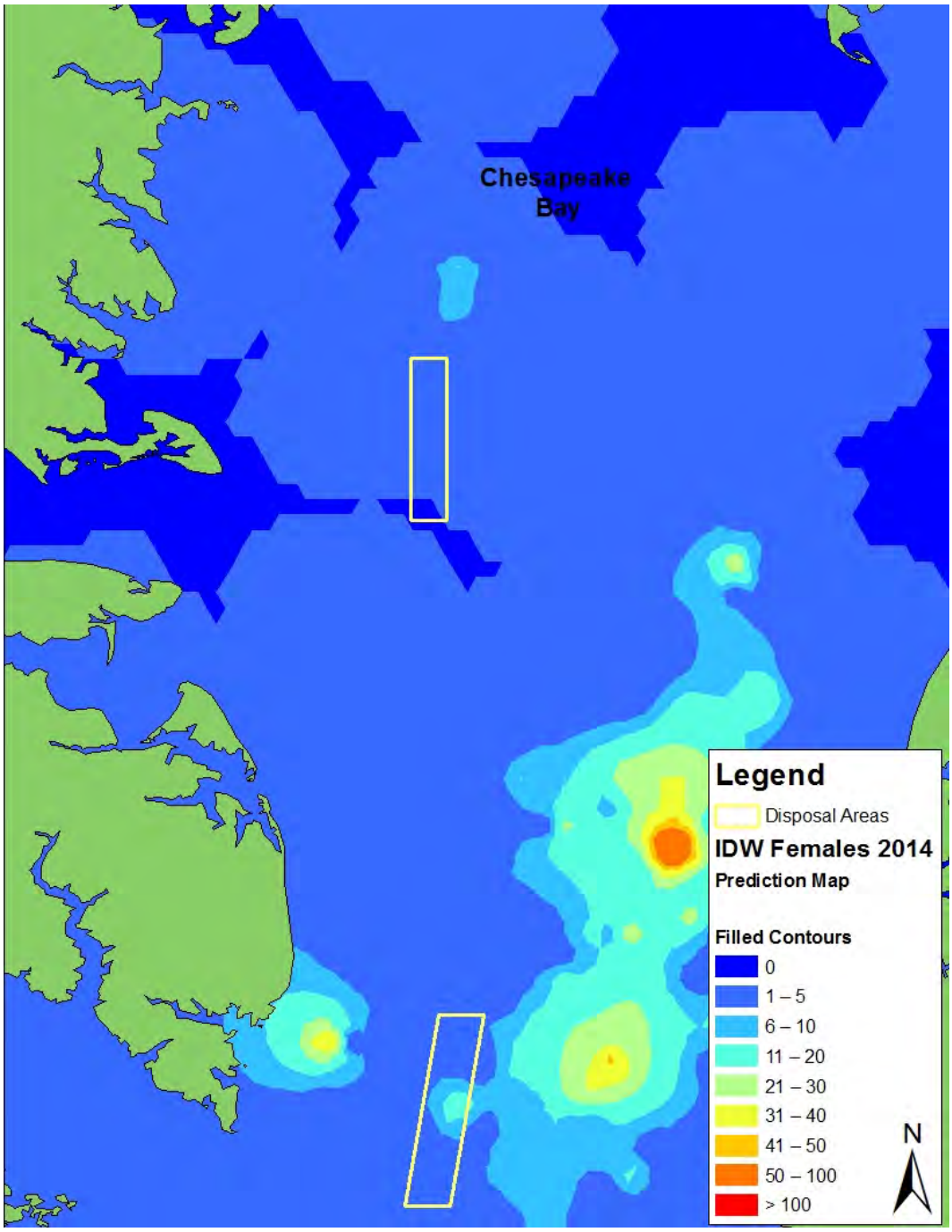


Figure 10: Density of blue crab females in 2014.

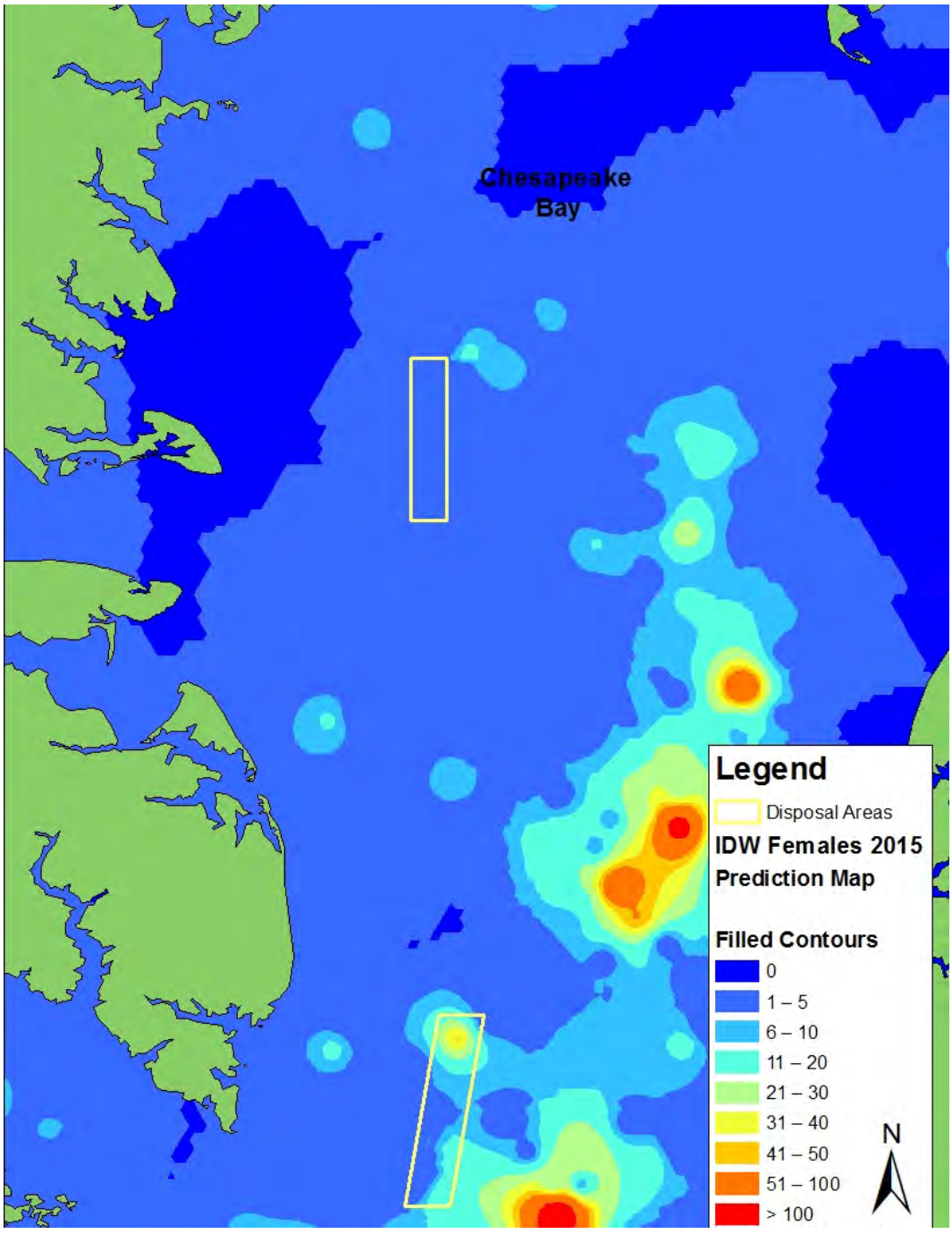


Figure 11: Density of blue crab females in 2015.

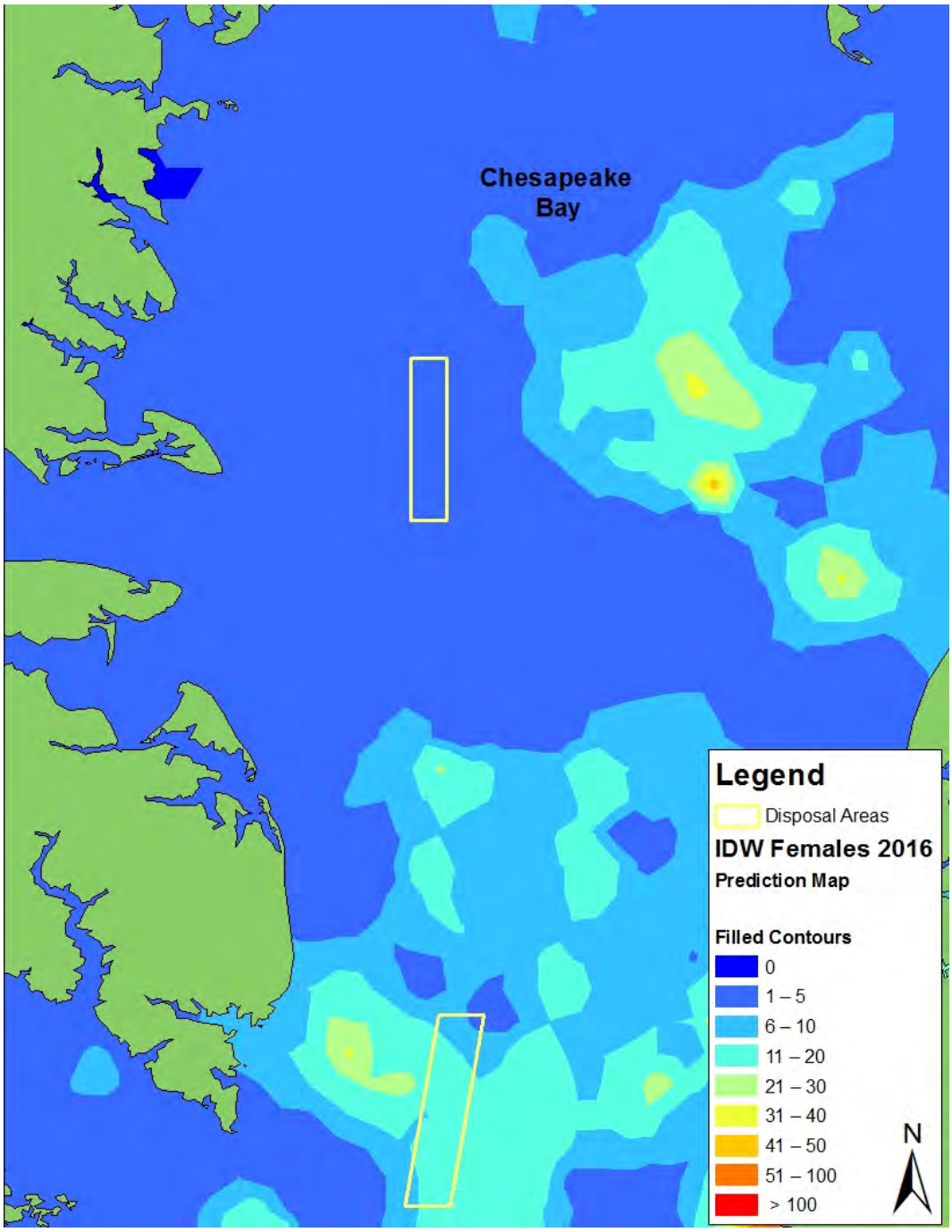


Figure 12: Density of blue crab females in 2016.

