



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NORTH ATLANTIC DIVISION
FORT HAMILTON MILITARY COMMUNITY
302 JOHN WARREN AVENUE
BROOKLYN, NY 11252-6700

CENAD-PD-P (1105-2-10c)

3 June 2024

MEMORANDUM FOR Commander, U.S. Army Corps of Engineers, Norfolk District,
Fort Norfolk 803 Front Street, Norfolk, VA 23510-1011

SUBJECT: Norfolk Harbor Navigation Improvements Anchorage F Modifications
Norfolk, Virginia Limited Reevaluation Report

1. Reference Memorandum, CENAO-ZA dated 17 May 2024, Subject: Transmittal of the Vertical Team Alignment Memo for the Norfolk Harbor and Channels, Anchorage F Limited Re-evaluation Feasibility Study, VA, which provided the Review Plan for approval.
2. The North Atlantic Division (NAD) is the lead office to execute the referenced Review Plan, which also has concurrence by the Deep Draft Navigation Planning Center of Expertise of the South Atlantic Division. The Review Plan does not include Independent External Peer Review, as it is not required.
3. The enclosed Review Plan is approved for execution and is subject to change as study circumstances require, consistent with study development under the Project Delivery Business Process. Subsequent revisions to this Review Plan or its execution require new written approval from NAD.
4. The point of contact is Mr. Larry Cocchieri, NAD Planning Program Manager at 347-370-4571 or Lawrence.J.Cocchieri@usace.army.mil.

Encl

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JOHN P. LLOYD
Brigadier General, USA
Commanding



DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK, VIRGINIA 23510-1011

CENAO-ZA

17 May 2024

MEMORANDUM FOR Mr. Thomas Harnedy, Interim Director of Programs Management, USACE, North Atlantic Division, Fort Hamilton Military Community, 302 John Warren Avenue, Brooklyn, NY 11252-6700

SUBJECT: Transmittal of the Vertical Team Alignment Memo for the Norfolk Harbor and Channels, Anchorage F Limited Re-evaluation Feasibility Study, VA

1. The purpose of this memorandum is to submit the Vertical Team Alignment Memorandum (VTAM) for the Norfolk Harbor and Channels, Anchorage F Limited Re-evaluation Feasibility Study, VA, pursuant to Section 1001 requirements of Water Resources Reform and Development Act of 2014 (Public Law 113-121).
2. The VTAM (Enclosure 1) and associated references are enclosed for review by the North Atlantic Division's Policy and Legal Compliance team. Associated references include the Project Management Plan (PMP) (Enclosure 2), Report Summary (Enclosure 3), Risk Register (Enclosure 4), Review Plan (Enclosure 5), Meeting (AMM) Memorandum for Record (MFR) and final AMM slide deck (Enclosure 6), and ERDC/CHL Anchorage F Design Charrette Report (Enclosure 7).
3. If you have any questions, please contact the Planning Technical Lead, Ms. Traycie West at 757-201-7752 or traycie.l.west@usace.army.mil or Project Manager, Mr. Victor Roberts, at 757-201-7886 or victor.l.roberts2@usace.army.mil.

Brian P. Hallberg

Encls

BRIAN P. HALLBERG, PMP
COL, EN
Commanding

Review Plan
May 10, 2024

1. Project Summary

Project Name: Norfolk Harbor Navigation Improvements Anchorage F Modifications Norfolk, Virginia Limited Reevaluation Report

Location: Norfolk, Virginia

P2 Number: 513657

Decision and Environmental Compliance Document Type: Director’s Report, Supplemental Environmental Assessment.

Congressional Authorization Required: Yes

Project Purpose(s): The purpose of the study is to evaluate modifications of Anchorage F to accommodate the navigation needs of the current and future forecasted vessel fleet.

Non-Federal Sponsor: The Virginia Port Authority (VPA), as an agent of the Commonwealth, is the nonfederal sponsor for this project.

