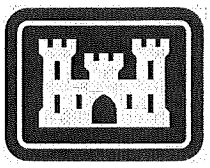
Draft Review Plan

For

Norfolk Harbor Navigation Improvement Project, VA

Implementation Documents



US ARMY CORPS
OF ENGINEERS
NORFOLK DISTRICT

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1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan (RP) defines the scope and level of review for the implementation documents for the Preconstruction Engineering and Design (PED) Phase and remaining implementation documents that may be produced during the Construction Phase of the Norfolk Harbor Navigation Improvements Project. The PED effort is being conducted under a Design Agreement (DA) that was executed on 6-Feb-2019 between the Norfolk District and the Virginia Port Authority (VPA) representing the Commonwealth of Virginia. The development of implementation documents is expected to be phased with some designs completed during the Construction Phase of the first construction segments. The PED Phase will conclude if a new start decision to fund the Project is made and a Project Partnership Agreement for the Construction Phase is executed.

b. References.

1. EC 1165-2-217, Civil Works Review Policy, February 2018
2. ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999
3. ER 1110-1-12, Engineering and Design Quality Management, 21 Jul 2006 as revised through 31 March 2011
4. ER 1100-2-8162, Incorporating Sea Level Change in Civil Works Programs, 31 Dec 2013
5. ER 415-1-11- Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Reviews

c. Requirements. This Review Plan was developed in accordance with EC 1165-2-217, which establishes an accountable, comprehensive, life-cycle review strategy for projects by providing a seamless process for review of all Civil Works projects from initial planning through Design, Construction, and Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review.

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall review effort described in this Review Plan. The RMO for implementation documents is the Major Subordinate Command (MSC), (per EC 1165-2-217). Therefore, the RMO for the review effort described in this Review Plan is the North Atlantic Division (NAD).

3. PROJECT INFORMATION AND BACKGROUND

a. Implementation Documents. This Review Plan has been prepared for the implementation documents for the Norfolk Harbor Navigation Improvements Project. Implementation documents include Plans and Specifications (P&S) and a Design Documentation Report (DDR). This Review Plan defines the scope and level of review for the Project. The purpose of these documents is to provide a record of final design for the authorized navigation

improvements. Approval of the implementation documents is at the District Command level. Multiple sets of Plans and Specifications, accompanied by Design Documentation Report volumes, will be produced for this project during the Preconstruction Engineering and Design phase and the subsequent Construction Phase. The first Federal contract is planned as Norfolk Harbor Channel (Lamberts Bend to Sewell's Point) extending to include portions of the Norfolk Harbor Entrance reach. The limits of the first Federal contract will be determined during the design development depending on the resolution timeframe of potential conflicts in the channel and the allocation of sufficient Federal funding. Detailed information on the reaches included in the scope of work are outlined in the General Reevaluation Report completed in 2018.

b. Project Background and Description. The Norfolk Harbor and Channels, Virginia, Project was authorized by Section 201 of the Water Resources Development Act of 1986 and Section 1403 of the Water Resources Development Act of 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 and last element of the Authorized Project that will complete the requirements of the 1986 and 2018 authorizations.

The Chief of Engineer's Report on the Norfolk Harbor Navigation Improvements was signed on 29 June 2018 by LG Todd T. Semonite, Chief of Engineers. The specifics of the navigation improvements are as follows (depths do not include over-depth or advanced maintenance depths):

- Deepening the Atlantic Ocean Channel to a required depth -59 feet Mean Lower Low Water (MLLW);
- Deepening the Thimble Shoal Channel to a required depth -56 feet (MLLW);
- Deepening the Norfolk Harbor Channel to a required depth -55 feet (MLLW);
- Deepening the Norfolk Harbor Entrance Channel to a required depth -55 feet (MLLW);
- Deepening the Newport News Channel to a required depth -55 feet (MLLW);
- Widening the Thimble Shoal Channel east of the Chesapeake Bay Bridge Tunnel to 1,300 feet;
- Widening Anchorage F to 3,620 feet diameter and associated modifications of the Approach Area; and
- Deepening Anchorage F to -51 feet (MLLW).

The VPA has expedited the implementation of the navigation improvements with the specific intent to initiate the first construction contract as early as January 2020 for the deepening of the portion of the Thimble Shoal Channel immediately west of the Chesapeake Bay Bridge Tunnel, referred to as Thimble Shoal Channel West (TSC-West). To this end, the VPA began accomplishing in-kind contributions, following the execution of an in-kind Memorandum of

Understanding in July 2018, focused on supporting the first construction contract. All VPA design activities are closely coordinated with the Norfolk District and covered under a separate Review Plan.