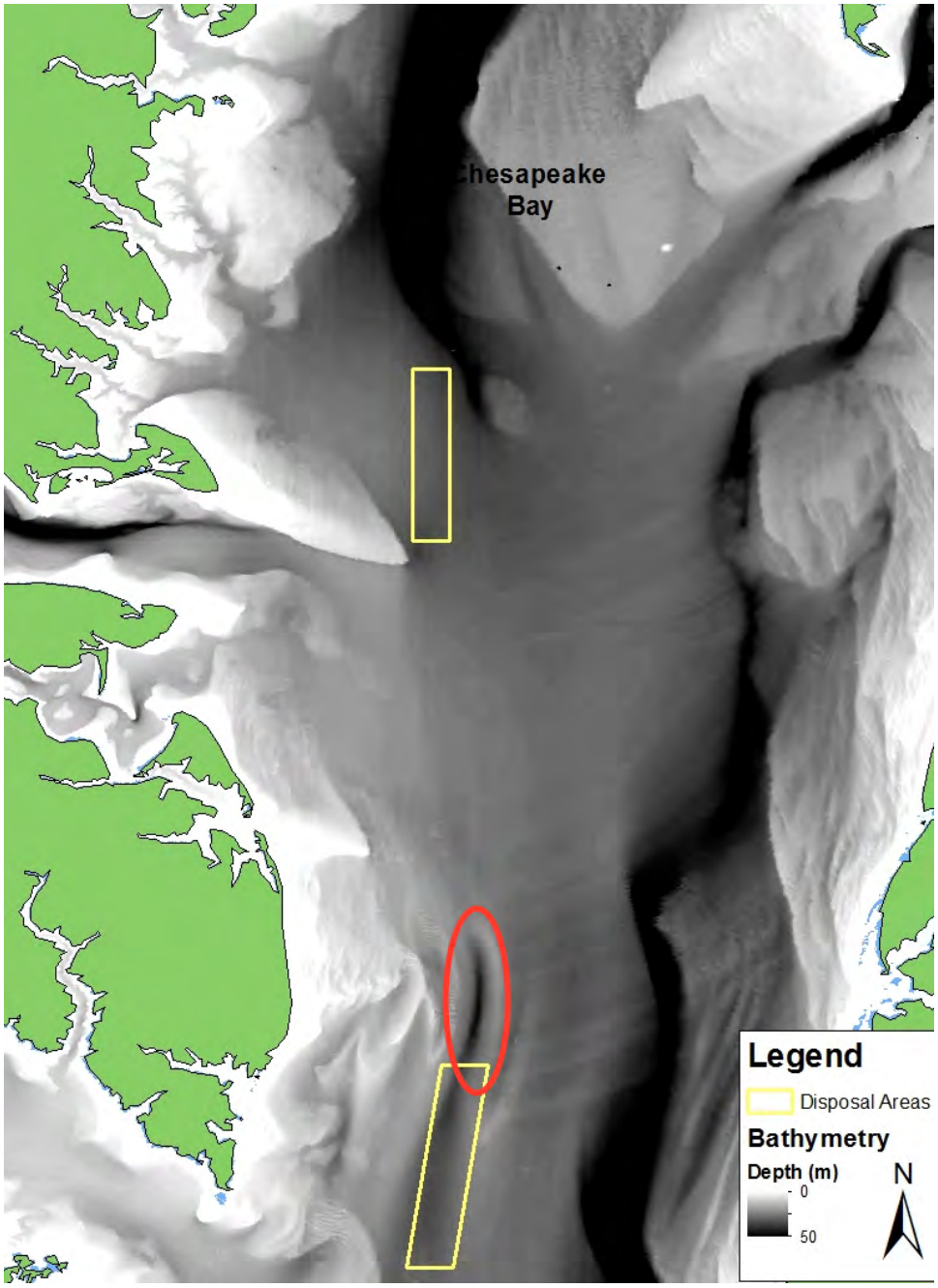


Figure 13: Proposed alternative disposal site (red oval) north of the WT disposal site.

WOLF TRAP ALTERNATE OPEN WATER PLACEMENT SITE
NORTHERN EXTENSION
FINAL ENVIRONMENTAL ASSESSMENT
OCTOBER 2019

APPENDIX G
Coastal Zone Management Act Conditional Consistency Determination and Section 401 Water Quality Certification

TABLE OF CONTENTS

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, BALTIMORE DISTRICT
2 HOPKINS PLAZA
BALTIMORE, MARYLAND 21201-2930

Planning Division

Ms. Bettina Rayfield
Program Manager
Environmental Impact Review and Long-Range Priorities
Department of Environmental Quality
Commonwealth of Virginia
P.O. Box 1105
Richmond, VA 23218
eir@deq.virginia.gov

Dear Ms. Rayfield:

The U.S. Army Corps of Engineers, Baltimore District (USACE), in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, has prepared a draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the proposed extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) to the north, increasing the size of the site by approximately 3,900 acres. The WTAPS Northern Extension would be located in the lower Chesapeake Bay between the Piankatank River and Mobjack Bay, approximately five miles east of Mathews County, Virginia. The EA and FONSI were prepared in partnership with the Maryland Port Administration, the non-federal sponsor.

The WTAPS Northern Extension would serve as an open water placement site for material dredged primarily from the York Spit Channel, which is part of the federally-maintained Baltimore Harbor and Channels 50-Foot Navigation Project. The WTAPS Northern Extension has been recommended by agencies of the Commonwealth of Virginia as an alternative to the currently-used WTAPS due to the potential for a high abundance of female blue crabs to overwinter in the southern portion of WTAPS.

Approximately 2.6 million cubic yards (mcy) of material dredged from the York Spit Channel would be placed into the WTAPS Northern Extension during initial placement, expected to begin in late fall of 2019. After initial placement, it is anticipated that approximately 1.5 mcy of material dredged from the York Spit Channel would be placed into the site approximately every 4 years, or until another alternate placement site or method is identified, approved, and implemented. Placement would not occur from Sept. 1 through Nov. 14 to minimize adverse impacts to sea turtles. The proposed project does not include any changes to ongoing maintenance dredging activities or any other actions beyond the establishment of the placement site extension. In FY 2020, USACE plans to begin a comprehensive evaluation of alternatives to WTAPS through a Dredged Material Management Plan for the portion of the Baltimore Harbor and Channels Navigation Project located in Virginia.

The draft EA and FONSI were made available to the public for a 30-day review on July 19, 2019.

The following documents are provided for review by the Commonwealth of Virginia:

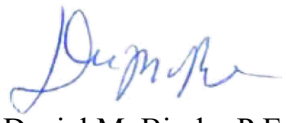
1. NEPA documents including the draft EA, FONSI and appendices. These documents are also available via the USACE website at: https://www.nab.usace.army.mil/Missions/Civil-Works/Dredged-Material-Management-Plan-DMMP.

2. Federal consistency documentation pursuant to the federal Coastal Zone Management (CZM) Act of 1972, as amended.

I hope that we have satisfactorily provided all of the information required to facilitate your CZM decision. It is our understanding that the Water Quality Certification (WQC) pursuant to Section 401 of the Clean Water Act would be covered under the CZM concurrence process, and that a separate WQC request is not required. The Clean Water Act Section 404(b)(1) Evaluation can be found in Appendix D of the draft EA.

This action was proposed to USACE by the Commonwealth of Virginia to reduce impacts to overwintering female blue crabs associated with periodic maintenance dredging of the York Spit Channel. In order to protect overwintering blue crabs and ensure that the WTAPS northern extension is available for dredging scheduled for late this year, we request your agency's timely consideration and response to this request. We are ready and willing to provide any additional information that you may need to complete your review. Please provide comments to Kristina May by email at Kristina.K.May@usace.army.mil or by telephone at 410-962-6100.

Sincerely,



Daniel M. Bierly, P.E.
Chief, Civil Project Development Branch
Planning Division

Enclosures

Wolf Trap Alternate Open Water Placement Site Northern Extension
Virginia Waters of the Chesapeake Bay
Federal Consistency Documentation
July 2019
Prepared by the U.S. Army Corps of Engineers, Baltimore District

This document provides the Commonwealth of Virginia (VA) with the U.S. Army Corps of Engineers' (USACE) Consistency Determination and necessary data and information under the Coastal Zone Management Act (CZMA), Section 307(c)(1), for the proposed *Wolf Trap Alternate Open Water Placement Site Northern Extension* (WTAPSNE), which lies in the VA Waters of the Chesapeake Bay. The information in this Consistency Determination is provided pursuant to 15 CFR §930.39.

Description of Proposed Action

This proposed federal agency activity is described in detail in the July 2019 WTAPSNE draft Finding of No Significant Impact (FONSI) and Environmental Assessment (EA). The proposed USACE action would include:

- Establishing an extension of the existing 2,300 acre Wolf Trap Alternate Open Water Placement Site (WTAPS) to the north, increasing the size of the placement site by approximately 3,900 acres.
- Placing approximately 2.6 million cubic yards (mcy) of dredged material from operation and maintenance of the York Spit Channel into WTAPSNE during the initial placement event that is expected to begin in late fall of 2019. After initial placement into WTAPSNE, it is anticipated that approximately 1.5 mcy of dredged material from the York Spit Channel would be placed into site open waters approximately every 4 years, or until another alternate placement site or method is identified, approved and implemented.
- WTAPSNE would serve as an open water placement site for dredged material primarily from the York Spit Channel, but may also be used as a placement site for other dredging projects in the lower Chesapeake Bay pending evaluation.
- The proposed action does not include any changes to or consideration of the ongoing maintenance dredging activities or any other actions beyond the establishment of the new placement site itself.

