REVIEW PLAN

For

Savannah Harbor Expansion Project
Engineering Design Phase

A-E Design Products

Chatham County, Georgia and
Jasper County, South Carolina

Savannah District

24 August 2012

THE INFORMATION CONTAINED IN THIS REVIEW PLAN IS DISTRIBUTED SOLELY FOR THE PURPOSE OF PREDISSEMINATION PEER REVIEW UNDER APPLICABLE INFORMATION QUALITY GUIDELINES. IT HAS NOT BEEN FORMALLY DISSEMINATED BY THE U.S. ARMY CORPS OF ENGINEERS, SAVANNAH DISTRICT. IT DOES NOT REPRESENT AND SHOULD NOT BE CONSTRUED TO REPRESENT ANY AGENCY DETERMINATION OR POLICY.

US Army Corps of Engineers ®

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1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of review activities for the Savannah Harbor Expansion Project, Savannah Harbor, Chatham County, Georgia and Jasper County, South Carolina. The project is in the Pre-Construction, Engineering, and Design (PED) Phase. This review plan relates specifically to project designs that will be done by A-E contracts under the supervision of the Savannah District. The related documents are Implementation Documents that consist of Plans and Specifications (P&S) and Design Documentation Reports (DDRs). Upon approval, this review plan will be included in the Project Management Plan as an appendix to the Quality Management Plan. The Review Management Organization (RMO) is the South Atlantic Division (SAD).

b. References.

(1) ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999.
(2) ER 1110-1-12, Engineering and Design Quality Management, 21 Jul 2006
(3) EC 1165-2-209, Civil Works Review Policy, 31 Jan 2010, with Change 1
(4) ER-415-1-11, Biddability, Constructibility, Operability, and Environmental Review, 1 Sep 1994.
(5) Project Management Plan, Savannah Harbor Expansion Project, 113006, to be updated Summer 2012.

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 provides the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision, implementation, and operations and maintenance documents and work products. The EC outlines three levels of review: District Quality Control, Agency Technical Review, and Independent External Peer Review.

(1) District Quality Control/Quality Assurance (DQC). DQC is an internal review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). It is managed in the home district and may be conducted by staff in the home district as long as they are not doing the work involved in the project/study, or overseeing contracted work that is being reviewed. Basic quality control tools include a Quality Management Plan providing for seamless review, quality checks and reviews, supervisory reviews, Project Delivery Team (PDT) reviews, etc. ER 1110-1-12 as well as the District quality management plan addresses the conduct and documentation of this fundamental level of review.

(2) Agency Technical Review (ATR). ATR is an in-depth review, managed within USACE, and conducted by a qualified team outside of the home district that is not involved in the day-to-day production of the project/product. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR team reviews the various work products and assures that all the parts fit together in a coherent whole. ATR teams will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), etc.), and may be supplemented by outside experts as appropriate. To assure independence, the leader of the ATR team shall be from outside the parent MSC.

(3) 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.

e. Review Management Organization (RMO). The South Atlantic Division (SAD) is designated as the RMO responsible for managing any non-DQC review activities.

2. PROJECT INFORMATION AND BACKGROUND

a. Project Background. Savannah Harbor is a deep-draft navigation channel located along the Savannah River on the northern coast of Georgia / southern coast of South Carolina in Chatham and Jasper Counties, respectively. The state boundary between Georgia and South Carolina runs along the Savannah River. The Georgia Ports Authority (GPA) conducted a feasibility study of potential navigation improvements at Savannah Harbor, Georgia under the authority granted by Section 203 of Water Resources Development Act (WRDA) of 1986 (P.L. 99-662). The US Army Corps of Engineers (the Corps) adopted these documents prepared by the GPA and published a Draft Tier I EIS in May 1998 and the Final Tier I EIS in September 1998. In the Water Resources Development Act of 1999 (Section 101(b)(9)), the US Congress conditionally authorized deepening the Savannah Harbor navigation channel to a maximum depth of -48 feet Mean Low Water (MLW). The conditional authorization stipulated that approval of additional studies and the project is required from the Administrator of the Environmental Protection Agency, the Secretary of Commerce, the Secretary of Interior, and the Secretary of the Army.

