

# REVIEW PLAN

**Folly Beach Shore Protection Project  
Folly Beach, South Carolina  
(Integrated Limited Reevaluation Report and Environmental  
Assessment)**

**Charleston District**

**P2#: 113064**

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Last Revision Date: *None***



**US Army Corps  
of Engineers®**

# REVIEW PLAN

## Folly Beach Shore Protection Project, Folly Beach, S.C. Other Work Product Document Type (Limited Reevaluation Report)

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## 1. PURPOSE AND REQUIREMENTS

a. **Purpose.** This Review Plan defines the scope and level of peer review for the Folly Beach Shore Protection Project Integrated Limited Reevaluation Report (LRR) and Environmental Assessment (EA). The LRR and EA is an Other Work Product, and the review activities consist of District Quality Control (DQC) and ATR (Agency Technical Review). The project is in the Periodic Nourishment Phase. Upon approval, this review plan will be included into the Project Management Plan as an appendix to the Quality Management Plan.

### b. References

- (1) Engineering Circular (EC) 1165-2-214, Civil Works Review, 15 Dec 2012
- (2) Engineering Regulation (ER) 1110-1-12, Quality Management, 21 July 2006
- (3) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
- (4) District Quality Management Plan
- (5) CECW-SAD Memorandum, Subject: Martin County, Florida, draft Limited Reevaluation Report (LRR): Request for exclusion from Type I Independent External Peer Review (IEPR), 15 Feb 2011

c. **Requirements.** This Review Plan was developed in accordance with EC 1165-2-214, 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 applicable 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, some documents are subject to cost engineering review and certification (per EC 1165-2-214) 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. For documents determined to be Other Work Products, the home Major Subordinate Command (MSC) may be the RMO, or may choose to have the typical PCX or RMC serve as the RMO. The RMO for the peer review effort described in this Review Plan is the Coastal Storm Risk Management National Planning Center of Expertise (PCX-CSR).

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

### **3. PROJECT INFORMATION AND BACKGROUND**

#### **a. Document**

The decision document is the City of Folly Beach – Folly Beach Shore Protection Project (FBSPP), Integrated Limited Reevaluation Report (LRR) and Environmental Assessment. This Limited Reevaluation Report (LRR) is not considered to be a decision document for the purposes of determining independent review requirements. The LRR purpose is to locate a new source of sand and to verify the economic justification and environmental acceptability of the remaining periodic nourishments for the FBSPP project with the use of a new borrow area. The document is to be approved at the MSC (Division) level, and additional Congressional Authorization is not required.

#### **b. Project Description.**

Folly Beach is in Charleston County, South Carolina, about 12 miles south of Charleston, South Carolina on Folly Island. Folly Island is 6.1 miles in length, of which 5.34 miles are included in the Federal project. Folly Beach is continually subjected to the erosive forces of the Atlantic Ocean and is situated in a sand-starved environment. During the 1940's and 50's local residents constructed bulkheads and riprap revetments to curtail the erosive forces. The South Carolina Highway Department also constructed and maintained 41 timber and rock groins along the developed portion of the island's shoreline. Local interests, through their Congressional representatives, requested a study of their problem. Recognizing the economic importance of beaches, the Senate Committee on Public Works adopted a resolution on 15 June 1972, requesting the Secretary of Army direct the Chief of Engineers to conduct a study of Folly Beach and vicinity. A study was completed in August 1979, recommending a structural plan consisting of a 16,860 foot-long beach berm having a width of 25 feet at an elevation of 4 feet NGVD and a gradually sloping beach face to provide a combined recreational beach width of 61 feet at time of placement. The prospective beach would be maintained by periodic sand renourishment every five years. This plan was adopted by the passage of Section 501 of WRDA 1986.

In August 1987 a Section 111 report was prepared by Charleston District recognizing that the Charleston Harbor Jetties have contributed to the erosion occurring at Folly Island. This report determined that 57% of the erosion occurring at Folly Beach was attributable to the jetties. A reevaluation report subsequently prepared in August 1988 showed the recommended plan was still economically justified. Additionally, the report recommended that the authorized project be reformulated to provide a higher degree of storm damage protection and that consideration be given to extending project limits both upcoast and downcoast within the limits of incremental economic justification.