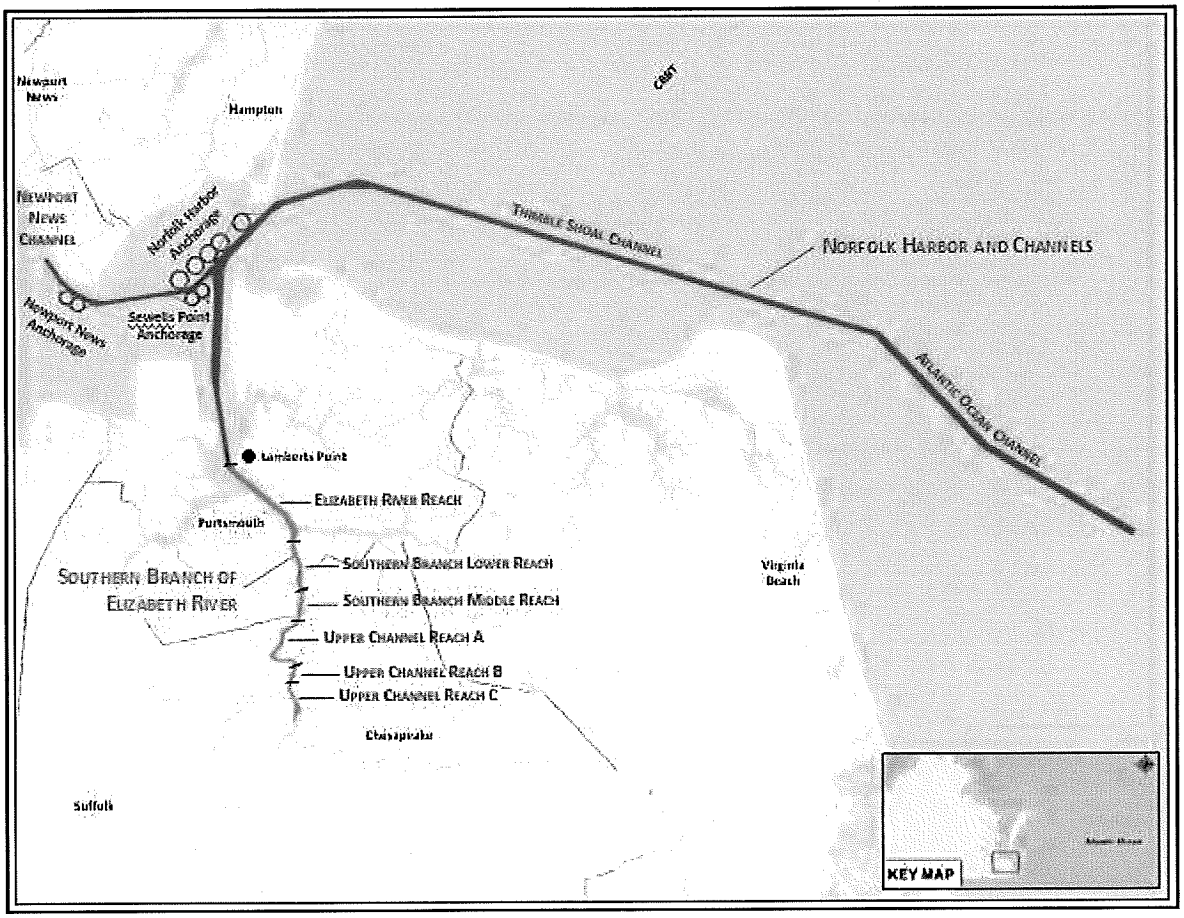

Figure 1: Location Plan

c. Factors Affecting the Scope and Level of Review. The focus of this Review Plan is on the implementation documents (DDR and P&S) for the Norfolk Harbor Navigation Improvements Project. An assessment of the need for a Type II Independent External Peer Review, Safety Assurance Review, is documented in Section 6 of this Review Plan. This assessment by the members of the Operations Branch with concurrence by the Norfolk District Chief of Engineering and Construction Division considered life safety and other factors including whether the project includes redundancy, resiliency, and robustness; and whether the project has unique construction sequencing. This assessment includes all components of the project.

4. DISTRICT QUALITY CONTROL/QUALITY ASSURANCE (DQC) AND BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, ENVIRONMENTAL, AND SUSTAINABILITY (BCOES) REVIEW

All implementation documents shall undergo DQC, an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in

the Project Management Plan (PMP). The Norfolk District will manage the DQC and BCOES reviews.

a. Documentation of DQC and BCOES Reviews. DQC and BCOES will be documented through the use of DrChecks and DQC/ BCOES certificates.

b. Products to Undergo DQC and BCOES. All applicable documents will undergo DQC and BCOES reviews.

c. Required DQC and BCOES Expertise. DQC and BCOES reviews will be performed by the appropriate staff members in the Norfolk District that are not involved in the development of implementation documents. The DQC and BCOES reviews supplement the reviews provided by the Project Delivery Team during the course of completing the DDR and P&S.

