

# **REVIEW PLAN**

**Lake Worth Inlet, Palm Beach County, Florida  
Feasibility Study with Environmental Impact Statement**

**Jacksonville District**

December 2012

P2 #131356

**MSC Approval Date: 12/12/12**

**Last Revision Date: 2008**



**US Army Corps  
of Engineers®**

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## 1. PURPOSE AND REQUIREMENTS

**Purpose.** This Review Plan(updated November 2012) defines the scope and level of peer review for the Lake Worth Inlet, Palm Beach County, Florida, Feasibility Study with Environmental Impact Statement.

### a. References

- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
- (2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
- (3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- (4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
- (5) Lake Worth Inlet, Palm Beach County, Florida, Feasibility Study with Environmental Impact Statement Project Management Plan (PMP ) dated xx XXX 201X

**b. 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).

## 2. 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 lead RMO will be the Deep Draft Navigation Planning Center of Expertise (DDNPCX) and the Ecosystem Planning Center of Expertise (ECOPCX) will be a cooperating RMO due to the environmental model ATR and certification.

The lead RMO will also 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. This is a single-purpose navigation project. *Scope of the Safety Assurance Review (SAR) and coordination with the Corps Risk Management Center (RMC), if needed, will be described in a follow-on implementation phase review plan. RMC coordination is not anticipated during this decision document phase.*

## 3. STUDY INFORMATION

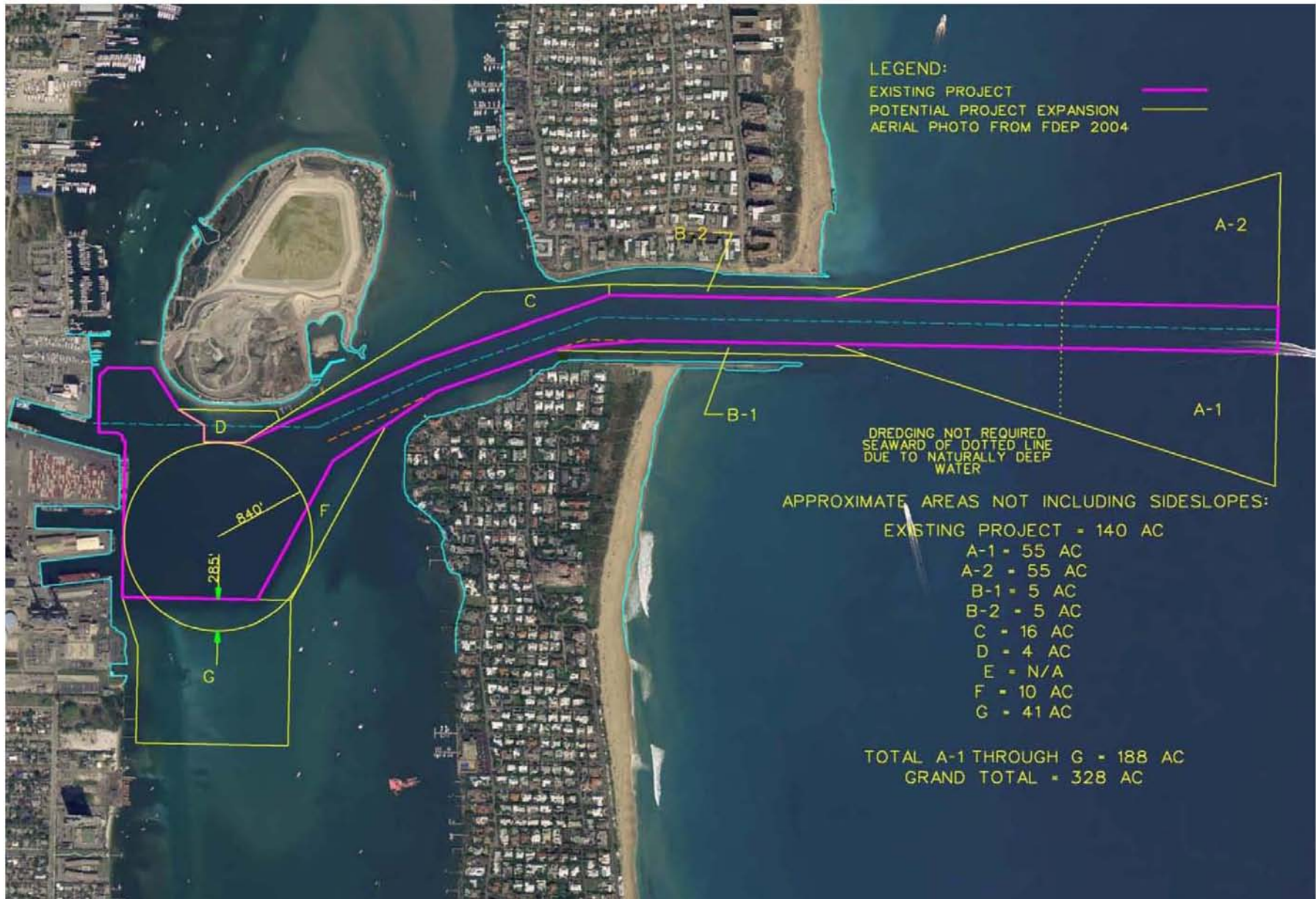
**a. Decision Document.** The Lake Worth Inlet, Palm Beach County, FL, Feasibility Study has been funded to investigate improvements to the Lake Worth Inlet project, located in Palm Beach Harbor. Relieving navigation congestion and improving safety are the primary missions of the feasibility

