

2 Prior Studies, Reports, and Existing Water Projects

This chapter describes studies and analyses concerning the Federal navigation project at Savannah Harbor, which have been conducted prior to this analysis. The information contained in these studies and analyses is used as background material to better understand existing and potential future conditions.

2.1 Savannah Harbor Deepening Feasibility Report, 1991

The Savannah District of the U.S. Army Corps of Engineers published the final interim feasibility study for navigation improvements to Savannah Harbor in 1991. The report recommended deepening the inner harbor and the entrance channel inside the bar (Stations 103+000 to -14+000B) from -38 feet MLLW to -42 feet MLLW, and deepening the entrance channel outside the bar (Stations -14+000B to -60+000B) from -40 feet MLLW to -44 feet MLLW. The recommended plan, which was the locally preferred plan at two feet deeper than the NED plan, was constructed in 1994. Dredged material from the entrance channel was placed at the existing ocean disposal area and at the beach on Tybee Island. Material from the inner harbor was placed at the existing Dredged Material Containment Areas. The channel improvements constructed in 1994 remain as the existing and without-project channel conditions assessed in this feasibility report.

2.2 Savannah Harbor Expansion Reconnaissance Report, 1996

The August 1996 report identified waterborne transportation inefficiencies, which could be remedied by modifying the Federal navigation channel. The analysis investigated traffic movements, operation, and capacity at Garden City Terminal. The analysis found that existing conditions and projected future conditions indicated that NED benefits could be accrued by deepening the channel. The reconnaissance level economic analysis resulted in positive net benefits for a -44 and a -45-foot channel. Environmental impacts were addressed through a mitigation plan. The Reconnaissance Report concluded with a recommendation that a feasibility study of navigation improvements of Savannah Harbor be conducted under the existing study authority.

2.3 Savannah Harbor Deepening Feasibility Report (Section 203) and Tier I EIS 1998

In 1998, the Georgia Ports Authority conducted a feasibility study of navigation improvements to Savannah Harbor under the authority of Section 203 of the Water Resources Development Act of 1986 (P.L. 99-662). The legislation authorizes non-Federal entities to conduct feasibility studies of harbor or inland harbor projects. The Section 203 feasibility study recommended the following navigation improvements, which are identified as the “48-foot alternative”:

- Deepening the existing entrance channel up to -50 feet MLLW from the ocean to Station -14B+000, up to -48 feet MLLW from Station -14B+000 to Station

0+000, and the inner harbor up to -48 feet MLLW from Station 0+000 to Station 103+000;

- Widening bends in the entrance channel at two locations and in the inner harbor channel at eight locations;
- Enlarging the Kings Island Turning Basin to a width of 1,600 feet;
- Raising dikes from 2.6 feet up to 5.5 feet in disposal areas 12A, 14B, and Jones/Oysterbed Island; and
- A mitigation plan which includes cultural resource mitigation, natural resource mitigation, and an impact avoidance plan.

The Tier I EIS assessed the potential impacts of the “maximum impact” project alternative, which is the “50-foot alternative” (two feet deeper than the recommended plan). Impacts to the following resources were assessed: wetlands; endangered species; fisheries; benthic communities; birds; marine mammals; water quality; historic properties; potable surface and groundwater. Major impacts to biological resources were evaluated using a hydrodynamic model that predicted changes to salinity and dissolved oxygen due to the 50-foot alternative. Detailed analysis of the impacts of the recommended plan was deferred to another EIS to be conducted during the Continuing Engineering and Design phase of the project. Development of the final mitigation plan would also be assessed in the Final EIS.

2.3.1 Chief’s Report on Savannah Harbor Deepening Feasibility Study (Section 203)

The Chief’s Report (signed by the Chief of Engineers, Department of the Army on 21 October 1999) recommended implementation of the authorized project, under recognition that Congress had authorized the project but that additional studies were still needed. The Congressional authorization is conditioned on (1) approval of the selected plan by the Secretary of the Interior, Secretary of Commerce, the Administrator of the Environmental Protection Agency, and the Secretary of the Army, and (2) their determination that the mitigation plan adequately addresses the environmental impacts of the project. The EIS must analyze the impacts of alternative depth alternatives, develop an acceptable mitigation plan, and conclusively determine the NED plan and cost sharing for mitigation features. The Chief’s Report states that the signing of a favorable Chief’s Report for this project does not allow the project to be constructed, but instead only authorizes further planning and design work for the project in order to achieve eventual compliance with all applicable environmental laws.