The Corps completed the Tier I EIS process when it signed a Record of Decision (ROD) in December 1999. The ROD included additional requirements, including additional review by the Corps of Engineers and approval of the Chief of Engineers to ensure that construction of the project would comply with all applicable laws and policies.

The Savannah District of the Corps in conjunction with the USACE Deep-Draft Navigation Planning Center of Expertise developed a General Re-evaluation Report (GRR) to fulfill the conditions of the conditional authorization granted in 1999 and to conduct investigations required by the National Environmental Policy Act of 1969 (NEPA). This GRR and EIS provide documentation of the technical and plan formulation analyses conducted in the development of a recommended plan for navigation improvement at Savannah Harbor and associated environmental mitigation. The GRR and EIS assess mitigation plans for alternative channel depths. The EIS includes a final mitigation plan and an incremental analysis of alternative channel depths from -42 to -48 feet MLW, as required by the conditional authorization. The project sponsor is the Georgia Department of Transportation.

This study identifies and selects the National Economic Development (NED) plan, the plan that has the greatest net economic benefits consistent with protection of the Nation's environment.

b. Project Description – The Selected Plan is the NED Plan, which includes navigation improvements to the existing channel and mitigation that extends into the upper harbor beyond the extent of the navigation improvements. The NED plan is identified as the -47-foot plan.

The navigation components of the NED Plan consist of the:

- -47-foot deepening alternative, which includes channel bend wideners, and expansion of the Kings Island Turning Basin;
- Deepening of the entrance channel to -47 feet from Stations 0+000 to Station -14+000 and to -49 feet from Station -14+000 to Station -60+000 and extending the entrance channel from Station -60+000 to -97+680;
- Long Island Meeting Area at -47 feet; and
- Oglethorpe Meeting Area at -47 feet.

The FY 2012 total project investment cost which consists of the first cost plus interest during construction is $709,000,000 for the Selected Plan. The Selected Plan FY 2012 annual average equivalent cost (including annual maintenance) is $39,000,000. The average annual equivalent benefits for the Selected Plan are $213,000,000, which result in average annual equivalent net benefits of $174,000,000 and a benefit-to-cost ratio of 5.5.

The Selected Plan would result in marsh conversion and brackish marsh loss. Impacts to fisheries would include some loss of habitat for Striped bass and Shortnose sturgeon. The Project would increase chloride concentrations in Abercorn Creek at the water intake for the City of Savannah's water treatment plant during droughts and at industrial intakes on the Savannah River.

The natural resource mitigation plan consists of the following components:

- Constructing and operating flow re-routing features in and near the Savannah National Wildlife Refuge to reduce salinity impacts to tidal freshwater and brackish wetlands and fishery habitat;
- Acquiring bottomland hardwoods/freshwater wetlands to compensate for salinity increases to tidal freshwater wetlands. The acquired lands would become part of the Savannah National Wildlife Refuge and be managed by the USFWS;
- Marsh restoration in Disposal Area 1S to compensate for loss of 15.68 acres of brackish marsh that would be lost due to excavation requirements of the project;
- Constructing and operating an oxygen injection system to remove the incremental effects of the harbor deepening project;
- Constructing and operating a fish bypass channel at the New Savannah Bluff Lock and Dam to compensate for impacts to Shortnose sturgeon habitat;
- Funding a Striped bass stocking program to compensate for adverse impacts to Striped bass spawning and nursery habitats within the estuary;
- Constructing a raw water impoundment to supply the City of Savannah water treatment plant with water during periods of high chloride concentrations;
- Implementing adaptive management features if post-construction monitoring shows them to be needed. Those features include removing the Tide Gate sill, enlarging the diversion structure at the mouth of McCoys Cut, a diversion structure at the junction of Middle and Back Rivers, and acquisition of additional freshwater wetlands if required. Implementation of any or all of these features may not be needed, but the project would include funding sufficient to implement all of them. Which of these features would be implemented would depend on the findings of the monitoring.