study. Compliance with the National Environmental Policy Act (NEPA) will be accomplished by preparation of an Environmental Impact Statement (EIS). The decision document will require Congressional authorization.

- b. Study/Project Description.** Lake Worth Inlet, Palm Beach Harbor is in Palm Beach County, Florida (Figure 1, foldout map). The Port of Palm Beach is located 1.1 miles west of the entrance to Lake Worth Inlet. The north side of the harbor is Riviera Beach and the south side of the harbor is West Palm Beach. Palm Beach Harbor is 259 miles south of Jacksonville and 68 miles north of Miami.

The harbor project provides access to deep draft vessel traffic using terminal facilities located at the Port of Palm Beach. The present authorized channel is as follows: an entrance channel 35 feet deep, 400 feet wide, and 0.8 miles long, merging with an inner channel 33 feet deep, 300 feet wide and 0.3 miles long, then flaring into a turning basin, 1,400 feet north-south along the side next to the berthing area by a minimum of 1,210 feet east-west; maintenance of a local turning basin to the north of the project turning basin of 24 feet; and jetties and shore revetments at the inlet. The entire length of the project is approximately 1.6 miles. Maintenance of the northern turning basin including the area of slip 1 is authorized to 24 feet; however much of this area is constructed and maintained to 33 feet by the non-Federal sponsor.

Figure 1: Foldout Map of Lake Worth Inlet, Palm Beach County, Florida



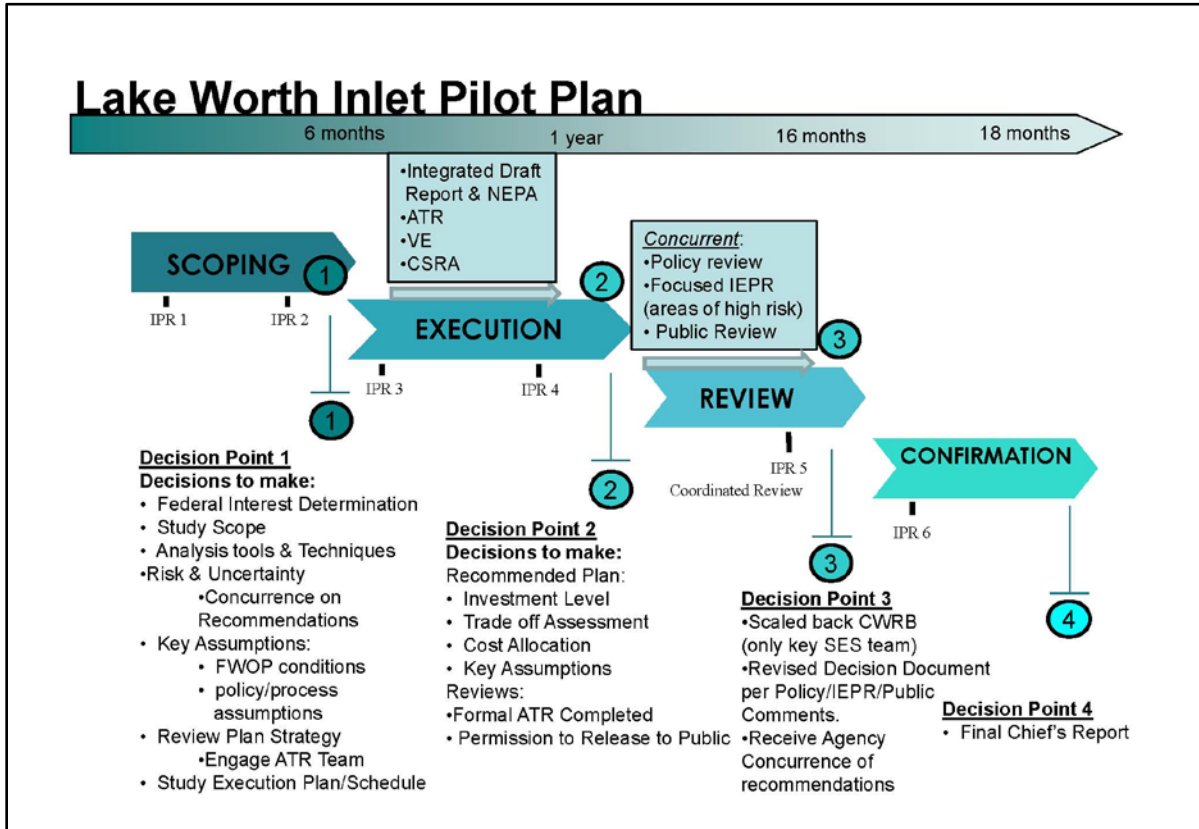
In order to test methods the Corps has developed for reducing time required to complete feasibility studies, this project has been included in the National Pilot Program for Feasibility Studies. The pilot initiative for the Palm Beach Harbor Feasibility Study will provide an opportunity to test principles that have been outlined in the USACE Recommendations for Transforming the Current Pre-Authorization Study Process (January 2011) and associated presentation materials. This new process does not follow the typical USACE planning process and requires greater early involvement as well as input and decisions from the Vertical Team (South Atlantic Division, Headquarters, and Assistant Secretary of the Army’s office) at multiple points throughout the study. Instead of following the traditional USACE planning milestones, the pilot study will be divided into four phases, each with a key decision point and associated In-Progress Reviews. The table below (**Table 1**) provides general timelines for the four pilot study phases, associated decision points, and duration of each phase based on the January 2011 recommendations. These durations assume that adequate funding is available and reviews are completed expeditiously. While designed to reduce study time, the Pilot program does not reduce the level of decision authority a US Army Corps of Engineers Chief’s Report for Congressional Authorization nor the technical expertise for conducting and reviewing the study and its recommendations.