Points of Public Contact for Questions/Comments on Review Plan: Traycie West, Traycie.L.West@usace.army.mil, (757) 201-7752

District: Norfolk

District Contact: District: Project Manager: (757) 201-7886,
Planning Team Lead: (757) 201-7752

Major Subordinate Command (MSC): North Atlantic Division (NAD)

MSC Contact: Major Subordinate Command (MSC): (347) 370-4571; (347) 370-4561

Review Management Organization (RMO): NAD, with support from the Deep Draft Navigation Planning Center of Expertise

RMO Contact: (347) 370-4571; (347) 370-4561

Key Review Plan Dates

Date of RMO Endorsement of Review Plan	Pending
Date of MSC Approval of Review Plan	Pending
Date of IEPR Exclusion Approval	N/A
Has the Review Plan changed since RMO Endorsement?	N/A
Date of Last Review Plan Revision	None
Date of Review Plan Web Posting	Pending

Milestone Schedule and Other Dates

	Scheduled	Actual
FCSA Execution	9/25/2024	09/25/2023
Alternatives Milestone	4/16/2024	4/12/2024
Tentatively Selected Plan	9/25/2024	

Release Draft Report to Public	11/22/2024	
Agency Decision Milestone	3/25/2025	
Final Report Transmittal	8/15/2025	
State & Agency Briefing¹	N/A	N/A
Director's Report	11/21/2025	

¹Director's Report does not require a State and Agency Briefing

2. References

Engineer Regulation 1165-2-217 – Water Resources Policies and Authorities – Civil Works Review Policy, 1 May 2021.

Engineer Circular 1105-2-412 – Planning – Assuring Quality of Planning Models, 31 March 2011.

Planning Bulletin 2013-02, Subject: Assuring Quality of Planning Models (EC 1105-2-412), 31 March 2013.

Office of Management and Budget, Final Information Quality Bulletin for Peer Review, Federal Register Vol. 70, No. 10, January 14, 2005, pp 2664-267

The online USACE Planning Community Toolbox provides more review reference information at: <https://planning.erdc.dren.mil/toolbox/current.cfm?Title=Peer%20Review&ThisPage=Peer&Side=No>.

3. Review Execution Plan

The general plan for executing all required independent reviews is outlined in the following two tables.

Table 1 lists each study product to be reviewed. The table provides the schedules and costs for the anticipated reviews. Teams also determine whether a site visit will be needed to support each review. The decisions about site visits are documented in the table. As the review plan is updated the team will note each review that has been completed.

Table 2 identifies the specific expertise and role required for the members of each review team. The table identifies the technical disciplines and expertise required for members of review teams. In most cases the team members will be senior professionals in their respective fields. In general, the technical disciplines identified for a District Quality Control (DQC) team will be needed for an Agency Technical Review (ATR) team. Each ATR team member will be certified to conduct ATR by their community of practice. The table is set up to concisely identify common types of expertise that may be applicable to one or more of the reviews needed for a study.

Table 1: Schedule and Costs of Reviews

Product to undergo Review	Review Level	Site Visit	Start Date	End Date	Cost	Complete
Planning Model Review	Model Review (see EC 1105-2.412)	No	N/A	N/A	N/A	N/A
Draft Feasibility Report / EA	District Quality Control (DQC)	No	10/2/2024	11/8/2024	\$35,000	No
Draft Feasibility Report / EA	Public comment under National Environmental Policy Act	No	11/22/2024	12/23/2024	\$105,500	No
Draft Feasibility Report / EA	Agency Technical Review (ATR)	No	11/22/2024	12/23/2024	\$13,000	No
Draft Feasibility Report / EA	Policy and Legal Compliance Review	No	11/22/2024	12/23/2024	\$33,500	No
Draft Feasibility Report / EA	DQC	N/A	5/22/2025	6/26/2025	\$35,000	No
Draft Feasibility Report / EA	ATR	N/A	6/26/2025	07/31/2025	\$13,000	No
Draft Feasibility Report / EA	Policy and Legal Compliance Review	N/A	8/15/2025	9/16/2025	\$24,000	No
Draft Feasibility Report / EA	Release Final Report under National Environmental Policy Act	No	12/23/2024	08/15/2025	\$92,000	No
In-kind Products from the sponsor	Details regarding products and analyses provided by non-Federal sponsors as in-kind services are provided within the context of the overall GRR.	No	12/31/2023	11/21/2025	\$453,000	No
Review Management Organization – Coordination and Participation	An RMO will participate in most key meetings including In-Progress Reviews, Issue Resolution Meetings and SMART Milestone Meetings	No	11/22/2024	7/31/2025	\$26,000	No

