DEPARTMENT OF THE ARMY
NORTH ATLANTIC DIVISION, US ARMY CORPS OF ENGINEERS
FORT HAMILTON MILITARY COMMUNITY
BROOKLYN, NEW YORK 11252-6700

DEC 14 2012

REPLY TO
ATTENTION OF

CENAD-PD-PP

MEMORANDUM FOR Commander, Norfolk District, ATTN: CENAO-WR-P

SUBJECT: Review Plan Approval for Willoughby Spit and Vicinity, Norfolk, VA General Reevaluation Report

1. The attached Review Plan for the subject study has been prepared in accordance with EC 1165-2-209, Civil Works Review Policy.

2. The Review Plan has been coordinated with the Coastal Storm Damage Reduction Planning Center of Expertise of the North Atlantic Division, which is the lead office to execute this plan. For further information, contact Mr. Larry Cocchieri at 347-370-4571. The Review Plan currently does not include independent external peer review due to a pending approval decision by Headquarters, U.S. Army Corps of Engineers.

3. I hereby approve this Review Plan, which is subject to change as study circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this Review Plan or its execution will require new written approval from this office.

Encl

KENT D. SAVRE
Colonel, EN
Commanding

DRAFT REVIEW PLAN

Willoughby Spit and Vicinity, Norfolk, VA
General Reevaluation Report

Norfolk District

MSC Approval Date: Pending HQUSACE decision on IEPR
Last Revision Date: 31 October 2012

US Army Corps
of Engineers ®

REVIEW PLAN

Willoughby Spit and Vicinity, Norfolk, VA
General Reevaluation Report

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- **PURPOSE AND REQUIREMENTS**

a. **Purpose.** This Review Plan defines the scope and level of peer review for the Willoughby Spit and Vicinity, Norfolk, VA General Reevaluation Report.

b. **References**

- Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
- EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
- Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
- 22500-NAD, USACE North Atlantic Division Regional Quality Assurance Program (R-QAP), March 27, 2012
- Project Management Plan Dated July 2008

c. **Requirements.** This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products 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. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

- **REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION**

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the decision document. The RMO for the peer review effort described in this Review Plan is Larry Cocchieri of the Coastal Storm Damage Reduction Planning Center of Expertise.

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to ensure the appropriate expertise is included on the review teams to assess the adequacy of cost estimates, construction schedules and contingencies.

- **STUDY INFORMATION**

a. **Decision Document.** The Willoughby Spit and Vicinity project was authorized for construction by Section 501 of the Water Resources Development Act of 1986 (Public Law 99-662). The study will investigate if the authorized project continues to be justified and if it is still the NED plan or if another alternative is now the NED plan. The decision document

being prepared is a General Reevaluation Report that will be accompanied by an environmental assessment. The approval authority for the document, should the authorized project be the recommended plan, is with HQUSACE.

b. Study/Project Description. The Willoughby Spit and Vicinity project area is located entirely within the City of Norfolk and consists of 7.3 miles of southern Chesapeake Bay extending east from the tip of Willoughby Spit near the Hampton Roads Bridge-Tunnel to the Federal navigation project at Little Creek Inlet (see Figure 1 at the end of this document). This area was the subject of a four-year investigation conducted by the Norfolk District Corps of Engineers which culminated in the completion in January 1983 of a feasibility report and final environmental impact statement entitled "Willoughby Spit and Vicinity, Norfolk, Virginia, Hurricane Protection and Beach Erosion Control." The document concluded that the threat of coastal storm damage was a major problem along the project area shoreline and recommended the construction and periodic nourishment of a 60-foot-wide protective beach berm at an elevation of 5.0 feet above mean low water, along the entire shoreline where an adequate berm did not exist. This recommendation was later authorized as a Federal project in the Water Resources Development Act of 1986.

During the late 1980's and early 1990's, the City of Norfolk chose to implement small, stopgap projects along the project area in lieu of supporting the authorized Federal project. In February 1998, the City entered into a Design Agreement to initiate design investigations for the authorized Federal project. However, later that year, the City requested that the design be terminated because the City had concluded that the Federal project would not accommodate its needs and schedule for a storm damage reduction project. The project was terminated at that time and the remaining design funds of $350,000 were reprogrammed from the project.

The City proceeded on its own to build breakwaters and to obtain beach nourishment from another source in 1998. With the assistance of the Commonwealth of Virginia, the City constructed a series of breakwaters along the project shoreline in the late 1990's. However, Commonwealth funding was discontinued before beach nourishment behind the breakwaters could be accomplished, leaving the project area with a reduced level of protection. Shoreline recession, especially along the easternmost portion of the project area, continues to be a major problem. The City requested a restart of the PED phase effort to include a General Reevaluation Study to determine continued Federal interest in the authorized project or a reformulated project.