2.3.2 Record of Decision on Savannah Harbor Deepening Feasibility Study (Section 203)

The Record of Decision (ROD), which completes the National Environmental Policy Act compliance process for authorization of the project, was signed by the Deputy Commander for Civil Works on 22 December 1999. The ROD states that the conditional Congressional authorization provides sufficient safeguards so that the project would not be implemented until the Chief of Engineers determines that it is in accordance with all applicable US Army Corps of Engineers policies, procedures, and

regulations and that it includes an acceptable mitigation plan. The ROD recommends implementation of the authorized project after additional review by the Corps of Engineers and approval by the Chief of Engineers to ensure that construction of the project complies with all applicable laws and policies, and includes cost sharing for mitigation features determined to be appropriate by the Chief of Engineers.

2.4 Savannah Harbor Dredged Material Management Plan- 2011 Annual Work Plan

The existing DMMP for the Savannah Harbor Navigation Project is the Base Plan or Federal Standard. This plan is defined as "the dredged material disposal alternative or alternatives identified by the Corps which represent the least costly alternatives consistent with sound engineering practices and meeting the environmental standards established by the Section 404(b)(1) evaluation process (Clean Water Act of 1972) or ocean dumping criteria (Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended)." This standard establishes the benchmark for Corps involvement in future operation of the harbor and the baseline for cost sharing purposes. If requested, additional actions could be made a component of the harbor's normal management program, but those additional actions would need to be funded by an organization other than the Corps of Engineers.

The Base Plan consists of the combined use of multiple dredged material disposal plan alternatives, which were evaluated during the formulation of the DMMP. These alternative plans include rotational use of the DMCA's, underdrains, the ODMDS, etc. The Base Plan for maintenance of the inner harbor channel is to place the material into the existing DMCA's. The Base Plan for the entrance channel is to place the material into the Jones-Oysterbed Island DMCA, the ODMDS, or Sites 2 and 3.

The disposal location to be used for a specific dredging contract will be decided based on identification of the least cost, environmentally-acceptable option at that time. If disposal at a certain location is found to be more desirable for environmental or other reasons but would be more costly than one of the other acceptable options, it could be pursued with appropriate cost sharing using Section 933 (WRDA 1986) or Section 204 (WRDA 1992) authorities.

The DMMP Annual Work Plan was developed under the guidelines of the LTMS; therefore, further NEPA documentation was not required. By following the guidelines of the LTMS, impacts to other environmental or cultural resources are not expected. Therefore, the actions proposed in the DMMP Annual Work Plan are within the scope of the environmental compliance obtained through the LTMS EIS. Appendix E, LTMS Synopsis, details the LTMS environmental compliance. The ROD for the LTMS was signed on 3 February 1997 (LTMS EIS, Appendix A).

The Base Plan for Savannah Harbor includes the following dredged material management operations:

- Rotational use of the confined disposal areas located in South Carolina;

- Installing and using underdrains;
- Using the ODMDS or Sites 2 and 3;
- Identifying opportunities for public education concerning project operations including such items as harbor maintenance, navigation safety, environmental and archaeological programs.

The Base Plan for Savannah Harbor also includes the following environmental mitigation commitments:

- Implementation of an area rotational use plan and water management strategy within the South Carolina DMCAAs.
 - Current Status: Completed
- Clearing and maintenance of a 26-acre bare ground nesting area on Jones/Oysterbed Island.
 - Current Status: Commitment fulfilled. After the site was constructed, poor nesting performance led natural resource agencies to concur that maintenance as bare ground habitat was not warranted.
- Construction and maintenance of bird nesting islands within the seven South Carolina DMCAAs.
 - Current status: Partially implemented.
- Construction and maintenance of a nearshore bird island (LTMS EIS, Appendix G, G.3.07 c).
 - Current Status: Completed
- In-kind salt marsh mitigation.
 - Current status: Commitment fulfilled. Georgia DOT transferred funds to SC DHEC to acquire and preserve salt marsh.
- Improve fisheries habitat through installation of a second water control structure at an impoundment with the Savannah National Wildlife Refuge.
 - Current status: Commitment fulfilled. Georgia DOT transferred funds to the Savannah National Wildlife Refuge to install the second water control structure.
- Sediment Testing and Contaminant Evaluation.
 - Current status: Completed.

The DMMP for the Expansion Project is consistent with the current Base Plan. Dredged material from the inner portions of the harbor will be placed in historically

used containment areas. Dredged material from outer portions of the harbor will be placed in the Jones /Oysterbed Island DMCA, ODMDS, or Sites 2 and 3.²

2.5 Environmental Improvement (Section 1135) Study

The Savannah District of the US Army Corps of Engineers conducted a study to evaluate environmental improvements to the Savannah Harbor Navigation Project under authority provided by Section 1135 of the Water Resources Development Act of 1986. The approved modifications closed New Cut with hydraulic fill and ceased Tidegate operation. These actions were designed to reduce salinity levels in Back River and eliminate the flushing of Striped bass eggs and larvae through New Cut. The Section 1135 report, including environmental assessment, was completed in 1991. Construction of the modifications was completed in 1992, and the desired improvements have been realized.