Assessment of Probable Effects

The proposed WTAPSNE would affect the water uses and natural resources of the VA coastal zone. USACE is required to determine the consistency of the activity with the VA Coastal Resources Zone Management Program (VACZMP). The publication *Federal Consistency Information Package for Virginia Coastal Zone Management Program* (July 2011) identifies VA's designated coastal resources management areas and contains multiple enforceable policies.

USACE reviewed the VACZMP and determined that fisheries management, subaqueous lands management, point source pollution control, and air pollution control enforceable policies are

applicable to WTAPSNE[1]. The text below briefly describes applicable VACZMP enforceable policies, and describes reasonably foreseeable effects with respect to each policy. (Sections 8 through 12 of the July 2019 draft FONSI and EA contain a detailed analysis of these effects.)

Fisheries Management - The VA program stresses the conservation and enhancement of finfish and shellfish resources and the promotion of commercial and recreational fisheries to maximize food production and recreational opportunities.

The proposed action was formulated to minimize impacts to wintering blue crab. According to blue crab winter dredge survey data collected by the Virginia Institute of Marine Science (VIMS) between 2009 and 2016 WTAPS (Lipcius & Knick, 2016), the southern portion of WTAPS, supports a high abundance of overwintering female blue crabs. Adverse effects to these overwintering female crabs would be reduced by instead placing dredged material at WTAPSNE. Thus, the proposed action would be consistent with policies seeking to conserve and enhance the blue crab fishery. The proposed action to place dredged material in open water at WTAPSNE would otherwise be equivalent in effect to ongoing placement of material at the WTAPS. Open water menhaden and striped bass fisheries would continue to be temporarily impacted by navigation limitations in WTAPSNE during each placement cycle, but would instead utilize other adjacent open Bay waters as they currently do when material is placed at WTAPS.

Subaqueous Lands Management - The VA program establishes conditions for granting or denying permits to use state-owned bottomlands based on considerations of potential effects on marine and fisheries resources, wetlands, adjacent or nearby properties, anticipated public and private benefits, and water quality standards.

The benthic community in WTAPSNE is characterized by opportunistic and equilibrium species that are adapted to and tolerant of bottom-disturbing events such as major storms. The existing community is also probably exposed to episodic oxygen stress and hypoxia, at least during some summers. Bottom-dump placement of dredged material typically produces mounded deposits on the Bay bottom, and the thickness of such mounds and the force of impacting sediment will be lethal to benthic organisms within the footprint of the deposit.

It is expected that the benthic community would recolonize within approximately one season, or at most 1.5 years. It is expected that the project would have minimal effect on the benthic communities. Many organisms would be able to burrow back to the surface, and recolonization would occur due to immigration from adjacent and nearby locations.

During the anticipated life of the project, successive dredged material placement events will raise the average bottom elevation within the project area from the current average of -36 feet MLLW, up to a maximum of -30 feet MLLW. The actual magnitude of this change over time would be subject to rates of sedimentation within the York Spit Channel, as well as prevailing currents, major storms and other factors which affect the movement of sediments in the area. The relative

[1] USACE determined that VACZMP enforceable policies on marine antifoulant paints containing Tributyltin (TBT), wetlands management, dunes management, non-point source pollution control, shoreline sanitation and coastal lands management are not applicable to the proposed action.

change in depth would be greatest within the deep "trough" portion of WTAPSNE. The cumulative effects of this bathymetric change are not expected to constitute a substantially adverse effect on benthic communities. These depth changes may cause minor changes in the relative abundances of benthic taxa, but are not expected to fundamentally alter the benthic community type. Given that the deepest waters in the general vicinity of the project area are subject to seasonal hypoxia, it is possible that decreasing these depths, particularly within the trough, may reduce the frequency and severity of summer oxygen stress experienced by benthic organisms in those areas. The estimated decrease in average depths is based on current bathymetry and expected rates of dredging, and does not consider relative sea level changes. Recent climate models predict a relative rise in sea levels within the region which, regardless of magnitude, would have the effect at least partially offsetting the changes in depth caused by the project.

Short-term project effects to blue crabs would consist primarily of direct mortality, by burial or asphyxiation, of overwintering female crabs, when these crabs are present within the dredged material placement area. Cold temperatures reduce the crabs' locomotor ability, and would make overwintering females susceptible to mortality by burial, especially in overburden thicknesses greater than 10cm.

When assessing the significance of this effect, however, it must be remembered that the WTAPSNE site is believed to support fewer overwintering female crabs than the currently-used WTAPS site. As previously discussed, a deep muddy channel runs through the center of WTAPSNE. According to the Dredge Disposal Effects on Blue Crab Report provided by VIMS, crab density will almost always be low in muddy habitats. It is likely that within the deeper, muddy channel, crab density will almost always be low due to the muddy habitat, which is usually avoided as an overwintering habitat by blue crabs.

Point Source Pollution Control – Water quality certification (WQC) requirements of Section 401 of the Clean Water Act of 1972 are administered under the VA Water Protection Permit Program. The Clean Water Act requires states to verify and certify that applications for federal licenses or permits for discharge into navigable waters comply with state water quality standards.

Placement activities would generate turbidity that would cause temporary adverse impacts to water quality in the WTAPSNE during each placement cycle as material settles to the bottom and disperses in the water column. Depending on the size and types of dredge vessels used, 2 to 5 loads of dredged material would be placed at WTAPSNE per day. Each maintenance dredging cycle would take approximately 4 ½ months, every four years. Each open water placement load would create some degree of turbidity in excess of ambient conditions up to 6,500 ft from the discharge location for less than an hour. Additionally, infrequent resuspension of placed material from the bottom would occur when high wave energy generates strong bottom currents. However, impacts to water quality of proposed placement at WTAPSNE would be equivalent to open water placement at WTAPS. Thus, there would be no change in impacts to water quality from the proposed action. USACE would abide by stipulations imposed by VA to protect water quality.

Because the proposed action is a USACE project, it is USACE's understanding that WQC requirements will be evaluated under the CZMP Consistency Certification process[2]. On October 30, 2013, the Commonwealth of Virginia issued a VA Water Protection Permit (13-0593) and a Section 401 WQC for placement of dredged material into WTAPS from maintenance dredging of the York Spit Channel. The permit and WQC expire on October 29, 2028.

Air Pollution Control - The program implements the federal Clean Air Act to provide a legally enforceable State Implementation Plan (SIP) for the attainment and maintenance of the National Ambient Air Quality Standards (NAAQS).

Mathews County, VA (the closest county to the proposed action area) and neighboring VA counties including Gloucester, York and Northampton Counties are all currently in attainment with the NAAQS (40 CFR Part 50) for the six principal criteria pollutants. Because the proposed action area is in attainment and no new stationary emissions sources will be created as part of the proposed action, no air quality conformity analysis is required. The proposed action would be in accordance with the VA SIP.

Summary of Findings

Based upon the information, data, and analysis summarized above and presented in the WTAPSNE draft FONSI and EA, USACE finds that the WTAPSNE is consistent to the maximum extent practicable with the enforceable policies of the VACZMP. The proposed project would be constructed and operated in a manner that is consistent with the VACZMP. USACE certifies that the proposed activity complies with the enforceable policies of the VACZMP and will be conducted in a manner consistent with the VACZMP.

Pursuant to 15 CFR Section 930.41, the VACZMP has 60 days from the receipt of this letter in which to concur with or object to this Consistency Determination, or to request an extension under 15 CFR section 930.41(b). Virginia's concurrence will be presumed if its response is not received by the USACE Baltimore District on the 60th day from receipt of this determination. The State's response should be sent to:

U.S. Army Corps of Engineers, Baltimore District
Attn: Kristina May, Biologist
Planning Division
2 Hopkins Plaza
Baltimore, MD 21201
kristina.k.may@usace.army.mil

[2] Personal communication, David Davis of VADEQ on 5/13/2019 to Andrew May, USACE.

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
Street address: 1111 East Main Street, Suite 1400, Richmond, VA 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

September 17, 2019

U.S. Army Corps of Engineers- Baltimore District
ATTN: Kristina May, Biologist
Planning Division
2 Hopkins Plaza
Baltimore, MD 21201
Via Email: Kristina.k.may@usace.army.mil

RE: Comments on the Draft Environmental Assessment and Federal Consistency Determination for the Wolf Trap Alternate Open Water Placement Site Northern Extension (WTAPSNE), U.S. Army Corps of Engineers, Virginia Waters of the Chesapeake Bay (DEQ 19-0074F).

Dear Ms. May:

The Commonwealth of Virginia has completed its review of the above-referenced documents. The Department of Environmental Quality (DEQ) is responsible for coordinating Virginia's review of federal environmental documents submitted under the National Environmental Policy Act (NEPA) and responding to appropriate federal officials on behalf of the Commonwealth. DEQ is also responsible for coordinating Virginia's review of federal consistency documents submitted pursuant to the Coastal Zone Management Act (CZMA) and providing the state's response. This is in response to the July 2019 Draft Environmental Assessment (DEA) and the Federal Consistency Determination (FCD) for the above referenced project received July 19, 2019. The following agencies participated in the review of this proposal:

Department of Environmental Quality
Department of Historic Resources (DHR)
Marine Resources Commission (VMRC or Commission)
Virginia Institute of Marine Science (VIMS)
Department of Game and Inland Fisheries (DGIF)

PROJECT DESCRIPTION

The U.S. Army Corps of Engineers (Corps) proposes to establish a northern extension of the existing 2,300-acre Wolf Trap Alternate Open Water Placement Site (WTAPS), increasing the size of the site by approximately 3,900 acres. The new site, known as the Wolf Trap Alternate Open Water Placement Site Northern Extension (WTAPSNE) will be used as a placement site for 2.6 million cubic yards (mcy) of dredged material from the operation and maintenance of the York Spit Channel, a federally-maintained channel which is part of the Baltimore Harbor and Channels 50-Foot Navigation project. The initial placement event is expected to begin in late fall 2019. Depending on the size and types of dredge vessels used, two to five loads of dredge material would be placed at WTAPSNE per day. Approximately every four years thereafter, an additional 1.5 mcy of dredged material from the channel will be placed in the WTAPSNE. Each maintenance dredging cycle is expected to take approximately four and a half months. The WTAPSNE will be primarily used as an open water placement site for dredged material from the York Spit Channel, but may be used for placement of material from other dredging projects in the lower Chesapeake Bay, pending evaluation. The proposed action is solely for the establishment of the new placement site and does not include any changes to or consideration of ongoing maintenance dredge activities.