**Table 1: Pilot Study Phases**

<b>Pilot Study Phase</b>	<b>Decision Point</b>	<b>Duration</b>
Initial Study Phase	Decision Point 1 – Federal Interest Determination	Month 3-6
Study Execution Phase	Decision Point 2 – Alternative Array and Plan Selection	Month 6-12
Review Phase	Decision Point 3 – Confirmation Brief	Month 12-16
Confirmation Phase	Decision Point 4 – Chief’s Report	Month 16-24

Since some of the pilot study principles will require team members and decision makers to accept a lower level of detail and higher level of uncertainty during the pre-authorization study phase, this review plan lists key decisions that will need to be made by the Vertical Team at each Decision Point or associated In-Progress Review in order for the study to progress to the next step. Uncertainty will vary throughout the study and will be addressed at each decision point. The review plan will be a living document that will be revised following key decisions throughout the process. The team’s path forward for is shown below in **Figure 2**.

Figure 2: Lake Worth Inlet, Palm Beach County, Planning Pilot Process



This project was nominated for the pilot program for the following reasons:

1. A 905(b) Analysis was approved for proceeding into the feasibility phase of planning on March 29, 2001.
2. The project has been subjected to funding delays which has lengthened the planning process.
3. The project has risk and uncertainty regarding changing economic conditions, as well as level of risk uncertainty for several environmental resources in the project area.
4. The Sponsor (Port of Palm Beach) is interested in completing the study as expeditiously as possible.

New Paradigm Concepts to test:

- Vertical integration and early decision-making.
- Balancing Uncertainty and accepting a lower level of detail.
- Federal Interest Determination. The study is to investigate and make a recommendation for project authorization, appropriation is not a part of the study.

## Study Authority

House Resolution dated 25 June 1998 authorized the Palm Beach Harbor (Lake Worth Inlet) study. The full text of the resolution is as follows:

“Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That the Secretary of the Army is requested to review the report of the Chief of Engineers on the Palm Beach Harbor, Florida, published as House Document 283, 86<sup>th</sup> Congress, 1<sup>st</sup> Session, and other pertinent reports, with a view of determining if the authorized project should be modified in any way at this time, with particular reference to widening the existing interior channel through Lake Worth Inlet.”

- c. **Factors Affecting the Scope and Level of Review.** This section will discuss the factors affecting the risk informed decisions on the appropriate scope and level of review. The discussion must be detailed enough to assess the level and focus of review and support the PDT, PCX, and vertical team decisions on the appropriate level of review and types of expertise represented on the various review teams.