The 1991 General Design Memorandum (GDM) recommended that the project be lengthened from 16,860 linear feet to 28,200 linear feet (5.34 miles) and the protective berm be adjusted from 25 feet wide at elevation 4 feet NGVD to 15 feet wide at elevation 9.0 feet NGVD. The GDM further recommended that nine groins be rehabilitated and the renourishment cycle be changed from every 5 years to every 8

years with the final renourishment being for a 10-year period. This plan was approved with passage of the Energy and Water Development Appropriations Act of 1992 (Public Law 102- 104).

The project was constructed in 1993 at a cost of \$11.7 million. Approximately 2.8 million cubic yards of material was placed in the project area and nine wooden groins north of the Folly Beach Holiday Inn were rebuilt using steel sheet pile with concrete caps. The first renourishment of the project would have been 2001, based on the 8-year cycle. Since the project held up better than expected the first renourishment was scheduled for December 2005.

As a result of the 2004 hurricane season, Folly Beach was approved for PL 84-99 assistance for beach rehabilitation. The City of Folly Beach elected to request that the project be fully renourished in conjunction with the emergency rehabilitation. A dredging contract was awarded on 4 March 2005 in the amount of \$12,115,200 for placement of 2,338,000 cubic yards over 5.34 miles of shoreline. The borrow site utilized for this contract was Borrow Site A, located approximately 3 miles offshore of the eastern end of Folly Island. The contract was subsequently modified to extend the project an additional 670 feet to the east with an increase of 57,213 cubic yards. Project dredging commenced on 24 May 2005 and completed on 3 December 2005.

Construction of the nourishment project initiated in May of 2005 was approaching the halfway point when Hurricane Ophelia subjected Folly Beach to several days of high surf and wave action. Damages to the completed portion of the 2005 renourishment project resulted in a loss of approximately 470,000 cubic yards of material on the eastern 1.92 miles of the authorized project. The portion eligible for Flood Control and Coastal Emergency Act (P.L. 84-99) Rehabilitation Assistance was the amount of sand necessary to restore the project to pre-storm conditions. A Project Information Report (PIR) was prepared by Charleston District showing the benefit of the emergency placement exceeded the cost of emergency placement and that such construction should be completed before the start of the 2007 hurricane season. The PIR was approved on 18 October 2006. The P.L. 84-99 Cooperation Agreement between the Corps of Engineers and the City of Folly Beach was executed on 22 November 2006. Sand placement was performed by hydraulic cutter head dredge with pipeline running along the beach from 16 May – 28 June 2007, placing 486,100 cubic yards of material from Borrow Site B over a project length of approximately 1.92 miles.

In March of 2010, in order to determine the current condition of the beach and quantify the remaining storm damage reduction capabilities of the project, the District collected beach profiles along the length of the project. An analysis of these beach profile surveys collected confirmed the visual estimate that the Shore Protection Project at Folly Beach is in need of renourishment. The General Design Memorandum (GDM) and the Operations and Maintenance Manual (O&M) for the Folly Beach Shore Protection Project state that renourishment is required when 25% or more of the length of the project storm berm has reached a 15-foot width at elevation 9.0 ft NGVD. When compared to the authorized design template from the GDM, the 2010 profiles indicated

that 31% of the surveyed project area did not meet the specified elevation and width, triggering the need for renourishment. The LRR was approved and funds were provided in FY 13 to execute a design and a construction project to renourish the beach.

Sand placement was performed by hydraulic cutter head dredge with pipeline running along the beach from January – June 2014, placing 1.4M cubic yards of material from Borrow Sites A, B, C and D from the west end entrance of the County Park they renourished this portion of the beach in 2013 when they constructed a new terminal groin) to the east end of the project.