Table 2: Review Teams - Disciplines and Expertise

Discipline / Role	Expertise	DQC	ATR	IEPR
DQC Team Lead	Extensive experience preparing Civil Works decision documents and leading DQC. The lead may serve as a DQC reviewer for a specific discipline (planning, economics, environmental, etc.).	Yes	No	No
ATR Team Lead	Professional with extensive experience preparing Civil Works decision documents and conducting ATR. Skills to manage a virtual team through an ATR. The lead may serve on the ATR team for a specific discipline (such as planning, economics, or environmental work).	No	Yes	No
Planning	Skilled water resources planner knowledgeable in complex planning investigations and the application of SMART principle to problem solving.	Yes	Yes	No
Economics ¹	Experience with applying theory, methods and tools used in the economic evaluation of water resources projects.	Yes	Yes	No
Environmental Resources	Experience with environmental evaluation and compliance requirements, national environmental laws and statutes, applicable Executive Orders, and other planning requirements.	Yes	Yes	No
Cultural Resources	Experience with cultural resource survey methods, area of potential effects, National Historic Preservation Act Section 106, and state and federal laws pertaining to American Indian Tribes.	Yes	Yes	No
Hydrology	Engineer with experience applying hydrologic principles and technical tools to project planning, design, construction, and operation.	No	Yes	No
Hydraulic Engineering	Engineer with experience applying hydraulic engineering principles and analytic tools to project planning, design, construction, and operation.	No	Yes	No
Cost Engineering	Experience using cost estimation software; working knowledge of water resource project construction; capable of making professional determinations using experience.	Yes	Yes	No
Navigation Channel Design	Team member will be an expert in dredging and the development and review of new work navigation projects.	Yes	Yes	No
Geotechnical Engineer/Geologist	Team member will be an expert in the field of geotechnical engineering or geology, especially in the development and review of new work navigation projects.	Yes	Yes	No
Construction/Operations	Extensive construction management experience and operations work.	Yes	Yes	No
Real Estate	Experience developing Real Estate Plans and experience in real estate fee/easement acquisition and residential/business relocations for Federal and/or Federally Assisted Programs for implementation of Civil Works projects.	Yes	Yes	No
Climate Preparedness and Resilience	A member of the Climate Preparedness and Resiliency Community of Practice knowledgeable of coastal hydrology climate change assessment policy and practice.	No	Yes	No
Risk and Uncertainty	For decision documents involving hydrologic, hydraulic, and/or coastal related risk management measures, include on the ATR team an expert on multi-discipline flood risk analysis to ensure consistent and appropriate identification, analysis, and written communication of risk and uncertainty.	No	Yes	No

¹The economics DQC team member will be identified by the DDNFCX (OPORD 2012-15).

4. Documentation of Reviews

Documentation of DQC. Quality Control will be performed continuously. A specific certification of DQC completion will be prepared at the base conditions (existing and future), draft and final report stages. Documentation of DQC will follow the District Quality Manual and the MSC Quality Management Plan. DrChecks will be used for documentation of DQC comments. An example DQC Certification statement is provided in ER 1165-2-217, Appendix D. Documentation of completed DQC, to include the DQC checklist, will be provided to the MSC, RMO and the ATR Team leader. The ATR team will examine DQC records and comment in the ATR report on the adequacy of the DQC effort.

Documentation of ATR. DrChecks will be used to document all ATR comments, responses, and resolutions. Comments should be limited to those needed to ensure product adequacy. All members of the ATR team will use the four-part comment structure (see ER 1165-2-217, Section 5). If a concern cannot be resolved by the ATR team and PDT, it will be elevated to the vertical team to resolve using the issue resolution process in ER 1165-2-217, Section 5.9. Unresolved concerns will be closed in DrChecks by noting the concern has been elevated. ATR documentation will include an assessment by the ATR team of the effectiveness of DQC. The ATR Lead will prepare a Statement of Technical Review (see ER 1165-2-217, Section 5.11, and Appendix D), for the draft and final reports, certifying that review issues have been resolved or elevated. ATR will be certified when all concerns are resolved or referred to the vertical team and the ATR documentation is complete.