2.6 Savannah Harbor Long Term Management Strategy

The LTMS (1996) identifies numerous structural and operational management measures, which are being implemented to maintain environmental quality throughout the Savannah Harbor Navigation Project. The LTMS also identifies environmental restoration measures which have been constructed and are currently maintained. In addition, the LTMS provides guidance for development and updating of the DMMP.

The LTMS identifies specific commitments by the Savannah District concerning the maintenance, operation, and any new work associated with the Savannah Harbor Navigation Project. Commitments in the following areas have been developed by the Savannah District in coordination with the appropriate state and Federal agencies and assessed through the NEPA process:

- Endangered Species;
 - Sea Turtles: Dredging and beach nourishment operations restrictions,
 - Right Whales: Dredging operations restrictions,
 - Manatees: Dredging operations restrictions,
- Fisheries;
 - Striped bass: Dredging operations restrictions,
- Migratory Birds;
 - Disposal area dike maintenance and dredging operations restrictions,
- Ocean Disposal;
 - Source material restrictions,

² An earlier (November 2010) version of the DMMP for new work material included beneficial placement of offshore material at Sites 11 and 12 for the purpose of supporting the littoral system; however, the City of Tybee Island requested that the material not be placed at these near shore sites.

- Management of the Savannah Ocean Dredged Material Disposal Site;
 - Material suitability restrictions,
 - Disposal placement technique restrictions,
 - Disposal monitoring and technical analyses,
- Wetland Impacts due to disposal areas;
 - Mitigation for wetland impacts due to diking area 14A,
 - Mitigation for wetland impacts due to construction of access road to area 2A,
- Stormwater runoff;
 - Use of Best management Practices,
 - Monitoring,
- Erosion Control and Sedimentation Plan;
 - Dredged Material Containment Areas: maintenance and operations restrictions and monitoring,
- Cultural Resources;
 - Development of a Cultural Resources Management Plan,
 - Signing of a Programmatic Agreement between the Savannah District, the Georgia State Historic Preservation Officer, the South Carolina State Historic Preservation Officer, and the Advisory Council on Historic Preservation concerning numerous actions and analyses to be conducted by the Savannah District,
 - Assess impacts of Savannah Harbor Navigation Project on Old Fort Jackson,
 - Assess impacts of Savannah Harbor Navigation Project on CSS Georgia,
 - Maintenance of a 100-foot stand-off around the CSS Georgia,
 - Conduct cultural resource surveys at all proposed new disposal areas,
- Mitigation of impacts in South Carolina due to disposal area operations;
 - Water level management for bird use,
 - Clearing and maintenance of a bird nesting area on Jones/Oysterbed Island,
 - Construction of nesting islands within disposal areas,
 - Construction of a bird nesting island offshore of Turtle Island,
 - Establishment of an escrow account with the SC OCRM for in-kind mitigation,

- Construction of a water control structure at the Savannah NWR for fisheries benefits,
- Mitigation of impacts in Georgia due to disposal area operations;
 - Restoration of 6.4 acres of tidal marsh in the harbor area,
- Freshwater supply to the Savannah National Wildlife Refuge;
 - Maintenance of the Diversion Canal, the channels in Little Back River and Middle River, and the canals and control works for the Refuge.

2.7 Lower Savannah River Basin Environmental Restoration Project

In 1996, the Savannah District of the US Army Corps of Engineers completed a final interim feasibility report for environmental restoration of the lower Savannah River Basin. The recommended plan included an 80-foot diversion structure at the upstream of Navigation Cut #3, which forces water back into an old oxbow previously cut off for navigation, opening the channel to Bear Creek, and realigning the mouths of both Bear and Mill Creeks. The plan restored more natural flow into an area which includes a major portion of the Savannah National Wildlife Refuge. Construction was authorized under Section 102 of the 1996 Water Resources Development Act. Construction of the project was completed in 2003.

3 Problems and Opportunities

This chapter describes the existing problems and opportunities at Savannah Harbor. The identification of problems and opportunities is the first step in the six-step planning process described in the P&G. Water resource-related problems at Savannah Harbor occur under existing conditions and are projected to continue to occur in the future under without-project conditions. The problems are related to container ship operations in the Federal navigation channel leading to the Garden City Terminal. The opportunities described in this chapter include potential improvements to navigation efficiency, which address the federal objective, and opportunities developed by Federal agencies, stakeholders, and the public during the study process.

3.1 Problems

The primary problems identified in this analysis relate to the inefficient operation of containerships in the Federal channel at Savannah Harbor, which affect the Nation's international trade transportation costs. The following problem statements describe these inefficiencies:

1. Existing shippers are experiencing increased/ inflated operations costs due to light loading and tidal delays;