**SUMMARY:** Folly Beach Shore Protection Project was authorized by Section 501 of the Water Resources Development Act of 1986 (Public Law 99-662) and was modified by the Energy and Water Development Appropriations Act of 1992 (Public Law 102-104). The project goal is to provide beach compatible sand to Folly Beach in accordance with the project template. The project's current dimensions are 28,200 linear feet (5.34 miles) and a protective berm 15 feet wide at an elevation 8 feet NAVD 88. The cost of the project was \$30.7 million in 2013/14 and place 1.4 million cubic yards of sand on the beach. The project sponsor is the City of Folly Beach. The cost share is 85% Federal and 15% City of Folly Beach. The cost share was adjusted because the Charleston Harbor jetties were determined to be a major cause of the erosion on the beach. The periodic nourishment period is 8 years, and numerous storms have had an impact on the shore dimensions since 2007. The City of Folly Beach has a need to restore the beach to protect property and provide access to the citizens of South Carolina.

The FY 13 FBSPP that was completed in June 2014 depleted the remaining offshore borrow areas. In the event of a hurricane there is not a currently identified sand source that could be used to repair the project. The purpose of the proposed LRR is to evaluate potential sand sources for emergencies and future renourishments throughout the remaining period of Federal participation (2042) and to confirm economic justification and environmental acceptability.

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

This section discusses the factors affecting the risk informed decisions on the appropriate scope and level of review. The discussion is intended to 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. Factors affecting the risk informed decisions on the appropriate scope and level of review include the following:

- If the project has a cost estimate of more than \$200 Million.
  - The project has a cost estimate less than the \$200 Million threshold requiring Independent External Peer Review per the Water Resources and Reform Development Act of 2014.

- If parts of the study will likely be challenging.
  - This project has been successfully constructed, has undergone multiple renourishments, and has provided significant hurricane and storm damage reduction benefits to the City of Folly Beach and the Nation. Construction of the project remains the same as the authorized project with the exception of the proposed use of a new borrow area (to be evaluated in the LRR) due to depletion of borrow sources offshore of Folly Beach. The purpose of the LRR is to demonstrate that the project remains justified using the new borrow area(s) for remaining periodic nourishment
  
- Preliminary assessment of project risks and magnitude of those risks.
  - The only proposed project change is a new borrow area. Sand dredged from the borrow area would be required to be compatible with sand native to the project area in order to receive a state permit for renourishment. There is risk associated with costs associated with dredging and transportation of sand from proposed borrow areas due to potential distances from the project area. Fuel prices and other variables that fluctuate with transportation distance have the potential to affect costs. There are no changes to the construction template for the beach placement that would add risk to project performance.
  
- If the project will likely be justified by life safety or if the project likely involves significant threat to human life/safety assurance
  - The project will not be justified by life safety. The project modification proposed in the LRR, to use a new borrow area would not add, modify or adversely impact a structure which failure would create a significant threat to human life/safety assurance. Uncertainty due to factors such as climate change variability is limited due to the limited remaining period of Federal participation in the project.
  
- If there is a request by the Governor of an affected state for a peer review by independent experts
  - The Governor of South Carolina has not requested a peer review by independent experts.
  
- If the project/study is likely to involve significant public dispute as to the size, nature, or effects of the project
  - There is a possibility of environmental agency dispute due to the sources of sand that may have to be pursued from offshore of other beaches. We intend to work through a reasonable plan with all the stakeholders. The project has been implemented successfully in the past and the changes in scope to be documented will not change the size, nature or effect of the project.

- If the project/study is likely to involve significant public dispute as to the economic or environmental cost or benefit of the project
  - The project is not likely to involve significant dispute as to the economic or environmental cost or benefit. The project provides significant national and regional economic development benefits which are well documented. The project costs will likely increase due to the use of a new borrow area.
  
- 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
  - The information in the document or project design is not 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. The project will use the same design and construction techniques that have been used in the past on this project and similar projects throughout the region.
  
- If the project design is anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule
  - The proposed project design does not require any additional redundancy, resilience, or robustness. Beach fill projects for Hurricane and Storm Damage Reduction (now referred to as CSRМ) purposes such as this one are redundant in that periodic renourishments are included as part of the project plan when the beach requires sand to increase reliability. The project is resilient in that the beach naturally recovers to some extent after storms, and emergency nourishment may be implemented to restore projects should a natural disaster adversely impact the project. CSRМ projects such as this one are robust by adding sand to the natural system and reducing damages in a way that allows the naturally dynamic beach to adjust to the ever-changing coastal environment. The construction sequencing for this project is unique only in that there may be certain time periods when construction cannot take place during environmental windows when turtles or birds use the beach for nesting.