5. Supporting Information

Study or Project Background

Study Authority

The Norfolk Harbor and Channels, Virginia, Project was authorized by Section 201 of WRDA 1986 and Section 1403 of WRDA 2018. It consists of a network of federally improved channels extending from the Atlantic Ocean, through the Chesapeake Bay, and into the Port of Hampton Roads (See Figure 1). Since 1986, the authorized project has been constructed in separable elements based on the needs of the Port Community and the financial capability of the Commonwealth of Virginia. The 50-foot Outbound Element was completed in 1989; the 50-foot Anchorage in 1999; and 50-foot Inbound Element in 2007. The Norfolk Harbor Navigation Improvements Project is the current element of the authorized project that is in the Preconstruction Engineering and Design (PED) Phase.

A WRDA 7001 package for Anchorage F was coordinated with USACE, Norfolk District and submitted by the Virginia Port Authority (VPA). The following is the authorization text from WRDA 2022: WRDA 2022, SEC. 8223. NORFOLK HARBOR AND CHANNELS, VIRGINIA.

Not later than December 31, 2023, the Secretary shall complete a post-authorization change report (PACR) for the Anchorage F modifications to the project for navigation, Norfolk Harbor and Channels, Virginia, authorized by Section 201 of the Water Resources Development Act of 1986 (100 Stat. 4090; 132 Stat. 3840).

Study or Project Area

The study area includes Federal navigation channel, Anchorage F and its approaches. Currently there are two open-water placement sites for dredged material from these navigation channels, Dam Neck Ocean Disposal Site (DNODS) and Norfolk Ocean Disposal Site (NODS), which are both located in the Atlantic Ocean (Figure 1). Craney Island Dredged Material Management Area (CIDMMA) is a third placement area within the Harbor.

Study or Project Area Map



Figure 1 – Study Area Map.

Problem Statement

The LRR (Limited Reevaluation Report) will consist of an economic evaluation including a national economic development (NED) analysis of Anchorage F dimensions and associated environmental and cultural resource compliance.

VPA has requested a modification to the existing USACE project authority to include a deeper and wider Anchorage F and approach based on Virginia Pilot Association surveys, U.S. Coast Guard guidelines, and a design charrette conducted on 05 October 2020. A deeper and wider anchorage would align with the authorized depths of the adjacent federal navigation channel.

Previously documented issues with depths and widths of Norfolk Harbor anchorages were described in the 2018 GRR:

- Existing anchorages are insufficient to fully accommodate existing and future vessel fleet (depth, quantity, dimensions).
- A lack of deep anchorages exists within the harbor resulting in transit delays.
- Anchorage Alpha is the only location where ships with larger drafts can anchor and is located within a primary DoD training/exercise area which makes access available only with prior Navy authorization.

Goals and Objectives

This Limited Reevaluation Study will examine the NED benefits relative to the NED costs of Anchorage F dimensions, to determine justification at the FY 2024 (or later) Federal Water Resources discount rate and the OMB rate of 7%. The goal will include selection of an NED Plan that is complete, efficient, and environmentally acceptable.

Future Without Project Conditions

Direction from Congress include feasibility for the diameter and depth of Anchorage F. After an evaluation of the discussion during the AMM, District staff determined that the Congressionally authorized dimensions for Anchorage F (diameter 3,620', depth -51' mean low low water) should serve as the FWOP for the study.

Types of Measures/Alternatives Being Considered

Navigation was the Corps of Engineers' earliest Civil Works mission, dating to Federal laws in 1824 authorizing and funding the Corps to improve safety on the Ohio and Mississippi Rivers and several ports. The Corps provides safe, reliable, efficient, and environmentally sustainable waterborne transportation systems (channels, harbors, and waterways) for movement of commerce, national security needs, and recreation. In accordance with SEC. 8223 of WRDA 2022, NORFOLK HARBOR AND CHANNELS, VIRGINIA, the study is considering modifications to the project for navigation, Norfolk Harbor and Channels, Virginia, authorized by section 201 of the Water Resources Development Act of 1986 (100 Stat. 4090; 132 Stat. 3840) for Anchorage F. Following a design

charette in 2020 and a planning charette in 2024, an array of alternative width and depth alternatives has been identified.

Estimated Cost/Range of Costs

The estimated total cost of the project is expected to be in the range of \$39 million to \$55 million.

6. Models to be Used in the Study

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models are any models and analytical tools used to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making.

The following planning models may be used to develop the decision document:

Table 3: Planning Models.