5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all implementation documents. The objective of the ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the Norfolk District that is not involved in the day-to-day production of the project/ product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. The ATR team lead will be from outside the home MSC.

a. Products to Undergo ATR. The products that will undergo ATR are the DDR and the Plans and Specifications.

b. Required ATR Team Expertise

ATR Team Members/ Disciplines	Expertise Required
ATR Lead	The ATR lead shall be a senior professional with extensive experience in preparing Civil Works implementation documents and conducting ATRs. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline.
Environmental Resources	Team member will have independently completed EA/EISs and be well versed in the NEPA process, will have participated in partnerships with other environmental resource agencies, will have experience with identifying and resolving environmental issues in a navigation project, and will have experience with Section 103 and 106 actions and documentation.
Geotechnical Engineer or 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.
Civil Engineering	Team member will be an expert in the field of civil engineering, especially in the development and review of navigation projects.
Construction Manager	Team member shall have at least 7 years of construction management experience with dredging and disposal operations, channels and navigation project features. Team member will have experience as an Administrative Contracting Officer of navigation projects, ideally including new work construction.

c. Documentation of ATR. DrChecks review software will be used to document all ATR comments, responses, and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

(1) The review concern--identify the product's information deficiency or incorrect application of policy, guidance, or procedures;

(2) The basis for the concern--cite the appropriate law, policy, guidance, or procedure that has not been properly followed;

(3) The significance of the concern--indicate the importance of the concern with regard to its potential impact on the plan components, efficiency, effectiveness, implementation responsibilities, safety, Federal interest, or public acceptability; and

(4) The probable specific action needed to resolve the concern--identify the actions that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist. The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO/MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

d. Review Report. At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

(1) Identify the documents reviewed and the purpose of the review.

(2) Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer.

(3) Include the charge to the reviewers.

(4) Describe the nature of their review and their findings and conclusions.

(5) Identify and summarize each unresolved issue (if any), and

(6) Identify and summarize each ATR comment, the PDT response, a brief summary of the pertinent points in the follow on discussion, including any vertical coordination, and the agreed upon resolution.

e. ATR Certification. ATR will be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review shall be completed for the implementation documents. A sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

An IEPR may be required for implementation documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-217, is made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. There are two types of IEPR:

a. Type I IEPR. Type I IEPRs are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-217.

b. Type II IEPR. Type II IEPRs, or Safety Assurance Reviews (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

c. Decision on IEPR.

(1) Type I IEPR's are conducted on project studies and reports. Since this Review Plan deals with implementation documents, a Type I IEPR is not applicable.

(2) Type II Independent External Peer Review, Safety Assurance Review (SAR), is required by EC 1165-2-217 for hurricane and storm risk management and flood risk management projects, as well as other projects where existing and potential hazards pose a significant threat to human life. The District Chief of Engineering has made a risk informed decision that this project does not pose a significant threat to human life (public safety) and therefore a SAR will not be performed. Type II IEPR is not applicable.

d. Products to Undergo IEPR. Not applicable.

e. Required IEPR Panel Expertise. Not applicable.

f. Documentation of IEPR. Not applicable.

7. POLICY AND LEGAL COMPLIANCE REVIEW

All implementation documents will be reviewed for their compliance with law and policy. DQC facilitates the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of results in implementation documents.

8. COST ENGINEERING DIRECTORATE OF EXPERTISE (DX) REVIEW AND CERTIFICATION

Certification of the Total Project Cost Summary (TPCS) is required every two years or when a change in the project warrants a re-certification of the costs. The Certification is provided from the Cost Mandatory Center of Expertise (Cost MCX) and is considered a separate ATR review. The development of Independent Government Estimates and Current Working Estimates to reflect final bid packages will undergo DQC.

9. MODEL CERTIFICATION AND APPROVAL

Not applicable since this project is in the Preconstruction Engineering and Design Phase and this relates to the use of certified or approved models for planning activities.

10. REVIEW SCHEDULES AND COSTS

a. ATR Schedule and Cost. The schedule and costs budgeted for ATR reviews are as follows:

(1) Submittal of 90% Plans and Specifications: TBD: Day 1

(2) Kickoff meeting: TBD; Day 1

(3) Review start: TBD; Day 1

(4) Back-check start: TBD; Day 30

(5) Report: TBD; Day 45

(6) Certificate: TBD; Day 60

(7) Budgeted ATR costs: $30,000

b. IEPR Schedule and Cost. Not applicable

c. Model Certification/ Approval Schedule and Cost. Not applicable

11. PUBLIC PARTICIPATION

As significant changes or developments occur, the District will present this information to the Virginia Port Authority and the applicable stakeholder agencies. Any significant comments or concerns raised by the Project Delivery Team that will include our non-Federal sponsors and stakeholders will be brought to the attention of the ATR panel.