Bulleted issues are addressed, as follows:

- **If parts of the study will likely be challenging (with some discussion as to why or why not and, if so, in what ways – consider technical, institutional, and social challenges, etc.):**
  - This is a navigation project, with potential to widen or deepen parts of the channel. Similar work has been conducted in this and other harbors around the state, so it is expected that challenges will be within the scope of what has already been experienced. Inherent to this type of project, deep draft economics factors and endangered species coordination present some technical challenges.
- **A preliminary assessment of where the project risks are likely to occur and what the magnitude of those risks might be (e.g., what are the uncertainties and how might they affect the success of the project):**
  - There is a potential risk of not knowing the exact dredge material characteristics at this time; however, more core borings will be done during plans and specs to learn more about the material composition in the tentatively selected plan. Prediction of future economic conditions includes some risk, but is similar to other navigation studies. Environmental risks will be lessened through data collection, coordination with agencies, and consideration during construction.
- **If the project will likely be justified by life safety or if the project likely involves significant threat to human life/safety assurance (with some discussion as to why or why not and, if so, in what ways – consider at minimum the safety assurance factors described in EC 1165-2-209 including, but not necessarily limited to, the consequences of non-performance on project economics, the environmental and social well-being [public safety and social justice]; residual risk; uncertainty due to climate variability, etc.) – the discussion of life safety should include**



**the assessment of the home District Chief of Engineering on whether there is a significant threat to human life associated with the project (per EC 1165-2-209 Frequently Ask Question 3.j.):**

- No. This project will use typical dredging practices and the project (widening and or deepening) will actually increase safety for the vessels that transit the channels each day.
- **If there is a request by the Governor of an affected state for a peer review by independent experts:**
  - There has not been such a request.
- **If the project/study is likely to involve significant public dispute as to the size, nature, or effects of the project (with some discussion as to why or why not and, if so, in what ways):**
  - No. Significant public dispute is not anticipated. The public is concerned about storm surge (which is not an issue and which can be conveyed through public outreach) and environmental resources, both of which will be communicated to the public.
- **If the project/study is likely to involve significant public dispute as to the economic or environmental cost or benefit of the project (with some discussion as to why or why not and, if so, in what ways):**
  - No. Significant public dispute is not anticipated.
- **If the information in the decision document or anticipated project design is likely to be based on novel methods, involve the use of 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 (with some discussion as to why or why not and, if so, in what ways); and**
  - No. Interpretation challenges, for this project, are typical of that for a deep draft navigation project and are not expected to present complex challenges for interpretation. Well established analytical methods and modes were employed and are not considered precedent-setting. Study conclusions are expected to be typical of a deep draft navigation project and are not expected to change prevailing practices.
- **If the project design is anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule (with some discussion as to why or why not and, if so, in what ways).**
  - The project could involve widening or deepening of the existing Federal channel for navigation. This is not expected to require redundancy, unusual resiliency and/or robustness, unique construction sequencing or reduced or overlapping design construction schedule. Some consideration during construction is expected in order to reduce environmental impacts; however, the methods would be similar to those implemented in other projects in Florida.

- d. **In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. There are no in-kind products or analyses to be provided by the non-Federal sponsor.

#### 4. 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.** Internal District Quality Control of product quality will be accomplished by DQC team reviews and documented in DrChecks review software. DQC comments and responses will be a permanent part of study documentation and will be provided to the ATR team for use in their reviews.
- b. **Products to Undergo DQC.** The Draft and Final Feasibility Reports and EIS, with technical appendices, will be submitted to DQC prior to the formal ATR. On-going DQC may be requested at other times and will generally be of limited scope and managed by the office generating the work product.
- c. **Required DQC Expertise.** Experienced Jacksonville District team members not involved in the execution of the study, representing all pertinent disciplines, will participate in DQC, including: plan formulation, economics, environmental compliance, engineering design, coastal hydraulics and hydrology, geotechnical engineering, cost engineering and real estate. DQC team will not be involved in the study execution. If sufficient experienced staff independent of the study team cannot be secured within the District, SAJ leadership will seek assistance from other SAD District and the appropriate Planning Center of Expertise (PCX). Other SAJ review plans state supervisors and section chiefs will be heavily involved with DQC.