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Certification / Approval
HaborSym	HarborSym is a discrete event Monte-Carlo simulation model designed to facilitate economic analyses of proposed navigation improvement projects in coastal harbors. Incorporating risk and uncertainty, the model will be used to estimate transportation cost savings (benefits) attributable to fleet and loading changes under future with project conditions.	Certified
Channel Design and Evaluation Tool (CADET)	Probabilistic risk analysis techniques to evaluate the accessibility of channel reaches for multiple vessel geometries, loading, and wave conditions.	Certified
Regional Economic System (RECONS) (Economics)	RECONS is a regional economic impact modeling tool that estimates jobs, income, and sales associated with Corps CW spending and additional economic activities. The model will be used to estimate the regional economic impacts of project implementation.	Certified

EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue. The professional practice of documenting the application of the software and modeling results will be followed. The USACE Scientific and Engineering Technology Initiative has identified many engineering models as preferred or acceptable for use in studies. These models should be used when

appropriate. For example, HH&C models need to comply with the requirements of HH&C CoP Enterprise Standard 08101.

These engineering models may be used to develop the decision document:

Table 4: Engineering Models.

Model Name and Version	Brief Model Description and How It Will Be Used in the Study	Approval Status
Microcomputer Aided Cost Engineering System (MCACES), MII (Cost Engineering)	Microcomputer Aided Cost Engineering System (MCACES) is the cost estimating software program tools used by cost engineering to develop and prepare Class 3 Civil Works cost estimates.	Civil Works Cost Engineering and Agency Technical Review MCX mandatory
Abbreviated Risk Analysis, Cost Schedule Risk Analysis (Cost Engineering)	Cost risk analyses identify the amount of contingency that must be added to a project cost estimate and define the high-risk drivers. The analyses will include a narrative identifying the risks or uncertainties. During the alternatives evaluation, the PD'I will assist the cost engineer in defining confidence/risk levels associated with the project features within the abbreviated risk analysis.	Civil Works Cost Engineering and Agency Technical Review MCX mandatory
Total Project Cost Summary (TPCS) (Cost Engineering)	The TPCS is the required cost estimate document that will be submitted for either division or HQUSACE approval. The Total Project Cost for each Civil Works project includes all Federal and authorized non-Federal costs represented by the Civil Works Work Breakdown Structure features and respective estimates and schedules, including the lands and damages, relocations, project construction costs, construction schedules, construction contingencies, planning and engineering costs, design contingencies, construction management costs, and management contingencies.	Civil Works Cost Engineering and Agency Technical Review MCX mandatory
Corps of Engineers Dredge Estimating Program (CEDEP) (Cost Engineering)	CEDEP is the required software program that will be used for dredging estimates using floating plants. CEDEP contains a narrative documenting reasons for decisions and selections made by the cost engineer. Software distribution is restricted as it is considered proprietary to the Government.	Civil Works Cost Engineering and Agency Technical Review MCX mandatory

7. Factors Affecting Level and Scope of Review

All planning products are subject to the conduct and completion of District Quality Control. Most planning products are subject to Agency Technical Review and a smaller sub-set of products may be subject to Independent External Peer Review and/or Safety Assurance Review. Information in this section helps in the scoping of reviews through the considerations of various potential risks.

Objectives of the Reviews

This Limited Reevaluation Study will examine the NED benefits relative to the NED costs of Anchorage F dimensions, to determine justification at the FY 2024 (or later) Federal Water Resources discount rate and the OMB rate of 7%. The goal will include selection of an NED Plan that is complete, efficient, and environmentally acceptable.

Assessing the Need for IEPR

IEPR is not required for a Limited Reevaluation Report.

Assessing Other Risk Considerations

- Will the study likely be challenging? If so, describe how?

The LRR will provide a reexamination of the project economics for the National Economic Development (NED) plan, authorized in WRDA 2018. The LRR will also document reasons for cost increases since authorization, including, but not limited to, real estate, increase in materials cost (steel), additional PED work (field work, design work), and utility relocations. The Limited Reevaluation Study will require a Supplemental EA and associated environmental and cultural compliance. There are some risks associated with the environmental and cultural work; however, based on the previous compliance reached during the 2018 GRR, it is anticipated that full environmental and cultural compliance can be achieved with this Limited Reevaluation Study. There are no institutional or social challenges expected to impact this study.

- Provide a preliminary assessment of where the project risks are likely to occur and assess the magnitude of those risks.