**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 anticipated in-kind contributions to be provided by the sponsor for the preparation of the subject LRR.

#### **4. DISTRICT QUALITY CONTROL (DQC)**



All 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. All DQC activities will be conducted in accordance with ER 1110-1-12 Engineering & Design Quality Management and EC 1165-2-214.

- a. **Documentation of DQC.** The DQC will be documented in Dr. Checks and the responses will be reviewed and approved by the DQC lead engineer.
- b. **Products to Undergo DQC.** The LRR and associated EA will undergo DQC.
- c. **Required DQC Expertise.** DQC reviews will be conducted by technically qualified personnel who did not perform the original work.

**5. AGENCY TECHNICAL REVIEW (ATR)**

ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.). For Other Work Products, a case specific risk-informed assessment, as described in paragraph 15 of EC 1165-2-214, is made to determine whether ATR is appropriate. 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 LRR/EA will undergo ATR. The Final LRR and EA will undergo an ATR consisting of back checks to previous comments received to ensure appropriate revisions have been made to the report. The cost estimate associated with the LRR will undergo ATR through the Cost DX.

- b. **Required ATR Team Expertise.**  
The ATR team will be made up of personnel determined by the PCX-CSR. The expertise represented on the ATR team should reflect the significant expertise involved in the work effort and will generally mirror the expertise on the PDT. Based on the factors affecting the scope and level of review outlined in Section 3 it is suggested that the review team include the disciplines listed in the below table.

ATR Team	Expertise
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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 will also serve as the plan formulation reviewer.
Plan Formulator	The plan formulator should be a senior water resources planner with experience in CSRМ projects and associated planning reports and documents.
Economics	The economics reviewer will be an expert in the field of economics and have a thorough understanding of CSRМ projects with periodic renourishment, BCR updates, and Section 902 analyses. The CSRМ PCX will provide an economist certified to conduct ATR.
Environmental Resources	The environmental reviewer will be an expert in the field of environmental resources and have a thorough understanding of NEPA, coastal ecosystems, and CSRМ projects.
Coastal Engineering	The coastal engineering reviewer will be an expert in the field of coastal engineering and have a thorough understanding of CSRМ projects, beach nourishment, and offshore borrow areas. The reviewer will have a minimum of seven years experience and be a Professional Engineer (P.E.).
Cost Engineering	The cost engineering reviewer will be an expert in the field of cost engineering and have a thorough understanding of CSRМ projects and dredging costs estimates. The cost engineer should be Walla Wall Cost DX approved cost reviewer as the cost estimate for this document is anticipated to need CSRМ and Cost DX review and Certification.

Real Estate	Real estate specialist with experience in dealing with beach front real estate issues and agreements with Bureau of Ocean Energy Management (BOEM). The reviewer should have a full working knowledge of EC 405-2-12, Real Estate Planning and Acquisition Responsibilities for Civil Works Projects, the portions of ER 405-2-12 that are currently applicable, and Public Law 91-646. The reviewer should be able to identify areas of the REP that are not in compliance with the guidance set forth in EC 405-2-12 and should make recommendation for bringing the report into compliance. All estates suggested for use should be termed sufficient to allow project construction, and the real estate cost estimate should be validated as being adequate to allow for real estate acquisition.
H&H	H&H specialist with experience in beach renourishment projects and regional sediment management of sand resources. The reviewer will have a minimum of seven years experience and be a Professional Engineer (P.E.).
Geotechnical Engineering	The geotechnical engineering reviewer will have experience with Coastal Storm Risk Management (CSRM) projects, sand source identification, will have a minimum of seven years experience, and be a Professional Engineer (P.E.).

**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 be 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, ATR team members 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 draft report, and final report. A sample Statement of Technical Review is included in Attachment 2.