Congress added funds and corresponding language in Fiscal Year 2004, which directed the Corps to conduct a reconnaissance-like study to determine if the authorized project continued to meet the current needs of the City of Norfolk, was still economically feasible, and in the Federal interest to construct. That report, which was completed in September 2004, determined that the authorized project or a reformulated project would be in the Federal interest and recommended that the General Reevaluation Study be conducted.

c. **Factors Affecting the Scope and Level of Review.**

- Some parts of the study may be challenging in that they involve the use of a new, certified model;
- Project risks are most likely to occur with changes in the climate. Higher projected sea level rise could result in more residual damages. The proposed beach nourishment project is not a hard structure and adjusts to natural forces. Regardless of the rate of sea level rise, the beach fill project will be monitored annually and renourished approximately every 9 years. Monitoring data will provide input to determining the details of each renourishment of the beach. If an accelerated sea level rise occurs, erosion volumes would increase and renourishment volumes will increase, shortening the life of designated borrow areas. A Limited Reevaluation Report (LRR) on borrow sources would be conducted to investigate additional borrow sources;
- The project will not be justified by life safety and a threat to human life is not likely. Hurricane and storm damage reduction projects are justified by the damage prevented to structures in the project area and are not designed to increase human safety. Project nonperformance is not expected to affect human safety because measures have been put in place by the city of Norfolk and Commonwealth of Virginia to protect life safety during storm events and will continue to be implemented throughout the life of the project;
- There has been no request by the Governor of the affected state for a peer review by independent experts;
- The project/study is not likely to involve significant public dispute as to the size, nature, or effects of the project. The local community is in favor of a project and supports any effort to reduce storm damage;
- The project/study is not likely to involve significant public dispute as to the economic or environmental cost or benefit of the project. The local community is in favor of a project and supports any effort to reduce storm damage;
- The information in the decision document or anticipated project design is not based on novel methods, does not involve the use of innovative materials or techniques, does not present complex challenges for interpretation, nor does it contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices. The model used is a certified model and the methods used are tried and true techniques for construction shoreline protection; and
- The project design is not anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule. The project is a shoreline protection project with no sequencing or otherwise unique construction parameters used.

d. **In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. The in-kind products and analyses to be provided by the non-Federal sponsor include: There are no in-kind products provided by the sponsor as part of the cost sharing agreement. The sponsor has provided semi-annual beach profile surveys.

- **DISTRICT QUALITY CONTROL (DQC)**

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is 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 home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home MSC.

a. **Documentation of DQC.** The DQC Report will include the comments received during internal review and their responses, technical review meeting notes and a Technical and Legal Review Certification.

b. **Products to Undergo DQC.** The General Reevaluation Report and Appendices as well as the Environmental Assessment will undergo DQC.

- **AGENCY TECHNICAL REVIEW (ATR)**

ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.). The objective of 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 for the public and decision makers. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the home 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 draft General Reevaluation Report and accompanying appendices as well as the Environmental Assessment will undergo ATR before submission for concurrent review and approval by NAD and HQUSACE.

b. **Required ATR Team Expertise.** The ATR team will be comprised of individuals that have not been involved in the development of the decision document and will be chosen based on expertise, experience, and/or skills. The members will roughly mirror the composition of the PDT. It is anticipated that the ATR team will consist of 9-11 members. The ATR team members will be identified by the CSDR-PCX at the earliest possible date. The cost engineering expert on the team shall be coordinated with CENWW – Cost Estimating Directory of Expertise.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. 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 (such as planning, economics, environmental resources, etc).
Plan Formulation	The plan formulation reviewer should be a senior water resources planner with experience in coastal storm damage reduction projects.
Economics	The economics reviewer should be a senior economist with experience in coastal storm damage reduction projects and use of the Beach-fx model.
Environmental Resources	The environmental resources reviewer should be a senior environmental resources professional with experience in coastal storm damage reduction, preparing decision documents for coastal storm damage reduction and the production of Environmental Assessments for coastal storm damage reduction projects.
Cultural Resources	The cultural resources reviewer should be a senior cultural resources professional with experience in coastal storm damage reduction and preparing decision documents for coastal storm damage reduction. They should also be experienced in the cultural resource coordination necessary for this type of study.
Coastal/ Hydrology and Hydraulic Engineering	The coastal engineering reviewer will be an expert in the field and have a thorough understanding of hydrodynamic modeling and structural construction techniques such as beach berm construction. The reviewer will also have extensive experience is coastal processes and coastal modeling.
Geotechnical Engineering	The geotechnical engineering reviewer will be an expert in the field and have a thorough understanding of borrow site analysis.
Cost Engineering	The cost engineering reviewer should be a senior cost engineer certified by the Cost Engineering Directory of Expertise (DX), located in the Walla Walla District.
Real Estate	The real estate reviewer should be a senior real estate professional with experience in preparing Real Estate Plans involving property acquisition and potential temporary construction easements.