Other features of the mitigation plan include:

- Recovery and preservation of the remains of the CSS *Georgia*; and
- Construction of a public boat ramp on Hutchinson Island.

This review plan covers designs done for the Savannah District by A/E Contractors. These designs include:

- The Dissolved Oxygen Injection System
- The Raw Water Impoundment
- The McCoys Cut Diversion Structure
- The Fish Passage

3. DISTRICT QUALITY CONTROL/QUALITYASSURANCE (DQC)

In accordance with the A-E design contracts the Contractors will be responsible for preparing and implementing a Quality Control Plan for all design products. The A-E prepared implementation documents, including the Detailed Design Reports and Project Design Plans and Specifications are classified as Products Prepared by Others. The A-E will perform Technical Review (TR) and Quality Control for all work products in accordance with ER 1110-1-12. The A-E Contractors will be responsible for providing a signed Statement of Technical Review with all submittals.

District Quality Assurance activities for implementation documents (DDRs and P&S) are stipulated in ER 1110-1-12, Engineering & Design Quality Management. The design of all design products will be in accordance with Savannah District procedures and in addition to the TR and Quality Control review discussed above will undergo DQC. DQC will be verified by the Agency Technical Review Team.

4. AGENCY TECHNICAL REVIEW

a. Scope. Agency Technical Review (ATR) is undertaken to "ensure the quality and credibility of the government's scientific information" in accordance with EC 1165-2-209 and ER 1110-1-12. An ATR will be performed on the P&S and DDR pre-final submittal.

ATR will be conducted by individuals and organizations that are external to the Savannah District. The ATR Team Leader is a Corps of Engineers employee outside the South Atlantic Division. The required disciplines and experience are described below.

ATR comments are documented in the DrChecks^{sm} model review documentation database. DrChecks^{sm} is a module in the ProjNet^{sm} suite of tools developed and operated at ERDC-CERL (www.projnet.org).

At the conclusion or 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 organization affiliations, and include a short paragraph on both the credentials and relevant expertise of each reviewer;
- Include the charge to the reviewer;
- Describe the nature of their review and their findings and conclusions;

- Identify and summarize each unresolved issues (if any); and
- Include a verbatim copy of each reviewers comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

b. ATR Disciplines. As stipulated in ER 1110-1-12, ATR members will be sought from the following sources: regional technical specialists (RTS); appointed subject matter experts (SME) from other districts; senior level experts from other districts; Center of Expertise staff; experts from other USACE commands; contractors; academic or other technical experts; or a combination of the above. The ATR Team will be comprised of the following disciplines; knowledge, skills, and abilities; and experience levels.

ATR Team Leader. The ATR Team Leader shall be a registered professional with experience in Navigation projects and have previous experience as an ATR Team Leader. The team leader may be a co-duty to one of the review disciplines.

Geotechnical Engineering. The team member shall be a registered professional. Experience needs to encompass geotechnical analyses that are used to support the development of Plans and Specifications for navigation projects including navigation projects, coastal structures and dike embankments. Knowledge of coastal design, disposal area design and dredging operations is required. A minimum of 10 years of relative experience is required.

Structural Engineering. The team member shall be a registered professional engineer. Experience needs to encompass structural analyses that are used to support development of plans and specifications for projects including stone construction, HDPE, sheet or timber piling, and structural steel design. A minimum of 10 years of relative experience is required.

Civil Engineering. The team member shall be a registered professional engineer with civil/site work project experience that includes embankments and coastal structures. A minimum of 10 years relative experience is required.

Hydraulic Engineering. The team member shall be a registered professional engineer with hydraulic design and modeling project experience associated with civil works project design. A minimum of 10 years relative experience is required.

Mechanical Engineering. The team member shall be a registered professional engineer with mechanical engineering work project experience that includes pumps and control systems. A minimum of 10 years relative experience is required.

Structural Engineering. The team member shall be a registered professional engineer. Experience needs to encompass structural analyses that are used to support development of plans and specifications for projects including stone construction, HDPE, sheet or timber piling, and structural steel design. A minimum of 10 years of relative experience is required.