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

IEPR may be required for Other Work Product 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 1165-2-214, 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 Other Work Product 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 1165-2-214.
- 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.**

The Charleston District concludes that the changes to the authorized project recommended by the Folly Beach Shore Protection Project, LRR are so limited in scope and impact that the project would not significantly benefit from an independent external peer review. Per reference 1.b.(6), an LRR does not trigger the need for an IEPR unless “verification of the project economics or the NEPA update ultimately result in the need to reformulate the project such that a modification of the authority is required. If the LRR determines additional project authorization is required then, a risk-informed decision regarding the conduct of the IEPR or the possibility of exclusion from IEPR would then need to be evaluated.” Therefore, per guidance in EC 1165-2-214, this LRR is considered an “Other Work Product,” Type I IEPR is not required for this project at this time, and the conduct of IEPR or possibility of an exclusion will be evaluated at a later time if a need to reformulate the project is

identified such that a modification of the authority is required. On a risk-informed basis, Type II IEPR is not currently contemplated. However, the decision as to whether or not to perform Type II IEPR will be revisited in a follow-on implementation phase review plan.

1. The project does not pose a significant threat to human life. The purpose is to protect infrastructure and property.
2. Total project cost will be less than \$200M.
3. State Governor has not made a request for an IEPR.
4. Federal nor state agency head has not made a request for an IEPR.
5. There is not significant public dispute as to the size, nature or effects of the project.
6. There is not a significant public dispute as to the economic cost of environmental cost or benefit of the project.
7. Novel methods will not be considered for this project.
8. No new plan formulation is anticipated in this LRR.

Per paragraph 11.d.(3) of EC 1165-2-214, when none of the above mandatory triggers are met, and one of three circumstances apply, Type I IEPR exclusion is appropriate. Per 11.d.(3)(b), this project is an activity for which there is ample experience within the USACE and industry to treat the activity as being routine, and has minimal life safety risk.

**b. Products to Undergo Type I and/or Type II IEPR. NOT APPLICABLE**

**c. Required Type I and/or Type II IEPR Panel Expertise. NOT APPLICABLE**

**d. Documentation of Type I and/or Type II IEPR. NOT APPLICABLE**

## **7. POLICY AND LEGAL COMPLIANCE REVIEW**

All Other Work Products 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.

## **8. COST ENGINEERING DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION**

The LRR/EA shall be coordinated with the Cost Engineering and ATR MCX, located in the Walla Walla District. The MCX will assist in determining the expertise needed on the ATR team and in the development of the review charge(s). The MCX will also provide

the Cost Engineering certification. The RMO is responsible for coordination with the Cost Engineering MCX.

## **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 and ATR.

EC 1105-2-412 does not cover engineering models used in planning. The process the Hydrology, Hydraulics and Coastal Community of Practice (HH&C CoP) of USACE follows to validate engineering software for use in planning studies and to satisfy the requirements of the Corps' Scientific and Engineering Technology (SET) initiative is provided in Enterprise Standard (ES)-08101 Software Validation for the Hydrology, Hydraulics and Coastal Community of Practice. 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.**

There are no planning models anticipated to be used for the development of the subject document. There are no significant changes to the authorized plan. Currently Beach-fx is the only certified model for determining damages and benefits for CSRMs projects. However, for this LRR there are no significant changes to the project design or function. The economic update will be a Level 1 Reaffirmation. The benefits used for the last authorizing document will be qualitatively verified as to key benefit assumptions, and used along with a new cost estimate to determine the remaining benefit to remaining cost ratio over the remaining period of Federal participation in the authorized project.

### **b. Engineering Models.**

There are no engineering models anticipated to be used in the development of the LRR and EA.

## **10. REVIEW SCHEDULES AND COSTS**

### **a. ATR Schedule and Cost.**

ATR will take place after Charleston District has completed the Draft LRR and Final LRR and Draft and Final EA, and the documents have undergone DQC. The ATR of the draft document, including cost certification, will cost

approximately \$30,000. The ATR of the final document will be a shorter review since it will be a back check to ensure that resolution of previous comments has been reflected in the document. The ATR of the final document will cost approximately \$10,000.

