

# REVIEW PLAN

For

## **Savannah Harbor DMCA 12A Dike Raising**

Jasper County, South Carolina

Savannah District

November 25, 2011

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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 DMCA 12A Dike Improvements Project, Savannah Harbor, Jasper County, South Carolina. Savannah Harbor DMCA 12A is a major disposal area for placing dredged material resulting from maintenance and potential expansion dredging of the Savannah Harbor. Improvements needed include raising the dike around the perimeter of the containment area and repairing weirs.

### **b. References.**

- (1). ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999.
- (2). ER 1110-2-12, Engineering and Design Quality Management, 21 Jul 2006
- (3). EC 1165-2-209, Civil Works Review Policy, 31 Jan 2010

**c. Requirements.** This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and Operation, Maintenance, Repair, Replacement and Rehabilitation (OMRR&R). The EC 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 (DQC). DQC is the 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 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. Additionally, the PDT is responsible for a complete reading of the report to assure the overall integrity of the report, technical appendices and the recommendations before approval by the District Commander. The Major Subordinate Command (MSC)/District quality management plans address 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.

**d. 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 located at Savannah on the northern coast of Georgia / southern coast of South Carolina in Chatham and Jasper Counties, respectively. The Savannah River is the line of demarcation separating Georgia from South Carolina. Savannah Harbor Dredge Material Containment Area (DMCA) 12A, located along the north-east edge of the Savannah River Back River

across from Hutchinson Island, lies in Jasper County, South Carolina. The area is one of nine confined dredge material containment areas used for dredging the Savannah River channel. DMCA 12A is roughly 1,000 to 1,100 acres in size and parallels the Savannah River from the U.S. Highway 17 river crossing opposite the City of Savannah to the east/southeast a distance of approximately 1.8 miles. The area is owned the by Georgia Department of Transportation. Dikes have been constructed around the entire perimeter of this area for confined storage of dredging materials. Although the area has not always had dikes, it has received dredged materials from the Savannah River throughout the 1900's. Five weirs presently located in the western portion of DMCA 12A are used to drain water from the disposal area. Four of the weirs are spaced along the western dike and the fifth is located adjacent to the Savannah River in the southwest corner of the area. The dikes are periodically raised as needed to increase capacity for dredge spoils. A normal dike raising is considered to be six feet along the entire perimeter; however, availability of funds usually dictates the project scope.

**b. Project Description – Savannah Harbor DMCA 12A.** The Savannah Harbor DMCA 12A Dike Improvements Project consists of raising Savannah Harbor DMCA 12A dikes and ramps approximately five to six feet in elevation around the entire perimeter in order to increase DMCA capacity. The five weirs presently located along the western side of the containment area will require modifications and repairs to ensure proper functioning. It is possible that one or more of the weirs may need to be relocated. A bird island at least four acres in size will also be required in the containment area as a sanctuary and nesting area for migratory water fowl. The preferred location of the bird island is in the southwestern portion of the containment area near the weir locations because it must be continuously surrounded by standing water. Since the bird island must be at least 300 to 400 feet from the perimeter dikes, temporary access to the island for mobilization of maintenance equipment will be periodically required. To provide the proper conditions for nesting, sandy soils either from or having an equivalent gradation to the sandy materials presently being stored in DMCA 14B will be required as a cap across the surface of the bird island.

### 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 the Savannah Harbor DMCA 12A Dike Improvements Project was prepared by the Savannah District using SAS procedures and will undergo DQC. DQC Certification 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 intermediate and pre-final submittals.

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<sup>sm</sup> model review documentation database. DrChecks<sup>sm</sup> is a module in the ProjNet<sup>sm</sup> suite of tools developed and operated at ERDC-CERL ([www.projnet.org](http://www.projnet.org)).

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 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 / Geotechnical Engineering. The team leader should 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 dike embankments. Extensive knowledge of disposal area and dredging operations is also required. A minimum of 15 years of relative experience is required.

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

## 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. The results of the risk informed decision process performed by the District PDT indicates that the Savannah Harbor DMCA 12A Dike Improvements Project documents are not decision documents and Type I IEPR is not required/needed.

**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 review under Section 2035 is not required. 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 will include raising the dike around the perimeter of the Savannah Harbor DMCA 12A disposal area approximately five to six feet, performing repairs to or replacement of the existing weirs and construction of a four acre bird island. Failure or loss of the dike, weirs or bird island will not pose a significant threat to human life.*

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

*This project is routine and will utilize methods and procedures used by the Corps of Engineers on other similar works.*

- (3) The project design lacks redundancy.

*The design is in accordance with applicable USACE Engineer Manuals. The manuals do not address the concept of redundancy for dike design. The concept of redundancy is not applicable to this disposal area dike raising effort.*

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

*The Project is routine and does not have unique construction sequencing or a reduced or overlapping design construction schedule. The installation sequence and schedule have been used successfully by the Corps of Engineers on other similar works.*

## **6. MODEL CERTIFICATION AND APPROVAL**

This disposal area improvement project does not use any engineering models that have not been approved for use by USACE.

## **7. BUDGET AND SCHEDULE**

a. Project Milestones.

District Quality Control – 26 March 2012

ATR Review – 28 May 2012

BCOE Review – 11 June 2012

Advertisement – 27 June 2012

Contract Award – 22 August 2012

b. ATR Estimated Cost. The ATR will be conducted from 8 May 2012 through 28 May 2012. Each reviewer will be provided funds based on level of effort for each discipline. The estimated cost is \$6,000.

## **8. POINTS OF CONTACT**

Per guidance, the names of the following individuals will be posted on the Internet with the Review Plan. Their titles and responsibilities are listed below.

POCs:

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### **8.1 ATR Team Members**

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