Electrical Engineering. The team member should be a registered professional engineer with electrical engineering work project experience that includes electrical distribution systems and control systems. A minimum of 10 years relative experience is required.

Cost Engineering. The team member should have demonstrated experience in the preparation of cost estimates, cost risk analyses and cost engineering. The cost engineering review will be on the PED Phase

current working estimate. The cost engineering review will be conducted as part of the ATR for the P&S final submittal. A minimum of 10 years relative experience is required.

Environmental Compliance Specialist. The team member should be a senior biologist with experience in compliance with environmental laws (NEPA, Clean Water Act, Endangered Species Act, National Historic Preservation Act, etc) including coastal environmental projects. A minimum of 10 years of relative experience is required.

Required Disciplines will vary by project. ATR team requirements are as follows:

	ATR Team Lead	Geotechnical Engineer	Structural Engineer	Civil/Site Engineer	Hydraulic Engineer	Mechanical Engineer	Electrical Engineer	Cost Engineer	Environmental Compliance Specialist
Dissolved Oxygen Injection System	x	x	x	x	x	x	x	x	x
Raw Water Storage Impoundment	x	x	x	x	x	x	x	x	x
McCoys Cut Diversion Structure	x	x	x	x	x			x	x
Fish Passage	x	x	x	x	x	x	x	x	x

5. INDEPENDENT EXTERNAL PEER REVIEW

a. General. EC 1165-2-209 provides implementation guidance for both Sections 2034 and 2035 of the Water Resources Development Act (WRDA) of 2007 (Public Law (P.L.) 110-114). The EC addresses review procedures for both the Planning and the Design and Construction Phases (also referred to in USACE guidance as the Feasibility and the Pre-construction, Engineering and Design Phases).

b. Type I Independent External Peer Review (IEPR) Determination (Section 2034). A Type I IEPR is associated with decision documents. No decision documents will be addressed by this review plan. Additionally, the documents addressed by this review plan do not contain technical, scientific or engineering information that is relied upon to support recommendations. These products will not significantly benefit from a Type I IEPR. A Type I IEPR is not needed/recommended.

c. Type II Independent External Peer Review (IEPR) Determination (Section 2035). This project does not trigger WRDA 2007 Section 2035 factors for Safety Assurance Review (termed Type II IEPR in EC 1165-2-209) and therefore, a Type II IEPR review is not required/recommended. If the project scope is changed, this determination will be reevaluated. The factors in determining whether a review of design and construction activities of a project is necessary as stated under Section 2035 along with this review plans applicability statement follow.

(1) The failure of the project would pose a significant threat to human life.

This project consists of channel dredging, disposal area construction away from any populated areas, construction of mitigation features and construction of coastal structures away from any populated areas. Failure of these features will not pose a significant threat to human life.

(2) The project involves the use of innovative materials or techniques.

This project uses methods and procedures used by the Corps of Engineers on other similar works. Innovative materials and techniques will not be used.

(3) The project design lacks redundancy.

The design is in accordance with applicable USACE Engineer Manuals. Redundancy, resiliency or robustness is not required for this design.

(4) The project has a unique construction sequencing or a reduced or overlapping design construction schedule.

This project's construction sequence and schedule have been used successfully by the Corps of Engineers on other similar projects. There is no unique construction sequencing or reduced or overlapping design construction schedule.

6. BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, AND ENVIRONMENTAL REVIEW

Biddability, Constructability, Operability, and Environmental (BCOE) Review is conducted to ensure that the project can be built with ease; contract documents can be understood, bid administered and executed; project can be operated and maintained with ease and will protect air, water, land, animals, plants and other natural resources from the effects of the construction and operation of the project. The BCOE will be conducted and certified within the Savannah District Office in accordance with ER-415-1-11. This certification will also include the PM's certification of completion of required Value Engineering activities in accordance with ER 11-1-321, Change 1.

7. CUSTOMER REVIEW

The customer (Project Sponsor) review will be conducted to ensure the customer's expectations as agreed upon for the project are met. The customer review will take place concurrently with the ATR. The customer will provide all comments in Dr. Checks during the ATR review period. All customer comments will be addressed as part of the ATR review and included in the final ATR review report.