**b. Type I IEPR Schedule and Cost. NOT APPLICABLE**

**c. Model Certification/Approval Schedule and Cost.**

Not Applicable. No models are anticipated to need certification or approval for the development of this LRR & EA.

**d. Forecast Schedule**

TASK	DURATION	START	FINISH
Folly Beach LRR Schedule	755d?	Tue 8/5/14	Mon 8/28/17
Establish PDT	1d	Tue 10/7/14	Tue 10/7/14
Develop the Schedule and Budget	5d	Wed 10/8/14	Tue 10/14/14
Prepare/Review/Finalize the WO	45d	Wed 10/15/14	Tue 12/16/14
Receive Funds	1d	Wed 12/17/14	Wed 12/17/14
Review Plan	65d?	Tue 8/5/14	Mon 11/3/14
Review Plan Draft Prepared	7d	Tue 8/5/14	Wed 8/13/14
Review Plan Reviewed	10d	Thu 8/14/14	Wed 8/27/14
Incoporate Review Plan Comments	1d?	Thu 8/28/14	Thu 8/28/14
Review Plan Approved SAC	5d	Fri 8/29/14	Thu 9/4/14
Review Plan to SAD/PCX for Review and Approval	25d	Fri 9/5/14	Thu 10/9/14
Incoporate Review Plan Comments	5d	Fri 10/10/14	Thu 10/16/14
Review Plan Approved	10d	Fri 10/17/14	Thu 10/30/14
Review Plan Posted	2d	Fri 10/31/14	Mon 11/3/14
RSM Analysis	300d	Thu 12/18/14	Wed 2/10/16
RSM Analysis First Half	150d	Thu 12/18/14	Wed 7/15/15
RSM Analysis Second Half	150d	Thu 7/16/15	Wed 2/10/16
Initiate Draft LRR & EA Preparation	703d?	Thu 12/18/14	Mon 8/28/17
Geotech Appendix	180d	Thu 7/16/15	Wed 3/23/16
Coastal Engineering Appendix	181d	Thu 12/18/14	Thu 8/27/15
Economics Appendix	181d	Thu 12/18/14	Thu 8/27/15
Cost Appendix(Relies on Geotech)	100d	Thu 3/24/16	Wed 8/10/16
Environmental Appendix (Relies on Geotech)	90d	Thu 3/24/16	Wed 7/27/16
Establish DR Checks	1d	Thu 2/11/16	Thu 2/11/16
Draft LRR/EA ready for DQC	5d	Thu 7/28/16	Wed 8/3/16
DQC of Draft LRR/EA(Internal)	10d	Thu 8/4/16	Wed 8/17/16
Comments Incorporated or Addressed	10d?	Thu 8/18/16	Wed 8/31/16
Draft Complete(Internal)	1d?	Thu 9/1/16	Thu 9/1/16
ATR of Draft LRR/EA & CSRA/WW Cost Cert	60d	Fri 9/2/16	Thu 11/24/16
Incorporate ATR Comments	10d	Fri 11/25/16	Thu 12/8/16
Final Draft LRR/EA Preparation	93d?	Fri 12/9/16	Tue 4/18/17
Print & Mail Draft LRR/EA to SAD	2d	Fri 12/9/16	Mon 12/12/16
Submit Draft LRR/EA to SAD	1d?	Tue 12/13/16	Tue 12/13/16
SAD Review Draft LRR/EA	60d	Wed 12/14/16	Tue 3/7/17
Respond to SAD Comments	30d	Wed 3/8/17	Tue 4/18/17
Final LRR Preparation	44d	Wed 4/19/17	Mon 6/19/17
Final LRR/EA (Includes DQC)	14d	Wed 4/19/17	Mon 5/8/17
ATR of Final LRR/EA	11d	Tue 5/9/17	Tue 5/23/17