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:

- The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
- The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
- The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
- The probable specific action needed to resolve the concern – identify the action(s) 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 in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

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:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may 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 should be

completed, based on work reviewed to date, for the final Draft Report. A sample Statement of Technical Review is included in Attachment 2.

- **INDEPENDENT EXTERNAL PEER REVIEW (IEPR)**

IEPR may be required for decision 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 1165-2-209, 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:

- Type I IEPR. Type I IEPR reviews 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 1165-2-209.

- Type II IEPR. Type II IEPR, or Safety Assurance Review (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.

a. **Decision on IEPR.** It is not recommended that Type I IEPR be conducted for this General Reevaluation Study. This recommendation is made on the basis that the scope of this study is limited to a reanalysis of the findings of the 1983 Feasibility Report, the recommendations of which were authorized as a Federal project in the WRDA of 1986, as amended. The reanalysis can only affirm the previously authorized plan, reformulate and/or modify it as appropriate or conclude that no plan is currently justified. It is unlikely that the recommended plan resulting from this study will have any impacts to human life or the environment that were not already addressed in the 1983 Feasibility Study. While the initial cost to implement the recommended project is well below the $45M total project cost limit specified in EC 1165-2-209, the total estimated project cost (to include periodic renourishment over the life of the project) exceeds the $45M limit. The current total

estimated cost for the tentatively selected plan is $52.8M. However, the tentatively selected plan in this decision document is same plan that was authorized for implementation in WRDA 1986. Once the previously authorized plan was updated to meet current engineering standards and the costs were estimated at current price levels, the total project cost was understandably higher than the 1986 estimate. The previously authorized plan is economically justified and in the Federal interest. It is for this reason that, even though the total project cost is now higher than $45M, Type I IEPR is not recommended for this study. The Norfolk District intends to apply for a Type I IEPR exclusion on the basis that the tentatively recommended plan in this decision document was previously authorized in WRDA 1986 and that none of the other conditions for Type I IEPR have been met. Type II IEPR is also not recommended on the basis that this project is not likely to impact life safety and that a Safetey Assurance Review is not needed. The following reasoning has been provided in support of this recommendation:

b. The only condition met for Type 1 IEPR is a total project cost that exceeds $45M. However, none of the other conditions described in Paragraph 11.d.(1) and Appendix D of EC 1165-2-209 have been met:

- Should the recommended project not perform as expected, there would be no significant impact to social well-being or the environment. If the recommended project fails to perform, damage to structures may be higher than expected, but no higher than they were before the implementation of a Federal project. Because the project purpose is storm damage reduction, the project will not be designed to prevent loss of life and project non-performance would not negatively affect social well-being;
- The General Reevaluation Report is not expected to contain influential scientific assessment. The analyses in this study were conducted as consistent with industry accepted data, methods, and tools;
- The study does not have an EIS, and the recommended project is not controversial, does not adversely impact scarce or unique tribal, cultural, or historic resources, and does adversely impact fish and wildlife species (including those that are endangered) or their habitat;
- There has not been a request to conduct IEPR from a head od a Federal or state agency charged with reviewing the project; and
- The proposed project does not meet the criteria for Type II IEPR described in Paragraph 2 of Appendix D of EC 1165-2-20 including:
  - (i) the project is not justified by life safety and failure of the project would not pose a siginificant threat to human life;
  - (ii) the project does not involve the use of innovative materials or techniques where the engineering is based on novel methods, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices;
  - (iii)the project design does not require redundancy, resiliency, and/or robustness; and/or
  - (iv)the project does not have unique construction sequencing or a reduced or overlapping design construction schedule.

c. **Products to Undergo Type I IEPR.** Not Applicable

d. **Required Type I IEPR Panel Expertise.** Not Applicable

e. **Documentation of Type I IEPR.** Not Applicable

- **POLICY AND LEGAL COMPLIANCE REVIEW**

All decision documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports 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. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

- **COST ENGINEERING DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION**

All decision documents shall be coordinated with the Cost Engineering DX, located in the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and Type I IEPR team (if required) and in the development of the review charge(s). The DX will also provide the Cost Engineering DX certification. The RMO is responsible for coordination with the Cost Engineering DX.