8. MODEL CERTIFICATION AND APPROVAL

All software used to develop project designs will comply with the USACE Enterprise Standard (ES)-08101 *Software Validation for the Hydrology, Hydraulics and Coastal Community of Practice.*

9. BUDGET AND SCHEDULE

a. Project Milestones. The following milestones are identified for planning purposes only and subject to change based on funding constraints and project decision documents

Design Project	DQC Complete	ATR Complete	BCOE Complete	Advertisement	Contract Award

Dissolved Oxygen System	Q1 FY13	Q1 FY13	Q2 FY13	Q3 FY13	Q4 FY13
Raw Water Storage Impoundment	Q1 FY13	Q1 FY13	Q2 FY13	Q3 FY13	Q4 FY13
McCoys Cut Diversion Structure	Q3 FY13	Q3 FY13	Q4 FY13	Q3FY14	Q4 FY14
Fish Passage	Q3 FY13	Q3 FY13	Q4 FY13	Q3FY14	Q4 FY14

b. ATR Estimated Cost. The ATR will be conducted in accordance with this schedule. Each reviewer will be provided funds based on level of effort for each discipline. It is anticipated that each reviewer will receive 40 hours for review and coordination of each design package. The estimated cost is $35,000 to $50,000 for each design package.

10. POINTS OF CONTACT

Their titles and responsibilities are listed below.

POCs:

Review Plan, ATR and QM Process: Carol Abercrombie
912-652-5514
Carol.h.abercrombie@usace.army.mil

Project Manager: Jason O'Kane
912-652-5276
Jason.D.Okane@usace.army.mil

South Atlantic Division: James Truelove
404-562-5121
James.C.Truelove@usace.army.mil

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Savannah Harbor Expansion Project
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b. References.

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This study identifies and selects the National Economic Development (NED) plan, the plan that has the greatest net economic benefits consistent with protection of the Nation's environment.

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The navigation components of the NED Plan consist of the:

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- Deepening of the entrance channel to -47 feet from Stations 0+000 to Station -14+000 and to -49 feet from Station -14+000 to Station -60+000 and extending the entrance channel from Station -60+000 to -97+680;
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- Constructing and operating an oxygen injection system to remove the incremental effects of the harbor deepening project;
- Constructing and operating a fish bypass channel at the New Savannah Bluff Lock and Dam to compensate for impacts to Shortnose sturgeon habitat;
- Funding a Striped bass stocking program to compensate for adverse impacts to Striped bass spawning and nursery habitats within the estuary;
- Constructing a raw water impoundment to supply the City of Savannah water treatment plant with water during periods of high chloride concentrations;
- Implementing adaptive management features if post-construction monitoring shows them to be needed. Those features include removing the Tide Gate sill, enlarging the diversion structure at the mouth of McCoys Cut, a diversion structure at the junction of Middle and Back Rivers, and acquisition of additional freshwater wetlands if required. Implementation of any or all of these features may not be needed, but the project would include funding sufficient to implement all of them. Which of these features would be implemented would depend on the findings of the monitoring.

Other features of the mitigation plan include:

- Recovery and preservation of the remains of the CSS *Georgia*; and
- Construction of a public boat ramp on Hutchinson Island.

Projects included in this review plan that will be designed within the Savannah District include:

- Disposal Areas 14 A/B Dike Raising
- Outer Harbor Dredging
- Inner Harbor Dredging
- Upper Estuary Dredging and Flow Rerouting
- Sediment Basin Modifications/Tide Gate Removal and Boat Ramp Construction
- Disposal Area 1S Environmental Restoration
- Final Dike Raising to Restore Disposal Area Capacity

3. DISTRICT QUALITY CONTROL

District Quality Control and Quality Assurance activities for implementation documents (DDRs and P&S) are stipulated in ER 1110-1-12, Engineering & Design Quality Management. The design of all in-house design products will be in accordance with Savannah District procedures and will undergo DQC. DQC will be verified by the Agency Technical Review Team.