CONCLUSION

Concerns related to impacts to subaqueous lands and fisheries resources have been raised by VMRC and VIMS. Coordination with VMRC will be necessary to address concerns related to the subaqueous lands management and fisheries management enforceable policies of the Virginia Coastal Zone Management (CZM) Program, particularly as they relate to maintenance cycles beyond the 2019 cycle. DEQ conditionally concurs that the proposal is consistent with the Virginia Coastal Zone Management (CZM) Program provided all applicable permits and approvals of the enforceable policies of the Virginia CZM Program and conditions outlined in this document are met. Refer to the Federal Consistency under the Coastal Zone Management Act section (pages 10-11) for more details.

Provided activities are performed in accordance with the recommendations which follow in the Environmental Impacts and Mitigation section of this report, this proposal is unlikely to have significant effects on ambient air quality, water quality, tidal or non-tidal wetlands, and historic resources. It is unlikely to adversely affect fish species listed by state agencies as rare, threatened, or endangered.

ENVIRONMENTAL IMPACTS AND MITIGATION

1. Water Quality and Wetlands. According to the DEA (page 46), the open water placement of dredge material will create some turbidity up to 6,500 feet from the discharge location. Due to the high flushing rate of the Chesapeake Bay, turbidity plumes are expected to disperse quickly and no long-term impacts to water quality are expected. Impacts to non-tidal wetlands were not identified in the DEA or FCD.

According to the FCD (page 4) an individual Virginia Water Protection Permit (15-0593) and Section 401 Water Quality Certification (WQC) was issued by DEQ on October 30, 2013 for the maintenance dredging of the York Spit Channel and the placement of dredged material into WTAPS. The permit and WQC expire on October 29, 2028.

1(a) Agency Jurisdiction. The State Water Control Board promulgates Virginia's water regulations covering a variety of permits to include the Virginia Pollutant Discharge Elimination System Permit (VPDES) regulating point source discharges to surface waters, Virginia Pollution Abatement Permit regulating sewage sludge, storage and land application of biosolids, industrial wastes (sludge and wastewater), municipal wastewater, and animal wastes, the Surface and Groundwater Withdrawal Permit, and the Virginia Water Protection (VWP) Permit regulating impacts to streams, wetlands, and other surface waters. The VWP permit is a state permit which governs wetlands, surface water, and surface water withdrawals and impoundments. It also serves as §401 certification of the federal Clean Water Act §404 permits for dredge and fill activities in waters of the U.S. The VWP Permit Program is under the Office of Wetlands and Stream Protection, within the DEQ Division of Water Permitting. In addition to central office staff that review and issue VWP permits for transportation and water withdrawal projects, the six DEQ regional offices perform permit application reviews and issue permits for the covered activities:

- Clean Water Act, §401;
- Section 404(b)(i) Guidelines Mitigation Memorandum of Agreement (2/90);
- State Water Control Law, Virginia Code section 62.1-44.15:20 *et seq*.; and
- State Water Control *Regulations*, 9 VAC 25-210-10.

The Virginia Marine Resources Commission regulates encroachments in, on or over tidal wetlands pursuant to Virginia Code §28.2-1200 through 1400.

1(b) Agency Findings. The VWP program at the DEQ Piedmont Regional Office (PRO) stated that it had no comment on the proposal.

DEQ Tidewater Regional Office confirmed that the individual Virginia Water Protection Permit (15-0593) was issued with an effective period of October 30, 2013 through October 29, 2028. The permit is for the maintenance dredging of the York Spit Channel and the disposal of spoils at the WTAPS. A permit modification is not required.

DEQ issued a letter to the Corps on October 2, 2015, defining when federal navigation channel dredging and aquatic resource restoration activities conducted by the Corps require a VWP Permit. It is DEQ's position that, provided a FCD submitted by the Corps for maintenance dredging of an existing federal navigation has received DEQ's concurrence that the project is consistent to the maximum extent practicable with the enforceable policies of the Virginia CZM Program, no VWP Permit or permit fee will be required, including reissuance of any expired VWP permit.

According to TRO, if the project proceeds as proposed and the proponent complies with all CZM recommendations, then this satisfies our Section 401 certification requirements.

The VMRC did not indicate that tidal wetlands under its jurisdiction will be impacted.

1(c) CZMA Federal Consistency. As proposed, this project is consistent with the wetlands management enforceable policy of the Virginia Coastal Zone Management (CZM) Program (see Federal Consistency under the CZMA section below for additional information).

2. Subaqueous Lands. According to the DEA (page 28), the bottom of the proposed action area is a flat, featureless plain with a deep channel running lengthwise through the site. Water depths range from 23-55 feet mean lower low water (MLLW), with an average depth of 36 MLLW. The DEA (page 46) notes that overboard placement of dredge material will alter the bathymetry of the site. The thickness of material that would be deposited from one maintenance dredge cycle of the York Spit Channel would range from two inches to two feet thick. The capacity of WTAPSNE is over 30 mcy which assumes placement of material within the site boundaries up to an approximate depth of -30 feet MLLW. Over the life of the project (through 2100) the depth of the site could change from -36 MLLW to -30 MLLW.

The FCD (page 2) notes the bottom-dump placement of dredged material will be lethal to benthic organisms due the force of impacting sediment and the burial of organisms. The benthic community is expected to recolonize within approximately one season or at most one and a half years.

2(a) Agency Jurisdiction. The Virginia Marine Resources Commission regulates encroachments in, on or over state-owned subaqueous beds as well as tidal wetlands and beaches and dunes pursuant to Virginia Code §28.2-1200 through 1400. For nontidal waterways, VMRC states that it has been the policy of the Habitat Management Division to exert jurisdiction only over the beds of perennial streams where the upstream drainage area is 5 square miles or greater. The beds of such waterways are considered public below the ordinary high water line.

2(b) Agency Comments. VMRC states that WTAPSNE is located on submerged lands of the Commonwealth. The use of the original site (WTAPS) for dredged material disposal was authorized by virtue of a 1981 agreement between Virginia and Maryland

for material dredged from the Baltimore Harbor Channel within the Virginia portion of the Chesapeake Bay. The agreement stipulates that Virginia may designate alternate disposal sites such as the WTAPSNE.

The VMRC and VIMS have provided extensive scoping comments and participated in numerous meetings with the Baltimore District since 2013 outlining the Commonwealth's position on the adverse impacts to blue crab and finfish resources impacted by the overboard placement of dredged material at WTAPS. In light of these concerns, Virginia Secretary of Natural Resources Matthew Strickler advised in his January 14, 2019, letter to Colonel John Litz that the Commonwealth cannot support the future use of WTAPS. He recommended that the placement of the material dredged from York Spit be restricted to the 2019 maintenance cycle only and that any future maintenance include a thorough evaluation of alternative options that include beneficial use opportunities as well as disposal outside the Chesapeake Bay. For the next maintenance cycle (2019), VMRC and VIMS had recommended moving the placement to the north, in what has been referred to now as the WTAPSNE in order to reduce impacts on blue crabs.

2(c) Agency Finding. Given the project's potential for adverse impacts to marine resources in the Commonwealth, use of WTAPSNE beyond the 2019 maintenance cycle is viewed by the Commission as inconsistent with the submerged lands enforceable policy that is part of Virginia's Coastal Zone Management Program.

2(d) Agency Recommendation. Suitable dredge material must be recognized as a resource for potential beneficial projects throughout the Commonwealth. Furthermore, the ongoing practice to pursue overboard placement in the Commonwealth of Virginia as the “least costly, environmentally acceptable alternative” needs to be reconsidered in light of potential adverse ecological impacts to the Chesapeake Bay and adverse economic impacts to the Commonwealth's tidal fisheries.

2(e) VMRC Requirement. For consistency in the 2019 maintenance cycle, overboard placement must be limited to Cells 4 and 5 at WTAPSNE given the deeper waters present.

Unless the 1981 Agreement is maintained or amended for future maintenance cycles, any potential future use of WTAPSNE beyond the 2019 maintenance cycle may only be authorized by the full Commission by subaqueous permit provided the Port of Maryland and the Baltimore District demonstrate that significant progress has been achieved in the evaluation of beneficial use alternatives. Should significant progress not be demonstrated, consistency may only be achieved by eliminating the overboard placement of dredge spoil in the Virginia portion of the Chesapeake Bay.

2(f) CZMA Federal Consistency. Further coordination with and approvals from VMRC are necessary in order for the project to be consistent to the maximum extent practicable with the subaqueous lands management enforceable policy of the Virginia

CZM Program (see **Federal Consistency Conditional Concurrence**, page 11).

3. Fisheries Management. The DEA (page 44) notes that slow-moving benthic fish species, eggs and larvae would be buried by sediment but adverse effects to bottom feeder finfish are expected to be negligible. Most finish will be only temporarily displaced in the water column by the activity.

According to the FCD (page 2), the proposed action was developed to minimize impacts to wintering blue crab populations. Based on surveys completed by VIMS from 2009-2016, WTAPS was determined to support a high abundance of overwintering female blue crabs. Adverse effects to the crabs would be reduced by placing dredge material at WTAPSNE. Impacts to open water menhaden and striped bass fisheries would continue to be temporary as a result of the dredge placement. These species would be able to utilize other adjacent open Bay waters as they currently do when material is placed in WTAPS.