Incorporate Final ATR Comments	4d	Wed 5/24/17	Mon 5/29/17
Revise & Print Final LRR/EA with FONSI	4d	Tue 5/30/17	Fri 6/2/17
Route for Signatures & Submit Final LRR/EA to SAD	11d	Mon 6/5/17	Mon 6/19/17
Final LRR Report Approval at SAD incorporating signed FONSI	50d	Tue 6/20/17	Mon 8/28/17
EA Schedule	627d?	Tue 1/27/15	Wed 8/23/17
Initial Draft EA Preparation(significant portion of EA will rely on finalization of RSM analysis)	60d	Tue 1/27/15	Mon 4/20/15
"DRAFT EA: IN DEPTH PREP. (BEGIN 4 MONTHS PRIOR TO END OF RSM ANALYSIS, END 2 MONTHS AFTER NEPA SCOPING)"	125d	Tue 4/21/15	Mon 10/12/15
DQC of Draft LRR/EA(Internal)	1d?	Thu 8/4/16	Thu 8/4/16
Comments Incorporated or Addressed	1d?	Fri 8/5/16	Fri 8/5/16
NEPA scoping letter sent (cannot begin prior to end of RSM analysis)	1d	Thu 3/24/16	Thu 3/24/16
NEPA scoping(cannot begin prior to end of RSM analysis)	30d	Thu 3/24/16	Wed 5/4/16
Public Review of EA	60d	Wed 3/8/17	Tue 5/30/17
Incorporation of Public Comments	30d	Wed 5/31/17	Tue 7/11/17
Signature Routing	30d	Wed 7/12/17	Tue 8/22/17
FONSI Signed	1d	Wed 8/23/17	Wed 8/23/17

## 11. PUBLIC PARTICIPATION

The NEPA scoping period is scheduled for January 2016 through March 2016. There are not anticipated to be any significant changes to the scope of the authorized project which has been successfully implemented since 1992 that would warrant public input. However, public interest in potential sand sources located offshore of other beaches is anticipated. Once the findings have been coordinated, NEPA scoping will begin. The EA for the new proposed borrow area will be made available to the public in accordance with NEPA and the Coastal Zone Management program. The public review and comment period for the Draft EA will occur after ATR and SAD review.

## 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 effort 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 will be documented in Attachment 2. Significant changes to the Review Plan (such as changes to the scope and/or level of review) must be 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, will be posted on the Home District's webpage. The latest Review Plan will also be provided to the RMO and home MSC.

### **13. REVIEW PLAN POINTS OF CONTACT**

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

Charleston District Planning Technical Lead (843)329-8050

Charleston District Review Coordinator (843)329-8024

RMO, CSRM-PCX POC (347)370-4571

South Atlantic Division POC (404)562-5226

Charleston District Project Manager (843) 329-8142

**ATTACHMENT 1: TEAM ROSTERS**

<b>Name/Position</b>	<b>Phone Number</b>	<b>Role &amp; Responsibility</b>	<b>E-mail</b>
		PM	
		GIS	
		Planner	
		Environmental	
		Geotechnical Lead	
		Coastal Lead	
		Cost Estimator	
		Surveys	
		H&H/RSM	
		Navigation Team Lead	
		Real Estate	
		CCO	

## 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 1165-2-214. 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

Name

Chief, Planning Division

Office Symbol

Date

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

**ATTACHMENT 3: REVIEW PLAN REVISIONS**

<b>Revision Date</b>	<b>Description of Change</b>	<b>Page / Paragraph Number</b>

**ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS**

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
		NED	National Economic Development
		NER	National Ecosystem Restoration
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
CSR	Coastal Storm Risk Management	O&M	Operation and maintenance
BOEM	Bureau of Ocean Energy Management		
DQC	District Quality Control/Quality Assurance	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
		OEO	Outside Eligible Organization
EA	Environmental Assessment		
EC	Engineer Circular	PCX	Planning Center of Expertise
		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	QMP	Quality Management Plan
FRM	Flood Risk Management	QA	Quality Assurance
		QC	Quality Control
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
		SAR	Safety Assurance Review
LRR	Limited Reevaluation Report	USACE	U.S. Army Corps of Engineers
MSC	Major Subordinate Command	WRDA	Water Resources Development Act
MCX	Mandatory Center of Expertise	WRRDA	Water Resources and Reform Development Act