4. AGENCY TECHNICAL REVIEW

a. Scope. Agency Technical Review (ATR) is undertaken to "ensure the quality and credibility of the government's scientific information" in accordance with EC 1165-2-209 and ER 1110-1-12. An ATR will be performed on the P&S and DDR pre-final submittal.

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- Identify and summarize each unresolved issues (if any); and
- Include a verbatim copy of each reviewers comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

b. ATR Disciplines. As stipulated in ER 1110-1-12, ATR members will be sought from the following sources: regional technical specialists (RTS); appointed subject matter experts (SME) from other districts; senior level experts from other districts; Center of Expertise staff; experts from other USACE commands; contractors; academic or other technical experts; or a combination of the above. The ATR Team will be comprised of the following disciplines; knowledge, skills, and abilities; and experience levels.

ATR Team Leader. The ATR Team Leader shall be a registered professional with experience in Navigation projects and have previous experience as an ATR Team Leader. The team leader may be a co-duty to one of the review disciplines.

Geotechnical Engineering. The team member shall be a registered professional. Experience needs to encompass geotechnical analyses that are used to support the development of Plans and Specifications for navigation projects including navigation projects, coastal structures and dike embankments. Knowledge of coastal design, disposal area design and dredging operations is required. A minimum of 10 years of relative experience is required.

Structural Engineering. The team member shall be a registered professional engineer. Experience needs to encompass structural analyses that are used to support development of plans and specifications for projects including stone construction, HDPE, sheet or timber piling, and structural steel design. A minimum of 10 years of relative experience is required.

Civil Engineering. The team member shall be a registered professional engineer with civil/site work project experience that includes dredging and disposal operations, embankments, channels, and coastal structures. A minimum of 10 years relative experience is required.

Hydraulic Engineering. The team member shall be a registered professional engineer with hydraulic engineering work project experience that includes dredging and disposal operations, channels, and environmental restoration projects. A minimum of 10 years relative experience is required.

Cost Engineering. The team member should have demonstrated experience in the preparation of cost estimates, cost risk analyses, and cost engineering. Experience is needed for dredging projects to include navigation, disposal area design, and coastal structures. The cost engineering review will be on the PED Phase current working estimate. The cost engineering review will be conducted as part of the ATR for the P&S final submittal. A minimum of 10 years relative experience is required.

Environmental Compliance Specialist. The team member should be a senior biologist with experience in compliance with environmental laws (NEPA, Clean Water Act, Endangered Species Act, National Historic Preservation Act, etc) including coastal environmental projects. A minimum of 10 years of relative experience is required.

Required Disciplines will vary by project. ATR team requirements are as follows:

	ATR Team Leader	Geotechnical Engineer	Structural Engineer	Civil/Site Engineer	Hydraulic Engineer	Cost Engineer	Environmental Compliance Specialist
Disposal Areas 14A/B Dike Raising	x	x	x	x		x	x
Outer Harbor Deepening	x			x		x	x
Inner Harbor Deepening	x			x		x	x
Upper Estuary Dredging and Flow Rerouting	x	x	x	x	x	x	x
Sediment Basin/Tide Gate/Boat Ramp	x	x	x	x		x	x
1S Restoration	x	x		x	x	x	x
Final Dike Raising to Restore Capacity	x	x	x	x		x	x

5. INDEPENDENT EXTERNAL PEER REVIEW

a. General. EC 1165-2-209 provides implementation guidance for both Sections 2034 and 2035 of the Water Resources Development Act (WRDA) of 2007 (Public Law (P.L.) 110-114). The EC addresses review procedures for both the Planning and the Design and Construction Phases (also referred to in USACE guidance as the Feasibility and the Pre-construction, Engineering and Design Phases).

b. Type I Independent External Peer Review (IEPR) Determination (Section 2034). A Type I IEPR is associated with decision documents. No decision documents will be addressed by this review plan. Additionally, the documents addressed by this review plan do not contain technical, scientific or engineering information that is relied upon to support recommendations. These products will not significantly benefit from a Type I IEPR. A Type I IEPR is not needed/recommended.

c. Type II Independent External Peer Review (IEPR) Determination (Section 2035). This project does not trigger WRDA 2007 Section 2035 factors for Safety Assurance Review (termed Type II IEPR in EC 1165-2-209) and therefore, a Type II IEPR review is not required/recommended. If the project scope is changed, this determination will be reevaluated. The factors in determining whether a review of design and construction activities of a project is necessary as stated under Section 2035 along with this review plans applicability statement follow.