3(a) Agency Jurisdiction. The Department of Game and Inland Fisheries (Virginia Code 29.1-100 to 29.1-570) and Virginia Marine Resources Commission (Virginia Code 28.2-200 to 28.2-713) have management authority for the conservation and enhancement of finfish and shellfish resources in the Commonwealth.

3(b) Agency Comments.

3(b)(i) Virginia Department of Game and Inland Fisheries. DGIF states that as the open water placement site is located in the Chesapeake Bay, it defers the consistency determination to VMRC.

3(b)(ii) Virginia Marine Resources Commission. As stated above, extensive discussions have been held with the Baltimore District since 2013 outlining the Commonwealth's position on the adverse impacts to blue crab and finfish resources impacted by the overboard placement of dredged material at WTAPS.

As a result of these discussions, the Commonwealth, via the Secretary of Natural Resources (January 14, 2019 letter to Colonel John Litz), recommended that the placement of the material dredged from York Spit be restricted to the 2019 maintenance cycle only and that any future maintenance include a thorough evaluation of alternative options that include beneficial use opportunities as well as disposal outside the Chesapeake Bay. For the next maintenance cycle (2019), VMRC and VIMS recommended moving the placement to the north, to the WTAPSNE site in order to reduce impacts on blue crabs and that this placement be restricted to Cells 4 and 5 only.

3(b)(iii) Virginia Institute of Marine Science. VIMS has been involved with this issue since early 2014 and has been actively engaged in discussion, study and collaboration with the involved parties regarding the environmental effects of overboard spoil

placement at WTAPS, alternatives to reduce adverse effects, and future dredge spoil management in the waters of the Commonwealth. The DEA addresses some of the environmental concerns that emerged during this process and directly incorporates the recommendations of VIMS and the VMRC to place dredge spoil in a deepwater area immediately north of WTAPS (delineated as WTAPSNE).

VIMS data on overwintering blue crab distribution patterns and spoil depth effects on blue crab mortality provides justification for eliminating dredge spoil placement at WTAPS. Winter survey data from 2009-2018 show that WTAPSNE is not devoid of overwintering crabs, but it contains consistently lower densities than WTAPS. A recent publication and study (Saluta *et al*., 2019) shows that 10 centimeters (3.9 inches) of dredge spoil deposition depths result in high mortalities of mature female crabs, while smaller mature females suffer substantial mortality and sublethal effects at even lower levels of dredge spoil deposition (as shallow as 2.5 centimeters (1 inch) of sediment). These data demonstrate the direct threats to Virginia blue crab resources from overboard dredge spoil placement upon state-owned subaqueous bottoms, and it should be understood that adverse effects (both temporary and longer term) also occur to other important Bay species. VIMS is confident that the use of WTAPSNE as an alternative to WTAPS will reduce adverse environmental impacts to critical Bay resources; most importantly, overwintering female blue crabs.

During prior coordination efforts, VIMS had the understanding that WTAPSNE was an interim environmentally-advantageous strategy. The DEA addresses some beneficial use alternatives, yet all are dismissed and accompanied by statements that none will be retained for further assessment.

3(c) VMRC Finding. Given the project's potential for adverse impacts to marine resources in the Commonwealth, use of WTAPSNE beyond the 2019 maintenance cycle is viewed by the Commission as inconsistent with the fisheries management enforceable policy that is part of Virginia's Coastal Zone Management Program.

3(d) Agency Recommendations.

3(d)(i) VMRC. As stated above, suitable dredge material must be recognized as a resource for potential beneficial projects throughout the Commonwealth. Furthermore, the ongoing practice to pursue overboard placement in the Commonwealth of Virginia as the “least costly, environmentally acceptable alternative” needs to be reconsidered in light of potential adverse ecological impacts to the Chesapeake Bay and adverse economic impacts to the Commonwealth's tidal fisheries.

3(d)(ii) VIMS. VIMS encourages the pursuit of alternatives to overboard placement of dredge spoil within the Chesapeake Bay due to effects to local water quality and living resources. VIMS continues to advocate the need to rethink overboard disposal and establish beneficial use strategies in the Bay waters of the Commonwealth. In the interest of Chesapeake Bay living resources and water quality, VIMS recommends

continuing efforts to secure strategies for near-future beneficial use of dredge spoil.

Further reduction of likely adverse impacts could be achieved by modifying the planned placement of dredge spoil for the upcoming maintenance dredging of York Spit Channel from NE6 QTR1 (abutting the northern boundary of WTAPS) to deeper areas a short distance north within WTAPSNE, such as the southwestern areas of NE5 or NE4 (EA Figure 4). VIMS and VMRC identified this area due to its depth relative to surrounding Bay bottoms and the understanding that these deeper waters are less favorable to female blue crabs as overwintering grounds. VIMS recommends these alternative placement areas as a strategy to minimize likely adverse impacts to overwintering blue crabs to the maximum possible extent.

3(e) VMRC Requirement. For consistency in the 2019 maintenance cycle, overboard placement must be limited to Cells 4 and 5 at WTAPSNE given the deeper waters present.

Unless the 1981 Agreement is maintained or amended for future maintenance cycles, any potential future use of WTAPSNE beyond the 2019 maintenance cycle may only be authorized by the Commission by subaqueous permit provided the Port of Maryland and the Baltimore District demonstrate that significant progress has been achieved in the evaluation of beneficial use alternatives. Should significant progress not be demonstrated, consistency may only be achieved by eliminating the overboard placement of dredge spoil in the Virginia portion of the Chesapeake Bay.

3(f) CZMA Federal Consistency. Further coordination with VMRC is required in order for the project to be considered consistent to the maximum extent practicable with the fisheries management enforceable policy of the Virginia CZM Program (see **Federal Consistency Conditional Concurrence**, page 11).

4. Air Pollution Control. According to the DEA (page 43), minor, short-term impacts to air quality may result from the transport of dredged material to the placement site. No long-term effects are anticipated. The FCD (page 4) states that Mathews County, the closest county to the proposed action and the neighboring counties of Gloucester, York, and Northampton are in attainment with the six principal criteria pollutants of the National Ambient Air Quality Standards. No new stationary sources will be created by this project.

4(a) Agency Jurisdiction. The DEQ Air Division, on behalf of the State Air Pollution Control Board, is responsible for developing regulations that implement Virginia's Air Pollution Control Law (Virginia Code §10.1-1300 *et seq.*). DEQ is charged with carrying out mandates of the state law and related regulations as well as Virginia's federal obligations under the Clean Air Act as amended in 1990. The objective is to protect and enhance public health and quality of life through control and mitigation of air pollution. The division ensures the safety and quality of air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and

federal agencies to plan and implement strategies to protect Virginia's air quality. The appropriate DEQ regional office is directly responsible for the issuance of necessary permits to construct and operate all stationary sources in the region as well as monitoring emissions from these sources for compliance. In the case of certain projects, additional evaluation and demonstration must be made under the general conformity provisions of state and federal law.

The Air Division regulates emissions of air pollutants from industries and facilities and implements programs designed to ensure that Virginia meets national air quality standards. The most common regulations associated with major projects are:

- Open burning: 9 VAC 5-130 *et seq.*
- Fugitive dust control: 9 VAC 5-50-60 *et seq.*
- Permits for fuel-burning equipment: 9 VAC 5-80-1100 *et seq.*

4(b) Agency Findings. According to the DEQ Air Division, the project site is located in a designated ozone attainment area.

4(c) Fugitive Dust Requirements. During project operations, fugitive dust must be kept to a minimum by using control methods outlined in 9 VAC 5-50-60 *et seq.* of the *Regulations for the Control and Abatement of Air Pollution*. These precautions include, but are not limited to, the following:

- Use, where possible, of water or chemicals for dust control;
- Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials; and
- Covering of open equipment for conveying materials.

4(d) CZMA Federal Consistency. The project is consistent with the air pollution control enforceable policy of the Virginia CZM Program, provided adherence to the above requirements.

5. Historic and Archeological Resources. The DEA (page 44) states that a Programmatic Agreement is being developed in consultation with DHR to avoid any adverse effects to historic resources.

5(a) Agency Jurisdiction. The Department of Historic Resources (DHR) conducts reviews of projects to determine their effect on historic structures or cultural resources under its jurisdiction. DHR, as the designated State's Historic Preservation Office, ensures that federal actions comply with Section 106 of the National Historic Preservation Act of 1962 (NHPA), as amended, and its implementing regulation at 36 CFR Part 800. The NHPA requires federal agencies to consider the effects of federal projects on properties that are listed or eligible for listing on the National Register of Historic Places. Section 106 also applies if there are any federal involvements, such as licenses, permits, approvals or funding.

5(b) Agency Findings. Pursuant to Section 106 of the National Historic Preservation Act, DHR has been in direct consultation with the Corps regarding this project and the parties have reached consensus that the Wormley Creek Federal Navigation project will have no adverse effect on historic resources. DHR has no further comment at this time.

5(c) Agency Requirement. Continue to consult directly with DHR, as necessary, pursuant to Section 106 of the National Historic Preservation Act (as amended) and its implementing regulations codified at 36 CFR Part 800 which require Federal agencies to consider the effects of their undertakings on historic properties.

FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT
Pursuant to the Coastal Zone Management Act of 1972 (§ 1456(c)), as amended, and the federal consistency regulations implementing the CZMA (15 CFR Part 930, Subpart C, § 930.30 *et seq*.), federal actions that can have reasonably foreseeable effects on Virginia's coastal uses or resources must be conducted in a manner which is consistent, to the maximum extent practicable, with the Virginia Coastal Zone Management (CZM) Program. The Virginia CZM Program is comprised of a network of programs administered by several agencies. In order to be consistent with the Virginia CZM Program, the federal agency must obtain all the applicable permits and approvals listed under the enforceable policies of the Virginia CZM Program prior to commencing the project.

Federal Consistency Public Participation
In accordance with 15 CFR § 930.2, public notice of the proposed action was published in the OEIR Program Newsletter and on DEQ's web site from July 30, 2019 to August 23, 2019. No public comments were received in response to the notice.

Federal Consistency Documentation
A Federal Consistency Determination for the proposed Wolf Trap Alternate Open Water Placement Site Northern Extension project was submitted with the DEA. The document provided an analysis of the project's impact on the applicable enforceable policies. According to the FCD, the project will be consistent to the maximum extent practicable with each of the enforceable policies and will have no significant impact on Virginia's coastal zone.