#### 5. 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 in this case the Deep Draft Navigation Planning Center of Expertise (DDNPCX). The ATR 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 pilot process incorporates 4 formal Decision Points. However, the pilot planning process also allows the team to explore non-traditional methods to streamline the process. As such, on-going ATR will occur concurrently with study development and a formal ATR review will occur between IPR4 and DP2. This allows the ATR team to give their perspective and feedback concurrent with DQC or ahead of it, to ensure there is enough time to make any changes in fundamental “building blocks” for the project formulation and design. The following items will undergo formal ATR: 1) the Draft Feasibility Report and EIS (integrated) with technical appendices; 2) the Final Feasibility Report and EIS. UMAM and HEA Model Calculations and Assumptions will be reviewed by the Environmental Model ATR team reviewer. The UMAM and HEA Model Approval Plans will be provided to the ATR team as a reference for review.

The ATR team will be engaged throughout the planning process (beginning at DP1) instead of only at specific points. The ATR lead will be proactive and highly engaged with the project team and will participate in each DP and IPR. The ATR lead will also ensure that key ATR members attend IPR and DP teleconferences at the necessary strategic times. This will allow for a continuous and real time commenting approach to deal with ATR issues as they arise from meetings, and from any project documentation (which will be uploaded to an external Share point website). It should be noted that the ATR team members will provide unbiased feedback and will remain separate from the PDT.

- b. **Required ATR Team Expertise.** The ATR Team Leader and eight (6) technical disciplines were determined to be appropriate for review of the preliminary draft and final reports including: plan formulation, economics, environmental resources, hydraulics & hydrology, geotechnical engineering, civil engineering, cost engineering and real estate. **All should be well-versed in conduct of navigation studies studies.** Should this be DDN? Reviewers should be from outside of the project district and the review lead should be from outside the project MSC. The ATR lead may also be a technical reviewer.

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 Planning reviewer should be a senior water resources planner with experience in navigation projects.
Economics	The economics reviewer should be a senior water resources economist with experience in navigation projects, specifically with experience in application of HarborSym.
Environmental Resources	The environmental resources reviewer should be a senior water NEPA compliance specialist with experience in navigation projects.
Hydraulics and Hydrology	The reviewer should be a senior engineer with experience in hydraulic and hydrology aspects of navigation projects and Coastal Modeling.

Geotechnical Engineering	The geotechnical engineering reviewer should be a senior engineer with experience in geotechnical issues associated with navigation projects.
Cost Engineering	The cost engineering reviewer should be a senior cost engineer with experience in navigation projects. This team member will be designated by the Cost DX.
UMAM and HEA	The UMAM and HEA reviewer should be a model technical specialist with experience in environmental assessment models in Florida, Atlantic coastal ecosystems including sea grasses and hardbottoms. This reviewer could also serve as the Environmental Resources reviewer.
Real Estate	The Real Estate reviewer should be a senior person with experience in current real estate policy and law relating to navigation projects, and associated dredged material placement/mitigation features.

**c. Documentation of ATR.** DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the formal review process and also for the duration of the planning process as they arise for “continuous ATR”. Each intermediate review (the review may be pertaining to a document or a group of documents) during the “continuous ATR” period will be entered as a separate review in DrChecks with corresponding comments and responses. The draft and final report comments will likewise be entered as a separate review with corresponding comments and responses. Comments should be organized according to the nature of the comment, not the reviewer’s field of expertise. 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 selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
- (4) 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 of 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 ATR effort for the draft and final reports with EIS, 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 a summary that represents the views of the group as a whole, including any disparate and dissenting views.

ATR of draft and final reports 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 draft report, and final report. A sample Statement of Technical Review is included in Attachment 2.

## **6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)**

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 not limited to HSDR or FRM studies but must be considered for all Corps projects. 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 Type IEPR.** This project will be subjected to Type I IEPR due to the following reasons: 1) Cost near or above \$45 million; and 2) it contains an EIS. However, the navigation project itself will be typical of a navigation project and will not be using new methods. Although an EIS will be done and the project will include mitigation for seagrasses and hardbottoms, neither resource is significant within the area and has had good mitigation success in the past. The pilot process gives the team the opportunity to streamline the planning process. It is proposed that the IEPR is appropriately scaled and focused on areas of high risk to the project. The IEPR will occur concurrent to public review and policy review.

