

## **2.00 PURPOSE AND NEED FOR ACTION**

### **2.01 Project Area**

The project area is located in Chatham County, Georgia, and Jasper County, South Carolina. These counties lie in the Coastal Plain physiographic province in Georgia and South Carolina. The area is roughly bisected by the Savannah River, which, including certain reaches of its tributary channels, constitutes the boundary between the states of Georgia and South Carolina. The river enters the study area flowing in a generally southeasterly direction and then bends in the vicinity of Savannah to flow in a generally easterly direction to the Atlantic Ocean. Mainland areas are separated from the ocean by a line of barrier islands and intervening salt marshes and tidal rivers. The mouth of the Savannah River is located just north of Tybee Island.

The mainland of Chatham County, Georgia, is dominated by the City of Savannah. The city center is located on the southern bluff of the Savannah River approximately 18 miles northwest of the mouth of the river. The lands south of the city center and west of the coastal marshes are primarily devoted to urban development. Urban and industrial development extends northwestward along the Georgia side of the river, gradually giving way to natural woodlands and agricultural areas in the western part of the county.

The mainland of Jasper County, South Carolina, is predominately rural. Lands opposite the city of Savannah are characterized by a system of dikes, canals, and former rice fields constructed in the 18th and 19th centuries. The South Carolina side of the Savannah River is dominated by a predominantly brackish/salt marsh system.

The Georgia Department of Transportation (GDOT) (non-Federal sponsor) has provided seven upland confined disposal facilities (CDFs) in Jasper County for use in the Savannah Harbor. These CDFs are 2A, 12A, 13A, 13B, 14A, 14B, and Jones/Oysterbed Islands. Their locations are shown in Figure 1-1 and their sizes are described in Section 3.01.1.

### **2.02 Purpose and Need**

The purpose of the project is to address inefficiencies in the marine transportation of goods through Savannah Harbor.

The Waterborne Commerce of the United States reveals that total tonnage through Savannah Harbor has grown at an average annual rate of 6.2 percent between 1995 and 2004 (USACE 2006). Commodities are generally broken into three major categories, with one-third of the tonnage being in dry bulk form, one-third liquid bulk and the remaining third being general cargo/container commodities.

Over that 1995 through 2004 period (USACE 2006), nearly 75 percent of the volume through Savannah Harbor was comprised of the following 12 major commodities:

crude petroleum	liquid natural gas
gasoline	distillate and residual fuel oil
food and farm products	chemicals and related products
forest products, wood and chips	gypsum
building cement	basic textile products
iron and steel shapes	fabricated metal products

Because of the high handling efficiencies associated with containerized cargo, the shipping industry has evolved over the last 30 years so that the majority of the commodities are transported in containers. As described in the GRR Economic Appendix, most of the goods that move through the Port of Savannah now are within a container. The volume of loaded export and import TEUs handled at Savannah grew significantly over the last decade. Savannah is one of the rare ports that has developed a balance between its exports and imports. Export TEU volume grew 8 percent between 2007 and 2008, decreased by 5.1 percent during the recession of 2008/2009, and then rebounded to grow by 11.7 percent between 2009 and 2010. Import TEU volume rose 0.2 percent between 2007 and 2008, fell by 17.6 percent in 2008/2009, and then rebounded by 11.7 percent between 2009 and 2010. In 2010, GPA reported that loaded export TEUs totaled 1,144,554 and loaded import TEUs totaled 1,050,466. In GPA's FY2011 (which runs from July 2010 to June 2011), they handled 2,927,338 TEUs, an 11 percent increase (an additional 289,595 TEUs) over the previous year. In their most recent reporting quarter (July through September 2011), GPA reported that its container volumes grew 3.7 percent (770,190 vs. 742,593 TEUs) when compared to last year. These numbers indicate that container volumes through the port continue to grow.

The number of vessels calling at the port has grown in relation to the increase in the volume of goods moving through the port. As the volume of containerized cargo continues to increase, the size of ships that carry those containers will also increase as illustrated by the larger and larger container vessels that now call at the Port. The Corps expects the shipping industry to continue to replace older, smaller vessels with larger Post-Panamax vessels, particularly after completion of the Panama Canal Expansion.

Data on vessels calling at the GPA facilities in Savannah indicate that more than 80 percent of the vessels are considered operationally constrained (meaning that the vessels cannot carry full loads at all tides). "Light loading" of vessels or use of smaller vessels increase costs to the shipper, which are eventually passed on to the consumer.

The following specific problem statements were developed that summarize the navigation problems:

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

B. Light loading and tidal delays will increase as present harbor users increase their annual tonnage and as larger, more efficient ships replace older, smaller ones.