The FCD states that the proposed activity will have no effect on the following enforceable policies of the Coastal Zone Management Program: wetlands management, dunes management, non-point source pollution control, coastal lands management, and shoreline sanitation.

Analysis of Enforceable Policies
The applicable enforceable policies (including fisheries management, subaqueous lands management, wetlands management and air pollution control) including jurisdictional agency comments, recommendations, and requirements are discussed above in the

"Environmental Impacts and Mitigation" section of this document.

Federal Consistency Conditional Concurrence
Based on our review of the FCD and the comments submitted by agencies administering the enforceable policies of the CZM Program, DEQ **conditionally concurs** that the proposal is consistent with the CZM Program provided all applicable permits and approvals of the enforceable policies of the Virginia CZM Program and conditions outlined below are met. VMRC has raised concerns related to the consistency of the project with the fisheries management and subaqueous lands management enforceable policies of the Virginia CZM Program beyond the 2019 dredge and placement cycle. Unless the 1981 Agreement between Virginia and Maryland is maintained or amended for future maintenance cycles, any potential future use of WTAPSNE beyond the 2019 maintenance cycle may only be authorized by the Commission by subaqueous permit. Should significant progress not be demonstrated, consistency may only be achieved by eliminating the overboard placement of dredge spoil in the Virginia portion of the Chesapeake Bay.

Other state approvals which may apply to this project are not included in this consistency concurrence. Therefore, the Corps must ensure that this project is operated in accordance with all applicable federal, state and local laws and regulations. In addition, the Corps is encouraged to consider the potential project impacts on the Advisory Polices of the Virginia CZM Program (https://www.deq.virginia.gov/Programs/EnvironmentalImpactReview/FederalConsistencyReviews.aspx#advisory).

Conditions of Concurrence with the FCD
The conditions of the Commonwealth's concurrence include the following authorizations under the Virginia CZM Program which will be required for the use of WTAPSNE beyond the 2019 maintenance cycle:

- a permit issued by VMRC for encroachments on or over state-owned subaqueous beds authorized under § 28.2-1200 *et seq*. of the Virginia Code unless the 1981 Agreement is maintained or amended for future maintenance cycles .

In accordance with the *Federal Consistency Regulations* 15 CFR Part 930, section 930.4, this conditional concurrence is based on the Corps obtaining necessary authorizations prior to initiating project activities. If the requirements of section 930.4, sub-paragraphs (a)(1) through (a)(3) are not met, this conditional concurrence becomes an objection under 15 CFR Part 930, section 930.43.

REGULATORY AND COORDINATION NEEDS

1. Subaqueous Lands. Coordinate with VMRC (Randy Owen, 757-247-2251) to address its concerns and recommendations regarding adverse impacts to subaqueous

lands. The Corps must obtain a submerged lands permit for the use of WTAPSNE beyond the 2019 maintenance cycle and should coordinate with VMRC to meet this requirement.

2. Fisheries Resources. Coordinate with VMRC (Randy Owen, 757-247-2251) regarding the proposed placement of material in the 2019 maintenance cycle being limited to Cells 4 and 5 at WTAPSNE given the deeper waters present.

3. Air Pollution Control. This project is subject to air quality regulations administered by the Department of Environmental Quality. The state air pollution regulations that may apply this project are:

- fugitive dust and emissions control (9 VAC 5-50-60 *et seq*.)

For additional information and coordination, contact DEQ-TRO (757-518-2000).

CONCLUSION

Thank you for the opportunity to review and respond to the Draft Environmental Assessment and Federal Consistency Determination for the Wolf Trap Alternate Open Water Placement Site Northern Extension project. Detailed comments of reviewing agencies are attached for your review. Please contact me at (804) 698-4204 or Janine Howard at (804) 698-4299 for clarification of these comments.

Sincerely,

Bettina Rayfield, Program Manager
Environmental Impact Review

Ec: Amy Ewing, DGIF
Roger Kirchen, DHR
Tony Watkinson, VMRC
Randy Owen, VMRC
Emily Hein, VIMS
Kristina May, Corps

COMMONWEALTH of VIRGINIA

Marine Resources Commission
380 Fenwick Road
Bldg 96
Fort Monroe, VA 23651-1064

Matthew J. Strickler
Secretary of Natural Resources

Steven G. Bowman
Commissioner

August 21, 2019

Ms. Janine Howard
Department of Environmental Quality
Office of Environmental Impact Review
1111 East Main St.
Richmond, VA 23219

Re: Wolf Trap Alternate Open Water Placement Site Northern Extension (WTAPSNE)
Project Number: DEQ #19-074F, DEA/Federal Consistency Determination

Dear Ms. Howard:

This will respond to your agency's request for review of the above-referenced Draft Environmental Assessment (DEA) and Coastal Zone Management Act (CZMA) Consistency Determination, prepared by the U. S. Army Corps of Engineers, Baltimore District. Specifically, the project would establish an extension of the existing Wolf Trap Alternate Open Water Placement Site (WTAPS) to the north, increasing the size of the placement site by approximately 3,900 acres, herein referred to as the Wolf Trap Alternate Open Water Placement Site Northern Extension (WTAPSNE).

The WTAPSNE is located on submerged lands of the Commonwealth of Virginia. Use of the original site (WTAPS) was authorized by virtue of a 1981 agreement between Virginia and Maryland for material dredged from the Baltimore Harbor Channel within the Virginia portion of the Chesapeake Bay. That agreement stipulates that Virginia may designate alternate disposal sites such as the WTAPSNE.

As you may be aware, the Virginia Marine Resources Commission (VMRC) and the Virginia Institute of Marine Science (VIMS) have provided extensive scoping comments and participated in numerous meetings with the Baltimore District since 2013 outlining the Commonwealth's position on the adverse impacts to blue crab and finfish resources impacted by the overboard placement of dredged material at WTAPS. In light of these concerns, Virginia Secretary of Natural Resources Matthew Strickler advised in his January 14, 2019, letter to Colonel John Litz that the Commonwealth cannot support the future use of WTAPS. He recommended that the placement of the material dredged from York Spit be restricted to the 2019 maintenance cycle only and that any future maintenance include a thorough evaluation of alternative options that include beneficial use opportunities as well as disposal outside the Chesapeake Bay. For the next maintenance cycle, VMRC and VIMS had recommended moving the placement to the north, in what has been referred to now as the WTAPSNE in order to reduce impacts on blue crabs.

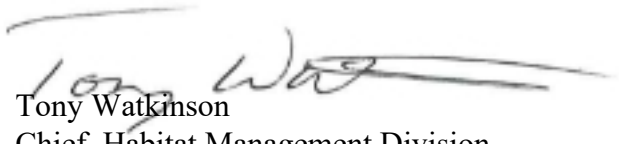
Accordingly, given the project's potential for adverse impacts to marine resources in the Commonwealth, use of WTAPSNE beyond the 2019 maintenance cycle is viewed by the Commission as inconsistent with our submerged lands and fisheries management responsibilities that are part of Virginia's Coastal Zone Management Program. To meet consistency, we recommend that the 2019 maintenance cycle be limited to Cells 4 & 5 at WTAPSNE given the deeper waters present. Unless the 1981 Agreement is maintained or amended for future maintenance cycles, any potential future use of WTAPSNE beyond the 2019 maintenance cycle may only be authorized by the full Commission by subaqueous permit provided the Port of Maryland and the Baltimore District demonstrate that significant progress has been achieved in the evaluation of beneficial use alternatives.

Should significant progress not be demonstrated, consistency may only be achieved by eliminating the overboard placement of dredge spoil in the Virginia portion of the Chesapeake Bay.

In summary, we believe it is important that suitable dredge material must be recognized as a resource for potential beneficial projects throughout the Commonwealth. Furthermore, the ongoing practice to pursue overboard placement in the Commonwealth of Virginia as the “least costly, environmentally acceptable alternative” needs to be reconsidered in light of potential adverse ecological impacts to the Chesapeake Bay and adverse economic impacts to the Commonwealth's tidal fisheries.

Should you have any questions regarding this letter, please contact me or Randy Owen of my staff at (757) 247-2251.

Sincerely,



Tony Watkinson
Chief, Habitat Management Division

The Honorable Matthew Strickler, Secretary of Natural Resources
Steven G. Bowman, Commissioner
Rob O'Reilly, Fisheries Management Division
Mark Luckenbach, Virginia Institute of Marine Science
Bettina Sullivan, Department of Environmental Quality
Dave O'Brien, NOAA, National Marine Fisheries Service

COMMONWEALTH of VIRGINIA

Office of the Governor

Matthew J. Strickler
Secretary of Natural Resources

January 14, 2019

Colonel John Litz
Department of the Army
Baltimore District, Corps of Engineers
2 Hopkins Plaza
Baltimore, MD 21201

Re: Overboard Disposal of Dredged Material In the Chesapeake Bay

Dear Colonel Litz:

This letter regards the Baltimore District's current and future proposed uses of the Wolf Trap Alternate Placement Site (WTAPS) and the Rappahannock Shoals Alternate Placement Site (RSAPS) for the overboard disposal of material generated from the maintenance dredging of the Virginia portion of the Baltimore Channel and from the anticipated widening of the Baltimore 50' Project Channel. I understand that you have scheduled a meeting between the Virginia Marine Resources Commission (VMRC) and the Baltimore District to discuss this matter and I have requested Commissioner Bowman provide this letter.

While a 1981 letter from Virginia to Maryland authorized temporary use of these sites, the letter clearly provides that the Commonwealth of Virginia may designate alternative disposal sites in the Chesapeake Bay. Because of the potential impacts to fishery resources, the Commonwealth cannot support any future use of WTAPS. The Commonwealth also has significant concern about the potential future use of RSAPS.

I am concerned that the Baltimore District has not considered an alternative placement option for the WTAPS identified by VMRC and the Virginia Institute of Marine Science (VIMS) for upcoming maintenance dredging of the York Spit Channel. I also am concerned that plans for the widening of the channel would utilize the same sites that were designated as a result of the 1981 letter without consideration of beneficial use options for future new dredge material and without consideration of the science or our current Governor's position on this issue.