This section discusses the factors necessary to determine the appropriate scope and level of review for the decision document as specified in EC 1165-2-209. This information has been used to recommend the appropriate level of review and select the types of expertise represented on the review teams. The risk informed decision discussion is below and considers:

- ***The decision document meets some of the mandatory triggers for Type I IEPR described in Paragraph 11.d.(1) and Appendix D of EC 1165-2-209. Additional triggers which it does not meet are:***
  - **What are the consequences of non-performance on project economics, the environmental and social well-being (public safety and social justice)**
    - (i) Non-performance would only affect economics to the degree that it would keep the status quo of higher transportation costs for vessels as they wait to enter Palm Beach Harbor. Future conditions may compound the costs or affect growth of the local economy.
  - **Is the product likely to contain influential scientific information or be highly influential scientific assessment;**
    - (i) No. The product does not contain influential scientific information or contain influential scientific assessments.
  - **If and how the decision document meets any of the possible exclusions described in Paragraph 11.d.(3) and Appendix D of EC 1165-2-209.**
    - (i) Costs are likely greater than \$45 million and the study will include the completion of an EIS.
- **The status of any request to conduct IEPR from a head of a Federal or state agency charged with reviewing the project, if applicable:**
  - (i) There has been no such request.
- **The proposed project does not meet the criteria for conducting Type II IEPR described in Paragraph 2 of Appendix D of EC 1165-2-209, including:**
  - **if the Federal action is justified by life safety or failure of the project would pose a significant threat to human life;**
    - (i) No. This project will use typical dredging practices and the project (widening and or deepening) will actually increase safety for the vessels that transit the channels each day.

- **if the project involves the use of innovative materials or techniques where the engineering is based on novel methods, presents complex challenges for interpretations, contains precedent-setting methods or models, or presents conclusions that are likely to change prevailing practices**
  - (i) No. Interpretation challenges, for this project, are typical of that for a deep draft navigation project and are not expected to present complex challenges for interpretation. Well established analytical methods and modes were employed and are not considered precedent-setting. Study conclusions are expected to be typical of a deep draft navigation project and are not expected to change prevailing practices.
- **if the project design requires redundancy, resiliency, and/or robustness;**
  - (i) The project could involve widening or deepening of the existing Federal channel for navigation. This is not expected to require redundancy, unusual resiliency and/or robustness.
- **if the project has unique construction sequencing or a reduced or overlapping design construction schedule;**
  - (i) The project could involve widening or deepening of the existing Federal channel for navigation. This is not expected to require unique construction sequencing or reduced or overlapping design construction schedule.

**b. Products to Undergo Type I IEPR.** The Draft Feasibility Report and EIS, as well as technical appendices, will be reviewed.

**c. Required Type I IEPR Panel Expertise.** The following provides a description of the proposed panel members and expertise. The proposed two member panel includes the necessary expertise to assess the engineering, environmental, and economic adequacy of the decision document as required by EC 1165-2-209, Appendix D. The Outside Eligible Organization (OEO) will determine the final participants on the panel. The following table lists the suggested types of disciplines that might be included on the panel. The following disciplines are recommended based on the high risk factors as described in the risk register.

The main outcome of the risk register concludes that Environmental and Economics items will be the most influential parts of the study. Therefore, these two areas should attract the focus of the IEPR. This is in line with the national pilot program's idea to assume more risk on low risk items, and put emphasis more strategically on the high risk, or more influential, areas of the project study.

IEPR Panel Members/Disciplines	Expertise Required
Economics	The Economics Panel member will be a scientist from academia, a public agency, non-governmental entity, or an Architect-Engineer or Consulting Firm and hold a M.S. in the field of economics with a specialty, or at least five years experience, in navigation economic evaluation.
Environmental	The environmental panel member will be a scientist from academia, public agency, non-governmental entity, and will hold a <b>M.S. in the field of Biology or Marine Sciences</b> or Consulting Firm with a minimum 5 years demonstrated experience with environmental resources on the southern Atlantic coast of the United States.
IEPR Lead	The IEPR lead should be a senior professional with extensive experience and necessary skills and experience to lead a virtual team through the IEPR process. The IEPR lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
Plan Formulation	The Planning reviewer should be a senior water resources planner with experience in navigation projects.
Hydraulics and Hydrology	The reviewer should be a senior engineer with experience in hydraulic and hydrology aspects of navigation projects and Coastal Modeling.
Geotechnical Engineering	The geotechnical engineering reviewer should be a senior engineer with experience in geotechnical issues associated with navigation projects.

**d. Documentation of Type I IEPR.** The IEPR panel will be selected and managed by an Outside Eligible Organization (OEO) per EC 1165-2-209, Appendix D. Panel comments will be compiled by the OEO and should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 4.d above. The OEO will prepare a final Review Report that will accompany the publication of the final decision document and shall:

- 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; 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.

The IEPR will begin concurrently with public review and the the final Review Report will be submitted by the OEO within 75 calendar days from the start date. USACE shall consider all recommendations contained in the Review Report and prepare a written response for all recommendations adopted or not adopted. The final decision document will summarize the Review Report and USACE response. The Review Report and USACE response will be made available to the public, including through electronic means on the internet.