(1) The failure of the project would pose a significant threat to human life.

This project consists of channel dredging, disposal area construction away from any populated areas, construction of mitigation features and construction of coastal structures away from any populated areas. Failure of these features will not pose a significant threat to human life.

(2) The project involves the use of innovative materials or techniques.

This project uses methods and procedures used by the Corps of Engineers on other similar works. Innovative materials and techniques will not be used.

(3) The project design lacks redundancy.

The design is in accordance with applicable USACE Engineer Manuals. Redundancy, resiliency or robustness is not required for this design.

(4) The project has a unique construction sequencing or a reduced or overlapping design construction schedule.

This project's construction sequence and schedule have been used successfully by the Corps of Engineers on other similar projects. There is no unique construction sequencing or reduced or overlapping design construction schedule.

6. BIDDABILITY, CONSTRUCTABILITY, OPERABILITY, AND ENVIRONMENTAL REVIEW

Biddability, Constructability, Operability, and Environmental (BCOE) Review is conducted to ensure that the project can be built with ease; contract documents can be understood, bid administered and executed; project can be operated and maintained with ease and will protect air, water, land, animals, plants and other natural resources from the effects of the construction and operation of the project. The BCOE will be conducted and certified within the Savannah District Office in accordance with ER-415-1-11. This certification will also include the PM's certification of completion of required Value Engineering activities in accordance with ER 11-1-321, Change 1.

7. CUSTOMER REVIEW

The customer (Project Sponsor) review will be conducted to ensure the customer's expectations as agreed upon for the project are met. The customer review will take place concurrently with the ATR . The customer will provide all comments in Dr. Checks during the ATR review period. All customer comments will be addressed as part of the ATR review and included in the final ATR review report.

8. MODEL CERTIFICATION AND APPROVAL

All software used to develop project designs will comply with the USACE Enterprise Standard (ES)-08101 *Software Validation for the Hydrology, Hydraulics and Coastal Community of Practice.*

9. BUDGET AND SCHEDULE

a. Project Milestones. The following milestones are identified for planning purposes only and subject to change based on funding constraints and project decision documents

Design Project	DQC Complete	ATR Complete	BCOE Complete	Advertisement	Contract Award
14A/B Dike Raising	Q4 FY12	Q4 FY12	Q1 FY13	Q2 FY13	Q2 FY13
Outer Harbor Deepening	Q4 FY12	Q4 FY12	Q2 FY13	Q3 FY13	Q4 FY13
Inner Harbor Deepening	Q4 FY12	Q4 FY12	Q2 FY13	Q3 FY13	Q4 FY13
Upper Estuary Dredging and Flow Rerouting	Q1 FY14	Q1 FY14	Q2 FY14	Q3 FY14	Q4 FY14
Sediment Basin/Tide Gate/Boat Ramp	Q1 FY14	Q1 FY14	Q2 FY14	Q3 FY14	Q4 FY14
1S Restoration	Q4 FY14	Q4 FY14	Q2 FY15	Q2 FY 15	Q3 FY15
Final Dike Raising to	Q2 FY 16	Q2 FY16	Q3 FY16	Q4 FY16	Q4 FY16

Restore Capacity					

b. ATR Estimated Cost. The ATR will be conducted in accordance with this schedule. Each reviewer will be provided funds based on level of effort for each discipline. It is anticipated that each reviewer will receive 40 hours for review and coordination of each design package. The estimated cost is $35,000 to $50,000 for each design package.

10. POINTS OF CONTACT

Their titles and responsibilities are listed below.

POCs:

Review Plan, ATR and QM Process:	Carol Abercrombie 912-652-5514 Carol.h.abercrombie@usace.army.mil
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