The Commonwealth has stressed that the use of WTAPS threatens blue crab and multiple fish species identified by NOAA in its review of the Essential Fish Habitat assessement of WTAPS.

As an alternative, on behalf of the Commonwealth, I recommend that the Baltimore District limit the placement of the dredge material generated by the 2018 - 2019 maintenance dredging cycle at either alternative placement site previously identified by VMRC and VIMS. Further, that such

use of the alternative location in Virginia, if chosen, be restricted to the 2018 - 2019 cycle and that any future maintenance and proposed widening of this channel include a thorough evaluation of alternative options that include beneficial use opportunities as well as disposal outside the Chesapeake Bay.

Virginia stands ready to work with the Baltimore District to resolve this matter and to identify alternative dredge material placement options that focus on the beneficial uses and innovative reuse of dredge material.

Sincerely,

Matthew J. Strickler

cc: Steven G. Bowman, Commissioner, Virginia Marine Resources Commission
Ellen Bolen, Deputy Commissioner, Virginia Marine Resources Commission

August 8, 2019

Janine Howard
Office of Environmental Impact Review
Virginia Department of Environmental Quality
1111 E. Main Street
Richmond, VA 23219

Dear Ms. Howard:

The Virginia Institute of Marine Science (VIMS) has reviewed the July 2019 U.S. Army Corps of Engineers, Baltimore District's Draft Environmental Assessment (EA) for the Wolf Trap Alternate Open Water Placement Site Northern Extension (WTAPSNE) and offer the following comments. This assessment and response represents VIMS' most recent involvement in this issue which began in early 2014. Since that time VIMS personnel have been actively engaged in discussion, study, and collaboration with all involved parties regarding the environmental effects of overboard spoil placement at Wolf Trap Alternative Placement Site (WTAPS), alternatives to reduce adverse effects, and future dredge spoil management in the waters of the Commonwealth. This EA addresses some of the environmental concerns that emerged during this lengthy process and directly incorporates the recommendations of VIMS and the Virginia Marine Resources Commission (VMRC) to place dredge spoil in a deepwater area immediately north of WTAPS (delineated as WTAPSNE).

VIMS data on overwintering blue crab distribution patterns and spoil depth effects on blue crab mortality provides justification for eliminating dredge spoil placement at WTAPS. Winter Dredge Survey data from 2009-2018 show that although WTAPSNE is not devoid of overwintering crabs, it contains consistently lower densities than WTAPS. Also, Saluta *et al*. (2019) show that 10 centimeters (3.9 inches) of dredge spoil deposition depths result in high mortalities of mature female crabs, while smaller mature females suffer substantial mortality and sublethal effects at even lower levels of dredge spoil deposition (as shallow as 2.5 centimeters (1 inch) of sediment). These data demonstrate the direct threats to Virginia blue crab resources from overboard dredge spoil placement upon state-owned subaqueous bottoms, and it should be understood that adverse effects (both temporary and longer term) also occur to other important Bay species.

VIMS is confident that the use of WTAPSNE as an alternative to WTAPS will reduce adverse environmental impacts to critical Bay resources; most importantly, overwintering female blue crabs. However, we continue to encourage pursuit of alternatives to overboard placement of dredge spoil within Chesapeake Bay due to effects to local water quality and living resources. During our involvement with this issue there were consistent and clear messages regarding the need to rethink overboard disposal and establish beneficial use strategies in Bay waters of the Commonwealth, and VIMS had the understanding that WTAPSNE was an interim environmentally-advantageous strategy.

The EA addresses some beneficial use alternatives, yet all are dismissed and accompanied by statements that none will be retained for further assessment. In the interest of Chesapeake Bay living resources and water quality, we recommend continuing efforts to secure strategies for near-future beneficial use of dredge spoil.

Further reduction of likely adverse impacts could be achieved by modifying the planned placement of dredge spoil for the upcoming maintenance dredging of York Spit Channel from NE6 QTR1 (abutting the northern boundary of WTAPS) to deeper areas a short distance north within WTAPSNE, such as the southwestern areas of NE5 or NE4 (EA Figure 4). VIMS and VMRC identified this area due to its depth relative to surrounding Bay bottoms and the understanding that these deeper waters are less favorable to female blue crabs as overwintering grounds. We recommend these alternative placement areas as a strategy to minimize likely adverse impacts to overwintering blue crabs to the maximum possible extent.

Thank you for the opportunity to comment. Please contact me if you have questions or desire additional information.

Sincerely,

Lyle Varnell
Associate Director of Advisory Services

cc: Tony Watkinson, VMRC
David O'Brien, NOAA Fisheries

Reference

Saluta, G., G. Ralph, K. Knick, M. Seebo, and R. Lipcius. 2019. Lethal and sub-lethal effects of dredge spoil on overwintering mature female blue crabs: summary. Virginia Institute of Marine Science. 4 pp.

Commonwealth of Virginia

Howard, Janine <janine.howard@deq.virginia.gov>

Fwd: Wolf Trap, ACOE project

1 message

West, Kelley <kelley.west@deq.virginia.gov> Tue, Aug 27, 2019 at 3:10 PM
To: Janine Howard <janine.howard@deq.virginia.gov>

I sent the project to VWP group and they don't have any comments for this project.

---------- Forwarded message ---------
From: **Justin Brown** <justin.brown@deq.virginia.gov>
Date: Tue, Aug 27, 2019 at 12:55 PM
Subject: RE: Wolf Trap, ACOE project
To: Kelley West <kelley.west@deq.virginia.gov>

It doesn't look like DEQ VWP has a permit in these areas.

Justin Brown, PWD

Environmental Specialist

Virginia Water Protection Program

Department of Environmental Quality | Piedmont Region

4949-A Cox Road | Glen Allen, VA 23060

P: (804) 527 - 5054 | F: (804) 527 - 5106 | E: Justin.Brown@deq.virginia.gov

www.deq.virginia.gov

From: West, Kelley <kelley.west@deq.virginia.gov>
Sent: Tuesday, August 27, 2019 8:52 AM
To: Justin Brown <justin.brown@deq.virginia.gov>
Subject: Re: Wolf Trap, ACOE project

so the project is located in the bay near matthews county, CO just wanted to know if VWP had any concerns about the project.

the fileshare link to the project is located here.

https://www.deq.virginia.gov/fileshare/oeir/ACOE/Wolf%20Trap%20Alternate%20Open%20Water/

On Mon, Aug 26, 2019 at 2:21 PM Justin Brown <justin.brown@deq.virginia.gov> wrote:

> I don't recognize this project either. If you have a more exact location I can look to see if a permit has been issued.

Justin Brown, PWD

Environmental Specialist

Virginia Water Protection Program

Department of Environmental Quality | Piedmont Region

4949-A Cox Road | Glen Allen, VA 23060

P: (804) 527 - 5054 | F: (804) 527 - 5106 | E: Justin.Brown@deq.virginia.gov

www.deq.virginia.gov

From: Jones, Bryan <bryan.jones@deq.virginia.gov>
Sent: Friday, August 23, 2019 11:37 AM
To: West, Kelley <kelley.west@deq.virginia.gov>
Cc: Justin Brown <justin.brown@deq.virginia.gov>
Subject: Re: Wolf Trap, ACOE project

I do not recognize this project. Justin has Matthews County, so he may have seen something on it for the placement site, but depending on how the project was proposed it could also be in TRO if the work in the York Spit Channel is considered part of York County.

Bryan Jones
Environmental Specialist
Virginia Water Protection Program
Department of Environmental Quality | Piedmont Region
4949-A Cox Road | Glen Allen, VA 23060
P: (804) 527-5074 | F: (804) 527-5106 | E: Bryan.Jones@deq.virginia.gov
www.deq.virginia.gov

On Fri, Aug 23, 2019 at 11:06 AM West, Kelley <kelley.west@deq.virginia.gov> wrote:

> Do either of you know anything about this project? I am doing a environmental assessment on it, i think the wolf trap site is in matthews.
>
> WOLF TRAP ALTERNATE OPEN WATER PLACEMENT SITE NORTHERN EXTENSION
>
> The proposed action would establish an extension of WTAPS to the north, increasing the size of the placement site by approximately 3,900 acres, and is herein referred to as the “WTAPS Northern Extension” (WTAPSNE) (Figures 2-4). WTAPSNE would serve as an open water placement site for dredged material primarily from the York Spit Channel, but may also be used as a placement site for other dredging projects in the lower Chesapeake Bay pending evaluation. At this time, there are no plans to place dredged material from the York River Entrance Channel or the Wormley Creek Federal Navigation Project into WTAPSNE.
>
> --

Kelley West

Environmental Planner

Department of Environmental Quality

4949A Cox Road

Glen Allen, VA 23060

804-527-5029

--

Kelley West

Environmental Planner

Department of Environmental Quality

4949A Cox Road

Glen Allen, VA 23060

804-527-5029

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Kelley West
Environmental Planner
Department of Environmental Quality
4949A Cox Road
Glen Allen, VA 23060
804-527-5029

Commonwealth of Virginia

Howard, Janine <janine.howard@deq.virginia.gov>

RE: EIR 19-074F_Wolf Trap Alternate Open Water Placement Site Northern Extension (WTAPSNE)

1 message

Jeffrey Hannah <jeffrey.hannah@deq.virginia.gov> Thu, Sep 5, 2019 at 10:56 AM
To: Janine Howard <janine.howard@deq.virginia.gov>
Cc: Cindy Robinson <cindy.robinson@deq.virginia.gov>, Curtis Davey <curtis.davey@deq.virginia.gov>

Hi Janine –

Please find the following responses to your questions:

1. You are correct - the project will not require a modification to the 2013 permit, based on the 2015 federal navigation projects letter from David Paylor to the Corps.

2. Yes, the following statement is appropriate: *"If the project proceeds as proposed and the proponent complies with all CZM recommendations, then this satisfies our Section 401 certification requirements."*

Thank you for the follow-up!