There is a low risk that this project would necessitate the reopening of the 2018 National Marine Fisheries Service (NMFS) Batched Biological Opinion that was developed in association with the GRR. There is limited potential for cultural compliance risks for the study. The presence or absence of utilities is currently under review, and the presence of utilities could require utility relocation. The risk is low that utilities beyond what were identified during the GRR are present. These would be expected to be minor as these types of risks were all successfully previously addressed in the 2018 GRR. An evaluation for identification of a dredged material placement site is necessary. Several viable options are available so this risk would also be expected to be minor. Other infrastructure assets in the vicinity, such as the US Navy Degaussing Range and the I-64 Hampton Roads Bridge Tunnel, are factor in deciding the final footprint of the anchorage expansion but the risk will be managed in cooperation with the appropriate interested parties. The economic evaluation may lead to the development of a Sponsor focused plan (LPP) if the NED plan is not significantly different

from the current authorized plan from the 2018 GRR. The economic analysis has not occurred at this time, however, the risk is minimal because the sponsor-supported width of the anchorage might be achieved through use of an EDR. It is anticipated that full compliance could be achieved during the Limited Reevaluation Study.

- Is the project likely to be justified by life safety or is the study or project likely to involve significant life safety issues? Briefly describe the life risk, including the District Chief of Engineering's assessment as to whether there is a significant threat to human life associated with aspects of the study or failure of the project or proposed projects.

Anchorage F improvements are under consideration and evaluation.

- Is the information in the decision document or anticipated project design likely to be based on novel methods, involve innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices? If so, how?

We do not expect to utilize any novel methods, innovative materials or techniques, nor complex interpretations. There is no expectation that this study will involve precedent-setting methods or models or have any impact on prevailing practices.

- Does the project design require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design/construction schedule? If so, how?

The project design will not require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design/construction schedule.

- Is the project expected to have more than negligible adverse impacts on scarce or unique tribal, cultural, or historic resources? If so, what are the anticipated impacts?

There is a low potential for adverse impacts to cultural or tribal resources. Hampton Roads harbor is a historic shipping waterway with a history of dredging and other associated waterway activities. At this time no unique tribal resources have been identified. Background research indicates both archaeological and historic resources have the potential to occur in or near the project area; however, any potential impacts would be fully mitigated. Should buried cultural resources be identified they will be evaluated in accordance with Section 106 of the National Historic Preservation Act (NHPA). A cultural resources survey is planned during the feasibility study phase.

- Is the project expected to have substantial adverse impacts on fish and wildlife species and their habitat prior to the implementation of mitigation measures? If so, describe the impacts?

No substantial adverse impacts on fish and wildlife species and their habitat are expected. Anchorage F, a subset of the larger Norfolk Harbor and Channels Federal Navigation Project, is not likely to have substantial adverse impacts on fish and wildlife species or their habitat. Any new work or maintenance dredging would temporarily impact benthic species and forage habitat for larger, motile fish species. However, benthic organisms are likely to recolonize disturbed areas after dredging. There are also plentiful benthic resources adjacent to the project footprint, which would

provide forage habitat for fishes during construction and likely be the recruitment source for benthic spp. after completion of construction.

- Is the project expected to have, before mitigation measures, more than a negligible adverse impact on an endangered or threatened species or their designated critical habitat? If so, what are the anticipated impacts?

There is no critical habitat in the Region of Influence. The No Action Alternative, as a part of the larger Norfolk Harbor Navigation Improvements Project **was** coordinated in 2018 with NMFS. The result of that coordination was an ITS; it was assumed that the dredge method for all channels, including Anchorage F, was hopper dredging (most impactful dredge method). However, dredge methods proposed for Anchorage F include either cutterhead suction or mechanical dredging, which are documented to be significantly less impactful to listed species. The project is not anticipated to result in a modification of the 2018 ITS nor is it expected to reach the authorized take limits.

Anchorage F, a subset of the larger Norfolk Harbor and Channels Federal Navigation Project, is not likely to have substantial adverse impacts on fish and wildlife species or their habitat. Any new work or maintenance dredging would temporarily impact benthic species and forage habitat for larger, motile fish species. However, benthic organisms are likely to recolonize disturbed areas after dredging. There are also plentiful benthic resources adjacent to the project footprint, which would provide forage habitat for fishes during construction and likely be the recruitment source for benthic species after completion of construction.

The project is not anticipated to have more than a negligible adverse impact to listed species under the jurisdiction of USFWS.