12. REVIEW PLAN APPROVAL AND UPDATES

The North Atlantic Division Commander, or his representative, is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC (RMO), and HQUSACE members) as to the appropriate scope and level of review for the implementation documents. Like the PMP, the Review Plan is a living document and may change as the engineering and design progresses. The home district is responsible for keeping the Review Plan up to date. Significant changes to the Review Plan (such as changes to the scope and/ or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan.

13. REVIEW PLAN POINTS OF CONTACT

Public questions and/or comments on this Review Plan can be directed to the following points of contact:

- NAO, Chief, Design Section Operations Branch, 757-201-7584
- NAO, Project Manager, 757-201-7271
- NAO Project Manager, 757-201-7616

ATTACHMENT 1 - TEAM ROSTERS

District Project Delivery Team

Responsibility	Name	Contact
Technical Manager/ Navigation	Stephen Powell	757-201-7788
Project Manager	Holly Carpenter	757-201-7271
Project Planner	Dan Hughes	757-201-7539
Geotechnical Engineer	Virginia Port Authority Contractor - TBD	N/A
Environmental Resources	Rob Pruhs	757-201-7130
Construction	Jason Flowers	757-201-7017

ATR Team

Name	Role	Review District
TBD	ATR Lead	TBD
TBD	Civil Engineer (Navigation)	TBD
TBD	Geotechnical Engineer	TBD
TBD	Environmental Resources	TBD
TBD	Construction Manager	TBD

Vertical Team

Name	Role	Phone Number
Richard Klein, P.E.	NAO-PM-R; Chief, Programs and Civil Works Branch	757-201-7243
Susan Conner	NAO-WR-P; Chief, Planning and Policy Branch	757-201-7764
Terry Deglandon, R.A.	NAO-CE-E; Chief, Engineering Branch	757-201-7220
Keith Lockwood, MBA, LEED AP, FPC	NAO-EC-C; Chief, Operations Branch	757-201-7004
Ralph LaMoglia, P.E., M.S.	NAD, Senior Water Resources Engineer	347-370-4599

SAMPLE STATEMENT OF TECHNICAL REVIEW

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the *<type of product>* for *<project name and location>*. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-217. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks^{sm}.

SIGNATURE

_____ _____

Name Date

ATR Team Leader

Office Symbol/Company

SIGNATURE

_____ _____

Name Date

Project Manager

Office Symbol

SIGNATURE

_____ _____

Name Date

Architect Engineer Project Manager[1]

Company, location

SAMPLE STATEMENT OF TECHNICAL REVIEW (Cont'd)

SIGNATURE

Name Date

Review Management Office Representative

Office Symbol

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: *Describe the major technical concerns and their resolution.*

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

SIGNATURE

_____ _____

Name Date

Chief, Engineering Division

Office Symbol

SIGNATURE

_____ _____

Name Date

Architect Engineer Principal

Office Symbol

SIGNATURE

_____ _____

Name Date

Chief, Business Technical Division, NAD

Office Symbol

[1] Only needed if some portion of the ATR was contracted.

ACRONYMS AND ABBREVIATIONS

Term	Definition	Term	Definition
AFB	Alternative Formulation Briefing	NED	National Economic Development
ASA(CW)	Assistant Secretary of the Army for Civil Works	NER	National Ecosystem Restoration
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
CSDR	Coastal Storm Damage Reduction	O&M	Operation and maintenance
DPR	Detailed Project Report	OMB	Office and Management and Budget
DQC	District Quality Control/Quality Assurance	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DX	Directory of Expertise	OEO	Outside Eligible Organization
EA	Environmental Assessment	OSE	Other Social Effects
EC	Engineer Circular	PCX	Planning Center of Expertise
EIS	Environmental Impact Statement	PDT	Project Delivery Team
EO	Executive Order	PAC	Post Authorization Change
ER	Ecosystem Restoration	PMP	Project Management Plan
FDR	Flood Damage Reduction	PL	Public Law
FEMA	Federal Emergency Management Agency	QMP	Quality Management Plan
FRM	Flood Risk Management	QA	Quality Assurance
FSM	Feasibility Scoping Meeting	QC	Quality Control
GRR	General Reevaluation Report	RED	Regional Economic Development
Home District/MSC	The District or MSC responsible for the preparation of the decision document	RMC	Risk Management Center

ACRONYMS AND ABBREVIATIONS (Cont'd)

Term	Definition	Term	Definition
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RMO	Review Management Organization
IEPR	Independent External Peer Review	RTS	Regional Technical Specialist
ITR	Independent Technical Review	SAR	Safety Assurance Review
LRR	Limited Reevaluation Report	USACE	U.S. Army Corps of Engineers
MSC	Major Subordinate Command	WRDA	Water Resources Development Act