- e. **Type II IEPR - Failure of the project, as currently envisioned, will not pose a significant threat to human life. Therefore, a Type II IEPR is not planned at this time. A risk-informed decision concerning the timing and appropriate level of reviews for the project implementation phase will be prepared and submitted for approval in an updated Review Plan prior to initiation of the design/implementation phase of this project.**

## **7. 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. The “National Pilot Program project of an 18 month feasibility” study ideals will be adhered to, as described in the nomination letter dated February 17, 2011 and in the March 2011 USACE publication, *Transforming the Current Pre-Authorization Study Process*.

<https://kme.usace.army.mil/CoPs/CivilWorksPlanning-Policy/Shared%20Documents/Transformation%20of%20Planning/Transformation%20Fact%20Sheet%2020113003sbh.pdf>

## **8. 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.

## **9. 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:

The planning economics model that will be employed is HarborSym Widening and Deepening, a certified Corps-developed national model. Both HarborSym models will undergo model review (inputs and outputs) as a part of the ATR. The HarborSym widening model has already been certified; it is assumed that the HarborSym Deepening will already have been certified. If it has not, this project will request an approval for use. No spreadsheet models are being employed.

The environmental models to be used are UMAM (state required) and HEA (required by Federal agency, NOAA). Although neither are Corps-certified models, both were submitted for review and “approval for use” through the ECO-PCX, and were approved on June 20, 2012.

- a. Approval of the use of UMAM /HEA in the Lake Worth Inlet Feasibility Study will be contingent upon the following four conditions. These conditions will be documented by the Proponent and provided to the designated ATR team to be reviewed with the project report.
- The Proponent will document the names of the participants of the UMAM evaluation including their level of expertise related to UMAM evaluations, impacted ecosystems, and restoration. The UMAM team will be an interagency team and be comprised of individuals with training and experience in the application of UMAM.
  - The Proponent will document the assumptions related to the scoring of each category of the UMAM evaluation. If needed, this documentation will be continued on separate page(s) due to space limitations on the standard UMAM form.
  - The Proponent will clearly document assumptions associated with the assignment of a risk factor. If a risk factor greater than one is used, justification will be provided. Monitoring, including adaptive management, would be a part of the mitigation plan.
  - The Proponent will broaden the UMAM evaluation to evaluate the impact site and mitigation site(s) for multiple target years over the period of analysis for the resources involved. This evaluation will include both the future without project condition and the with project condition. Normally, the UMAM evaluation looks at four conditions: current conditions at the impact site, conditions at the impact site following action, current conditions at the mitigation site, and condition of mitigation site following achievement of benefits.

- b. **Engineering Models.** The following engineering models have been used in the development of the decision document:

- (1) Hydraulic Modeling: The 2D hydrodynamic model Coastal Modeling System (CMS) was setup and run to provide existing condition and alternative plan currents to the Ship Simulator. This work began several years ago and was completed in Sep 2011.
- (2) Ship Simulation Model: Prepared by STAR and EN-WC and verified by the Corps of Engineers Engineering Research and Development Center (ERDC), Vicksburg, MS.

## 10. REVIEW SCHEDULES AND COSTS

- a. **ATR Schedule and Cost.** ATR of the Draft Feasibility Report and EIS, with technical appendices and UMAM and HEA Models, would occur between IPR4 and DP2, and is currently scheduled for January 2013. It is estimated to cost approximately \$70,000. ATR of the Final Feasibility Report and EIS is currently scheduled for June 2013. It is estimated to cost approximately \$16,000.
- b. **Type I IEPR Schedule and Cost.** Type I IEPR of the Draft Feasibility Report and EIS, with technical appendices would be scheduled for March 2013. It is estimated to cost approximately \$175,000.
- c. **Model Certification/Approval Schedule and Cost.** HEA and UMAM models will require one time approval for use through the ECO-PCX during ATR. The other planning and engineering models employed in this study are approved models that do not need additional approval for application on this project.

## 11. PUBLIC PARTICIPATION

Extensive resource agency, stakeholder and public coordination has been conducted throughout the preparation of the Decision Document. Coordination meetings were conducted to inform other federal and state agencies, stakeholders and the general public, of the status of the project and alternatives being considered and workshops to address technical issues. At a minimum, future review will be conducted as part of the National Environment Policy Act (NEPA) compliance process, including public review period of the Draft Environmental Impact Statement. Public comments will be listed and responded to in the Final Environmental Impact Statement. In addition, the public may comment on the Final EIS and Record of Decision.

## 12. REVIEW PLAN APPROVAL AND UPDATES

The South 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.