C. Existing ships are experiencing problems associated with turning capabilities and overall maneuverability in certain reaches of the inner harbor.

D. The severity of problems associated with turning capabilities and overall maneuverability in certain reaches of the inner harbor will increase as vessel size increases.

The GRR studies indicate that, based on a 50-year period of analysis, harbor deepening is the best method to solve these problems. Draft restrictions on Savannah Harbor increase the cost of shipping, and deepening the harbor to the proposed depth is expected to save current and future shipping costs. These cost savings are fully described in the GRR. Savings in liquid bulk, dry bulk, break bulk, liquefied natural gas (LNG) vessels, and containerized transportation costs would result from using more fully loaded and deeper draft vessels. Increasing the channel depth allows vessels to transport the same amount of commodities in fewer trips using the greater operating drafts or larger vessels. The Corps used regional and national forecasts and expected commerce for the South Atlantic coast to predict commerce types and levels for Savannah Harbor. The economic benefits of a harbor improvement would likely grow with increases in the volume of commerce moving through the port.

### **2.03 Public Concerns**

As indicated in Section 1.02, areas of concern include possible adverse impacts to wetlands, endangered species, water quality, groundwater, adjacent ocean beaches, anadromous fish spawning and nursery habitat, the City of Savannah's water supply, conversion of tidal freshwater marsh to tidal brackish wetlands within the Savannah National Wildlife Refuge (SNWR), and presence of contaminated sediments. See Table 1-1 on pages 1-5 through 1-7 of the EIS for a full list of all potential effects evaluated.

## **2.04 Study Authority**

This study was conducted under authority provided by the Congress of the United States pursuant to the Water Resources Development Act of 1999 (Public Law 106-53, Section 102(b)(9)). The wording of the authorization is as follows:

### **(9) SAVANNAH HARBOR EXPANSION, GEORGIA**

(A) IN GENERAL- Subject to subparagraph (B), the project for navigation, Savannah Harbor expansion, Georgia, including implementation of the mitigation plan, with such modifications as the Secretary considers appropriate, at a total cost of \$230,174,000 (of which amount a portion is authorized for implementation of the mitigation plan), with an estimated Federal cost of \$145,160,000 and an estimated non-Federal cost of \$85,014,000.

(B) CONDITIONS- The project authorized by subparagraph (A) may be carried out only after— (i) the Secretary, in consultation with affected Federal, State of Georgia, State of South Carolina, regional, and local entities, reviews and approves an environmental impact statement for the project that includes—

- (I) an analysis of the impacts of project depth alternatives ranging from 42 feet through 48 feet;  
and
- (II) a selected plan for navigation and an associated mitigation plan as required under section 906(a) of the Water Resources Development Act of 1986 (33 U.S.C. 2283(a)); and

(III) the Secretary of the Interior, the Secretary of Commerce, the Administrator of the Environmental Protection Agency, and the Secretary approve the selected plan and determine that the associated mitigation plan adequately addresses the potential environmental impacts of the project.

(C) MITIGATION REQUIREMENTS- The mitigation plan shall be implemented before or concurrently with construction of the project.

The 1999 Chief's Report and the Record of Decision 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. A copy of the 1999 Chief's Report and Record of Decision are included in this document as Appendix X.

## **2.05 Planning Process**

The GRR and EIS followed the six steps of the Corps of Engineers water resources planning process, which are:

- Identify Problems and Opportunities
- Inventory and Forecast Conditions
- Formulate Alternative Plans
- Evaluate Effects of Alternative Plans
- Compare Alternative Plans
- Select Recommended Plan

These six steps provided a framework for planning and are not necessarily sequential.

Appendix O provides a detailed description of the process that the Corps used to complete the first three steps of the planning process. The GRR/EIS provides a detailed description of the process used to complete the remaining steps.

## **2.06 Planning Objectives**

The first step of planning is to identify the problems and opportunities. A portion of this work is developing the major planning objectives. For this project, the objectives are:

A. To evaluate the need for increased navigation efficiency and safety. The size of a vessel and its cargo determine its draft (i.e., depth of water required for ship to float). With the current depth of the harbor, many vessels are not able to load to their maximum capacity and travel at any tide.

B. To avoid, minimize, or compensate for adverse environmental impacts associated with the proposed action. See Section 5.0 in the EIS and the Mitigation Plan in Appendix C for a discussion of environmental commitments incorporated into the proposed plan.

C. Provide adequate dredged material disposal capacity for the construction of the project and for the 50-year period of analysis.

The remaining portion of the first planning step (Identify the Problems and Opportunities) is included in the following section.