8. Risk Informed Decisions on Level and Scope of Review

Targeted ATR. Will a targeted ATR be conducted for the study? No, routine review affords will satisfy the needs for this study.

Safety Assurance Review. Safety Assurance Reviews are managed outside of the USACE and are conducted on design and construction products for hurricane, storm and flood risk management projects, or other projects where existing and potential hazards pose a significant threat to human life. In some cases, significant life safety considerations may be relevant to planning decisions. These cases may warrant the development of relevant charge questions for consideration during reviews such as ATR or IEPR. In addition, if the characteristics of the recommended plan warrant a Safety Assurance Review, a panel will be convened to review the design and construction activities on a regular schedule before construction begins and until construction activities are completed.

Decision on Safety Assurance Review. N/A

9. Policy and Legal Compliance Review

Policy and legal compliance review of draft and final planning decision documents is delegated to the MSC (see Director's Policy Memorandum 2019-01).

(i) Policy Review.

The policy review team is identified through the collaboration of the MSC Chief of Planning and Policy and the HQUSACE Chief of the Office of Water Project Review. The makeup of the Policy Review team will be drawn from Headquarters (HQUSACE), the MSC, the Planning Centers of Expertise, and other review resources as needed.

- The Policy Review Team will be invited to participate in key meetings during the development of decision documents as well as SMART Planning Milestone meetings. These engagements may include In-Progress Reviews, Issue Resolution Conferences or other vertical team meetings plus the milestone events.
- The input from the Policy Review team should be documented in a Memorandum for the Record (MFR) produced for each engagement with the team. The MFR should be distributed to all meeting participants.
- Teams may choose to capture some of the policy review input in a risk register if appropriate. These items should be highlighted at future meetings until the issues are resolved. Any key decisions on how to address risk or other considerations should be documented in an MFR.

(ii) Legal Review.

Representatives from the Office of Counsel will be assigned to participate in reviews. Members may participate from the District, MSC and HQUSACE. The MSC Chief of Planning and Policy will coordinate membership and participation with the office chiefs.

- In some cases, legal review input may be captured in the MFR for the particular meeting or milestone. In other cases, a separate legal memorandum may be used to document the input from the Office of Counsel.

Each participating Office of Counsel will determine how to document legal review input.

10. Public Comment

This Review Plan will be posted on the District's website. Public comments on the scope of reviews, technical disciplines involved, schedules and other considerations may be submitted to the District for consideration. If the comments result in a change to the Review Plan, an updated plan will be posted on the District's website.

11. Documents Distributed Outside the Government

For information distributed for review to non-governmental organizations, the following disclaimer shall be placed on documents:

“This information is distributed solely for the purpose of pre-dissemination review under applicable information quality guidelines. It has not been formally disseminated by USACE. It does not represent and should not be construed to represent any agency determination or policy.”

Appendix A - Brief Description of Each Type of Review

This section describes each level of review to be conducted. Based upon the factors discussed in Section 1, this study will undergo the following types of reviews:

District Quality Control. All decision documents and accompanying components will undergo DQC. This internal review covers basic science and engineering work products. It fulfills the project quality requirements of the Project Management Plan. The DQC team will read all reports and appendices. The review must evaluate the correct application of methods, validity of assumptions, adequacy of basic data, correctness of calculations (error-free), completeness of documentation, and compliance with guidance and standards. Districts are required to check all computations and graphics by having the reviewer place a highlight (e.g., place a “red dot”) on each annotation and/or number indicating concurrence with the correctness of the information shown.

Agency Technical Review. ATR will be performed by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. These teams will be comprised of certified USACE personnel. The ATR team lead will be from outside the home MSC. The Deep Draft Navigation Planning Center of Expertise will lead the ATR.

Cost Engineering Review. All decision documents will be coordinated with the Cost Engineering Mandatory Center of Expertise (MCX). The MCX assisted in determining the expertise needed on the ATR and IEPR teams. The MCX will provide the Cost Engineering certification. The RMO is responsible for coordinating with the MCX for the reviews. These reviews occur as part of ATR.

Policy and Legal Compliance Review. These reviews culminate in determinations that report recommendations and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander.

Public Review. The District will post the Review Plan and approval memo on the District’s internet site. Public comment on the adequacy of the Review Plans will be accepted and considered. Additional public review will occur when the report and environmental compliance document(s) are released for public and agency comment.