Task	Responsible Office	Duration	Start	End
Submit FSM doc to MSC		1 day	2/25/2011	2/28/2011
MSC and HQ review of FSM doc		75 days	3/1/2011	6/13/2011
Hold Risk Workshop on Pilot Program		2 days	8/23/2011	8/25/2011
Complete risk register, rescoping plan	SAJ	51 days	8/5/2011	10/16/2011
Hold DP1 - Federal Interest	All	4 days	10/17/2011	10/21/2011
Alternative Analysis and Draft Feas with EIS	SAJ	232 days	10/21/2011	9/10/2012
ATR - Ship Simulation Review	ATR/SAJ	6 days	3/12/2012	3/19/2012
ATR - Preliminary Benefits	ATR/SAJ	5 days	4/9/2012	4/13/2012
ATR - HarborSym Model Review (Inputs&Outputs)	ATR/SAJ	60 days	6/25/2012	9/14/2012
IPR4 - Brief TSP and VE Results/Status of Env. Interagency Coordination	ALL	5 days	6/25/2012	6/29/2012
ATR - Env Model (HEA/UMAM) Review (Inputs and Outpus)	ATR/SAJ	30 days	8/27/2012	10/5/2012
Cost & Schedule Risk Assessment (CSRA)& Walla Walla Cert	SAJ/Walla Walla	30 days	8/8/2012	9/18/2012
Cost and Econ Final Appedices due	SAJ	10 days	9/19/2012	10/2/2012
Report/EIS Edit with Econ/Cost	SAJ	6 days	10/3/2012	10/10/2012
DQC of Draft Feas with EIS	SAJ	11 days	10/11/2012	10/25/2012
ATR - Draft Report/EIS	ATR/SAJ	20 days	10/26/2012	11/22/2012
Submit Draft Report and EIS doc to MSC/HQ conc.	SAJ	10 days	11/23/2012	12/6/2012
Hold DP2 - Permission to Release to Public	ALL	4 days	12/7/2012	12/12/2012
SAD/HQ Approve Public Release of Draft Report	SAD/HQ	4 days	12/13/2012	12/18/2012
Concurrent policy review	SAD/HQ	55 days	12/19/2012	3/5/2013
Concurrent public review	Public	75 days	12/19/2012	4/2/2013
Concurrent IEPR	Contractor	100 days	12/19/2012	5/7/2013
Revise Final Feasibility Report and EIS doc	SAJ	20 days	5/8/2013	6/4/2013
Complete ATR/ Legal Review	ATR/SAJ	10 days	6/5/2013	6/18/2013
Submit Final Report with EIS to MSC/HQ conc.	SAJ	5 days	6/19/2013	6/25/2013
Division Engineer Transmittal Letter	SAD	20 days	6/26/2013	7/23/2013
Hold DP3 - CWRB	All	10 days	7/24/2013	8/6/2013
Final EIS to State and Fed Agencies	SAJ	30 days	8/7/2013	9/17/2013
SAJ Resolve Issues and Revise Report	SAJ	20 days	9/18/2013	10/15/2013
Chief of Engineers Report** (DP4)	HQ	20 days	10/16/2013	11/12/2013
Submit Rpt to ASA (CW)	HQ	14 days	11/13/2013	12/2/2013
ASA (CW) Approval of Rpt, Letter to OMB	ASA	80 days	12/3/2013	3/24/2014
ASA(CW) Transmittal to Congress	ASA	130 days	3/25/2014	9/22/2014
WRDA Authorization		0 days	9/22/2014	9/22/2014

### 13. REVIEW PLAN POINTS OF CONTACT

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

- Jacksonville District Project Manager may be contacted at, 904-232-1671

**ATTACHMENT 1: TEAM ROSTERS**

Team Rosters intentionally removed

**ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION 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<sup>sm</sup>.

SIGNATURE

Name  
ATR Team Leader  
Office Symbol/Company

\_\_\_\_\_  
Date

SIGNATURE

Name  
Project Manager  
Office Symbol

\_\_\_\_\_  
Date

SIGNATURE

Name  
Architect Engineer Project Manager<sup>1</sup>  
Company, location

\_\_\_\_\_  
Date

SIGNATURE

Name  
Review Management Office Representative  
Office Symbol

\_\_\_\_\_  
Date

**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  
Chief, Engineering Division  
Office Symbol

\_\_\_\_\_  
Date

*SIGNATURE*

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Name

Chief, Planning Division

Office Symbol

Date

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<sup>1</sup> Only needed if some portion of the ATR was contracted

**IATTACHMENT 3: ACRONYMS AND ABBREVIATIONS** (\*please note this is a generalized list of acronyms typically used in civil works projects; each acronym may or may not be used in this specific document)

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
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/MS	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