- **MODEL CERTIFICATION AND APPROVAL**

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, for the purposes of the EC, are defined as any models and analytical tools that planners use 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 use of a certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

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 and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET)

Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

a. **Planning Models.** The following planning models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Certification / Approval Status
Beach-fx 1.0	Beach-*fx* is designed to assist users in evaluating and analyzing the benefits and costs of hurricane protection and storm damage reduction projects. The Beach-*fx* engineering-economic planning tool was developed through a collaborative effort between the Institute of Water Resources (IWR) and the U. S. Army Engineer Research and Development Center (ERDC).	Certified

b. **Engineering Models.** The following engineering models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
Sbeach	The U.S. Army Corps of Engineers' Storm-induced BEAch CHange Model (SBEACH) software developed by the Coastal Hydraulics Laboratory (CHL) was utilized to determine the short term beach profile response for each of the 16 modeled storms for the existing condition and each with project condition that will be analyzed. The existing condition is expected to represent future conditions in the Base Year of 2012 as well as throughout the planning period based on the City's past nourishment activities. The outputs from SBEACH will be utilized to populate the Storm Response Database for the BEACH-fx modeling.	Certified, HH&C CoP Preferred Model

- **REVIEW SCHEDULES AND COSTS**

a. ATR Schedule and Cost.

Task	Start Date	Completion Date
Submit Draft GRR for ATR	15 October 2012	15 October 2012
ATR of Draft GRR	15 October 2012	21 November 2012
District Addresses ATR Comments and Revises Draft GRR	26 November 2012	21 December 2012
ATR Back Check	2 January 2013	16 January 2013
District Makes Final Revisions and Prints Final Draft GRR Based on ATR Comments	17 January 2012	18 January 2013
Submit Draft GRR to NAD and HQUSACE for Concurrent Review	18 January 2013	18 January 2013
NAD/HQUSACE Review of Draft GRR	21 January 2013	1 March 2013
NAD/HQUSACE Review Back Check	4 March 2013	15 March 2013
District Revises and Prints Final GRR Based on NAD/HQUSACE Comments	18 March 2013	29 March 2013

Considering the number of reviewers needed and the complexity of the study, the ATR is expected to cost approximately $40,000.

b. Type I IEPR Schedule and Cost. Not-Applicable

c. Model Certification/Approval Schedule and Cost. No models will need certification.

- **PUBLIC PARTICIPATION**

Public meetings will be held when needed to communicate with the non-Federal sponsor and when public coordination is required for compliance with Corps and Environmental policies.

- **REVIEW PLAN APPROVAL AND UPDATES**

The North Atlantic Division Commander 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 decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. The home district is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3. 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. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

- **REVIEW PLAN POINTS OF CONTACT**

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

- Robert Pretlow, Project Manager: (757) 201-7385
- Joe Forcina, North Atlantic Division DST Manager: (347) 370-4584
- Larry Cocchieri, Coastal Storm Damage Reduction Planning Center of Expertise/Review Manager: (347) 370-4571

ATTACHMENT 1: TEAM ROSTERS

A. Norfolk District Project Delivery Team

PDT Member	Role
Robert Pretlow	Project Manager
Rachel Haug	Planning Technical Team Lead
Jeff Strahan	Economics
Janet Cote	Environmental Analysis
John Haynes	Cultural/Historical Analysis
Mark Hudgins	Hydraulics and Hydrology/Coastal Engineering
Owen Reece	Hyraulics and Hydrology/Coastal Engineering
Mike Hall	Cost Engineering
Jeff Zoeckler	Geo-Environmental Analysis
Karin Dridge	GIS
David Parson	Real Estate

B. ATR Team

ATR Team Member	Role
TBD	ATR Lead
TBD	Planning
TBD	Economics
TBD	Environmental Resources
TBD	Cultural Resources
TBD	Hydrology and Hydraulic Engineering
TBD	Coastal Engineering
TBD	Geotechnical Engineering
TBD	Cost Engineering
TBD	Real Estate

C. Vertical Team

Vertical Team Member	Role
Larry Cocchieri	RMO
Joe Forcina	MSC
Cathy Shuman	RIT

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECSION DOCUMENTS

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 1165-2-209. 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

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
Chief, Planning Division
Office Symbol

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

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

NOTE: Revisions to the Review Plan since it was last approved by the MSC Commander should be documented in Attachment 3. Significant changes (such as a change in the level or scope of review) require re-approval by the MSC Commander following the process used for initially approving the plan. DELETE THIS TEXT BOX BEFORE FINALIZING THE REVIEW PLAN.

ATTACHMENT 4: 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
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