Jeff

Jeffrey M. Hannah

Regional VWPP Program Manager
Virginia Water Protection Permit Program
Department of Environmental Quality
Tidewater Regional Office
5636 Southern Boulevard
Virginia Beach, Virginia 23462
(757) 518-2146

From: Howard, Janine <janine.howard@deq.virginia.gov>
Sent: Tuesday, September 3, 2019 3:15 PM
To: Curtis Davey <curtis.davey@deq.virginia.gov>; Jeffrey Hannah <jeffrey.hannah@deq.virginia.gov>
Cc: Cindy Robinson <cindy.robinson@deq.virginia.gov>; Janine Howard <janine.howard@deq.virginia.gov>
Subject: Fwd: EIR 19-074F_Wolf Trap Alternate Open Water Placement Site Northern Extension (WTAPSNE)

Good afternoon,

I have discovered that TRO was the correct region for this project. The project proposes to dispose of maintenance dredge spoils from the York Spit Channel which is part of the federally-maintained Baltimore Harbor and Channels 50-Foot Navigation project in the newly created Wolf Trap Alternate Alternate Open Water Placement Site- Northern Extension (WTAPSNE). TRO issued an individual VWP permit for the maintenance dredging of York Spit and disposal at Wolf Trap Alternate Open Water Placement Site (WTAPS) in 2013 (13-0593) and this permit is still active.

In the cover letter for this project the Corps indicated that they are looking for confirmation that the Water Quality Certification (WQC) pursuant to Section 401 of the CWA would be covered under the CZM process, and that a separate WQC request is not required.

I have two questions for TRO:

1. Would you confirm that this project will **not** require a modification of the 2013 permit even though the disposal site is proposed to move from WTAPS to WTAPSNE (the proposed action)? I have arrived at this conclusion based on the 2015 federal navigation projects letter from David Paylor to the Army Corps (attached) which states that, provided a FCD concurrence is obtained, federal navigation projects, including overboard disposal, will not require a VWP permit or permit fee including reissuance of any expired VWP permit.

2. Would you also confirm that the following statement is appropriate for this project?

"If the project proceeds as proposed and the proponent complies with all CZM recommendations, then this satisfies our Section 401 certification requirements."

This statement was developed in 2016 by CO VWP staff (Dave Davis) in follow-up to the 2015 letter and is supposed to be included in FCD reviews of federal navigation projects to address the Corps' concerns about obtaining their 401 certification.

I have placed the reference materials (FCD, cover letter and the 401 language emails) for this project on the T drive:

T:\EIR BRayfield\Wolf Trap Northern Extension

Thank you for your help!

Janine Howard
Environmental Impact Review Coordinator
Virginia Department of Environmental Quality
1111 East Main Street, Suite 1400

Richmond, VA 23219
804-698-4299

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR PROGRAM COORDINATION

ENVIRONMENTAL REVIEW COMMENTS APPLICABLE TO AIR QUALITY

TO: Janine L. Howard **DEQ - OEIR PROJECT NUMBER: DEQ #19-074F**

PROJECT TYPE: ☐ STATE EA / EIR **X FEDERAL EA / EIS** ☐ SCC

X CONSISTENCY DETERMINATION

PROJECT TITLE: Wolf Trap Alternate Open Water Placement Site Northern Extension

PROJECT SPONSOR: U.S. Army Corps of Engineers

PROJECT LOCATION: X OZONE ATTAINMENT AREA

REGULATORY REQUIREMENTSMAY BE APPLICABLE TO: **X** **CONSTRUCTION**
☐ OPERATION

STATE AIR POLLUTION CONTROL BOARD REGULATIONS THAT MAY APPLY:

1. ☐ 9 VAC 5-40-5200 C & 9 VAC 5-40-5220 E – STAGE I
2. ☐ 9 VAC 5-45-760 et seq. – Asphalt Paving operations
3. **X 9 VAC 5-130 et seq. – Open Burning**
4. **X 9 VAC 5-50-60 et seq. Fugitive Dust Emissions**
5. ☐ 9 VAC 5-50-130 et seq. - Odorous Emissions; Applicable to_____
6. ☐ 9 VAC 5-60-300 et seq. – Standards of Performance for Toxic Pollutants
7. ☐ 9 VAC 5-50-400 Subpart_____, Standards of Performance for New Stationary Sources, designates standards of performance for the_____
8. ☐ 9 VAC 5-80-1100 et seq. of the regulations – Permits for Stationary Sources
9. ☐ 9 VAC 5-80-1605 et seq. Of the regulations – Major or Modified Sources located in PSD areas. This rule may be applicable to the _____
10. ☐ 9 VAC 5-80-2000 et seq. of the regulations – New and modified sources located in non-attainment areas
11. ☐ 9 VAC 5-80-800 et seq. Of the regulations – State Operating Permits. This rule may be applicable to _____

COMMENTS SPECIFIC TO THE PROJECT:

(Kotur S. Narasimhan)
Office of Air Data Analysis **DATE: July 25, 2019**

Commonwealth of Virginia

Howard, Janine <janine.howard@deq.virginia.gov>

ESSLOg# 39705_19-047F_WolfTrap_DGIF_AME20190827

1 message

Ewing, Amy <amy.ewing@dgif.virginia.gov> Tue, Aug 27, 2019 at 12:26 PM
To: Janine Howard <janine.howard@deq.virginia.gov>

Janine,
As this proposed open water placement site expansion site is located in the Bay, we defer the consistency determination to VMRC.

Thanks, Amy

Amy Ewing
Environmental Services Biologist
Manager, Fish and Wildlife Information Services
P 804.367.2211
Virginia Department of Game & Inland Fisheries
CONSERVE. CONNECT. PROTECT.
A 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228
www.dgif.virginia.gov

Commonwealth of Virginia

Howard, Janine <janine.howard@deq.virginia.gov>

NEW PROJECT ACOE Wolf Trap Alternate Open Water Placement Site, DEQ #19-074F

1 message

Henderson, Samantha <samantha.henderson@dhr.virginia.gov> Tue, Aug 27, 2019 at 9:43 AM
To: Janine Howard <janine.howard@deq.virginia.gov>

Dear Ms. Howard:
Thank you for requesting comments from the Department of Historic Resources (DHR) on this project. DHR has been in consultation with the US Army Corps of Engineers regarding this project. We request that the Corps continue to consult directly with DHR, as necessary, pursuant to Section 106 of the National Historic Preservation Act (as amended) and its implementing regulations codified at 36 CFR Part 800 which require Federal agencies to consider the effects of their undertakings on historic properties.
Regards,
--
Samantha J. Henderson
Project Review Archaeologist
Review and Compliance Division
Virginia Department of Historic Resources
2801 Kensington Avenue | Richmond, VA 23221
(804) 482-6088 | samantha.henderson@dhr.virginia.gov

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Street address: 1111 East Main Street, Suite 1400, Richmond, VA 23219
Mailing address: P.O. Box 1105, Richmond, Virginia 23218
www.deq.virginia.gov

Matthew J. Strickler
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

October 8, 2019

U.S. Army Corps of Engineers- Baltimore District
ATTN: Kristina May, Biologist
Planning Division
2 Hopkins Plaza
Baltimore, MD 21201
Via Email: Kristina.k.may@usace.army.mil

RE: Amendment to Comments on the Draft Environmental Assessment and Federal Consistency Determination for the Wolf Trap Alternate Open Water Placement Site Northern Extension (WTAPSNE), U.S. Army Corps of Engineers, Virginia Waters of the Chesapeake Bay (DEQ 19-074F).

Dear Ms. May:

This letter provides notification of an amendment to the September 17, 2019 state response that the Virginia Department of Environmental Quality (DEQ) provided on the Wolf Trap Alternate Open Water Placement Site Northern Extension project. Sections 2(e) “VMRC Requirement” and 3(e) “VMRC Requirement” of the state response (attached) stated:

“For consistency in the 2019 maintenance cycle, overboard placement must be limited to Cells 4 and 5 at WTAPSNE given the deeper waters present.”

In coordination with the Virginia Marine Resources Commission (Howard/Owen email, 10/8/19), the DEQ hereby notifies the U.S. Army Corps of Engineers that the comment to limit overboard placement in the 2019 maintenance cycle to Cells 4 and 5 at WTAPSNE is a recommendation, not a requirement for federal consistency with the subaqueous lands management and fisheries management enforceable policies of the Virginia Coastal Zone Management Program.

Please contact VMRC (Randy Owen, 757-247-2251) with questions regarding this recommendation.

Thank you for the opportunity to review and respond to the Draft Environmental Assessment and Federal Consistency Determination for the Wolf Trap Alternate Open Water Placement Site Northern Extension project.

Sincerely,

Bettina Rayfield, Program Manager
Environmental Impact Review

Ec: Tony Watkinson, VMRC
Randy Owen, VMRC
Kristina May, Corps
Daniel Bierly, Corps

Commonwealth of Virginia

Howard, Janine <janine.howard@deq.virginia.gov>

Re: 19-074F Wolf Trap Alternate Open Water Placement Site- Northern Extension

1 message

Owen, Randy <randy.owen@mrc.virginia.gov> Tue, Oct 8, 2019 at 2:04 PM
To: "Howard, Janine" <janine.howard@deq.virginia.gov>
Cc: Tony Watkinson <tony.watkinson@mrc.virginia.gov>

Yes it is a recommendation.

On Tue, Oct 8, 2019 at 8:01 PM Howard, Janine <janine.howard@deq.virginia.gov> wrote:

> Hi Randy,
>
> In follow-up to the telephone conversation we had regarding the Wolf Trap project and the VMRC comment that the Corps limit overboard placement to cells 4 and 5 in the 2019 maintenance cycle, would you please confirm that VMRC is satisfied with this as a recommendation, not a requirement for federal consistency?
>
> In requirements sections 2(e) and 3(e) of the attached letter we stated:
> "For consistency in the 2019 maintenance cycle, overboard placement must be limited to Cells 4 and 5 at WTAPSNE given the deeper waters present."
>
> Based on our earlier telephone call I am drafting a letter to the Corps notifying them of the change from requirement to recommendation. Please confirm that you concur.
>
> Thank you,
>
> Janine Howard
> Environmental Impact Review Coordinator
> Virginia Department of Environmental Quality
> 1111 East Main Street, Suite 1400
> Richmond, VA 23219
> 804-698-4299
>
> For program updates and public notices please subscribe to Constant Contact: https://lp.constantcontact.com/su/MVcCump/EIR

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Randal D. Owen

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