

A new model for container trade

Economic costs and benefits

A proposal to deepen the Savannah Harbor to 47 or 48 feet will bring \$115 million in annual net benefits to the United States. The Corps of Engineers, Savannah District came to this conclusion following years of extensive research.

The economic portion of the studies examined the characteristics of the future international shipping fleet, harbor commerce, current and future trade routes, and the capacity of the Garden City terminal on the Savannah River.

Lower Costs

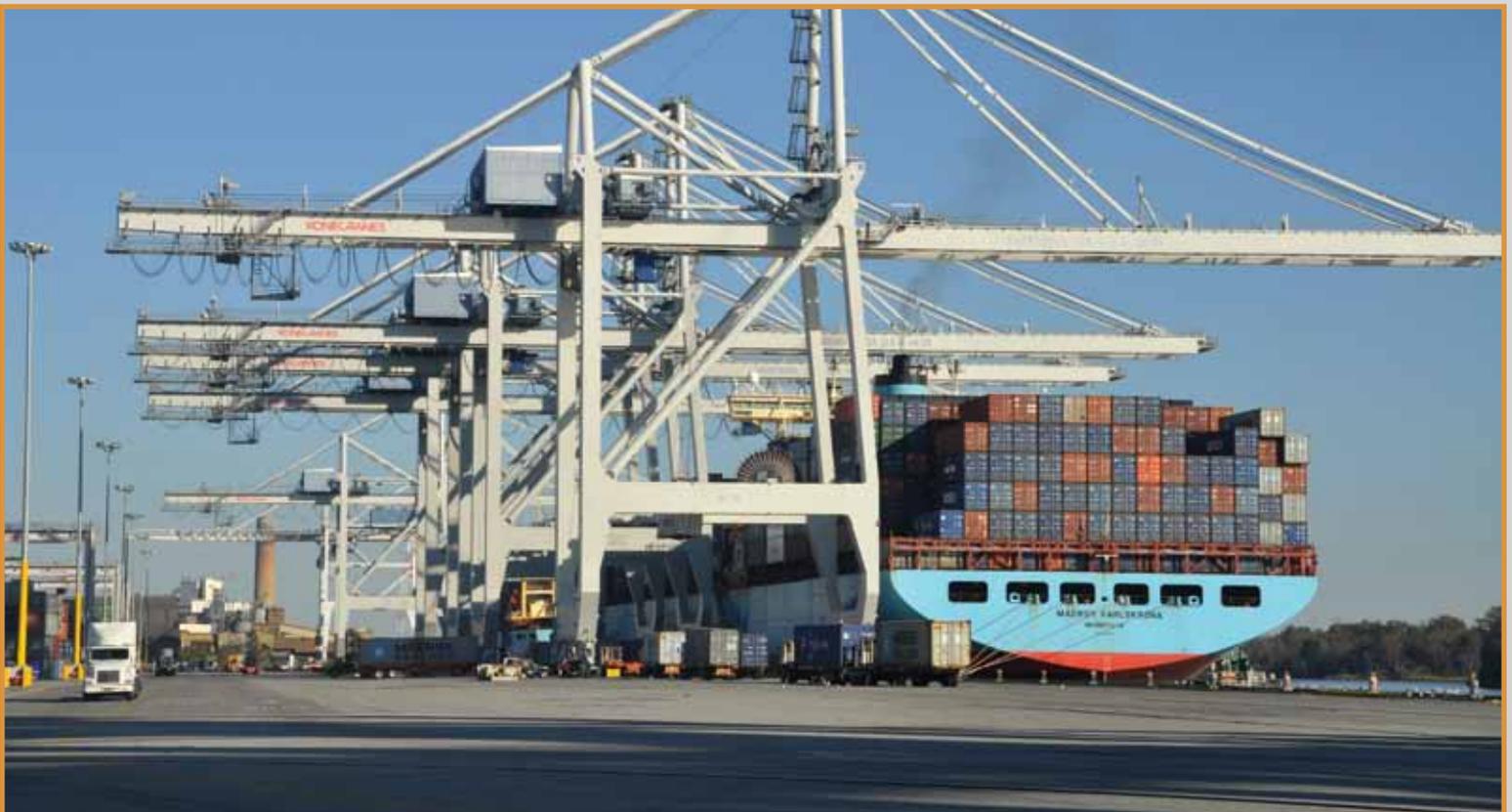
Savannah has the fastest growing container port in the nation but has the shallowest depth of its major worldwide trading partners. The harbor's current 42-foot depth limits efficiencies and increases transportation costs. Deepening the harbor will lower transportation costs, according to the report. Lower transportation costs can translate into lower consumer product costs.

Projections in the report indicate that the number of TEUs or 20-foot equivalent units (the standard measure for cargo containers) passing through Savannah Harbor will rise from 2.7 million in 2010 to 6.5 million by 2032.

Complex Issues

As the Corps' economic team studied the economics of a possible deepening, the experts discovered that the standard methodology no longer fit the changing world of international shipping as it applies to container trade. The Corps also discovered that the shipping industry, international trade routes, and consumer demand has rapidly changed. These issues all meant the Corps needed to create a new model to predict the impact of deepening to various depths at Savannah. The model also estimated the impact of the Panama Canal expansion on the industry's switch to more efficient vessels. The economic team, which included experts in navigation at the Corps' Institute for Water Resources, received input from industry experts to evaluate the sophisticated nature of container ship operations.

Although creating this new model added three years to the study time, the sophistication of the model provided higher quality, more refined information to be used in the decision-making process.



Containerized shipping, shown here at the Garden City Terminal, continues to grow at Savannah's port. *Photo by Brittany Phillips*

Costs

Depth	Construction Costs (Millions)	+ Mitigation Cost (Millions)	= Total Cost (Millions)
44	\$197.3	\$191.0	\$388.3
45	\$232.9	\$207.4	\$440.3
46	\$274.9	\$209.7	\$484.6
47	\$302.4	\$215.6	\$518.0
48	\$330.1	\$221.3	\$551.4

Costs and Benefits

Depth	Annualized Benefits (Millions)	- Annualized Costs (Millions)	= Net Benefits (Millions)
44	\$97.3	\$25.7	\$71.6
45	\$128.3	\$28.1	\$100.3
46	\$142.9	\$30.8	\$112.1
47	\$148.7	\$32.7	\$116.0
48	\$150.4	\$34.7	\$115.7

Although there are increasing costs associated with deepening the harbor, the increasing benefits could pay off the first costs within a few years.

The 47- or 48-foot alternatives provide more than \$115 million annually in net benefits to the nation.

Costs, Benefits, and Funding

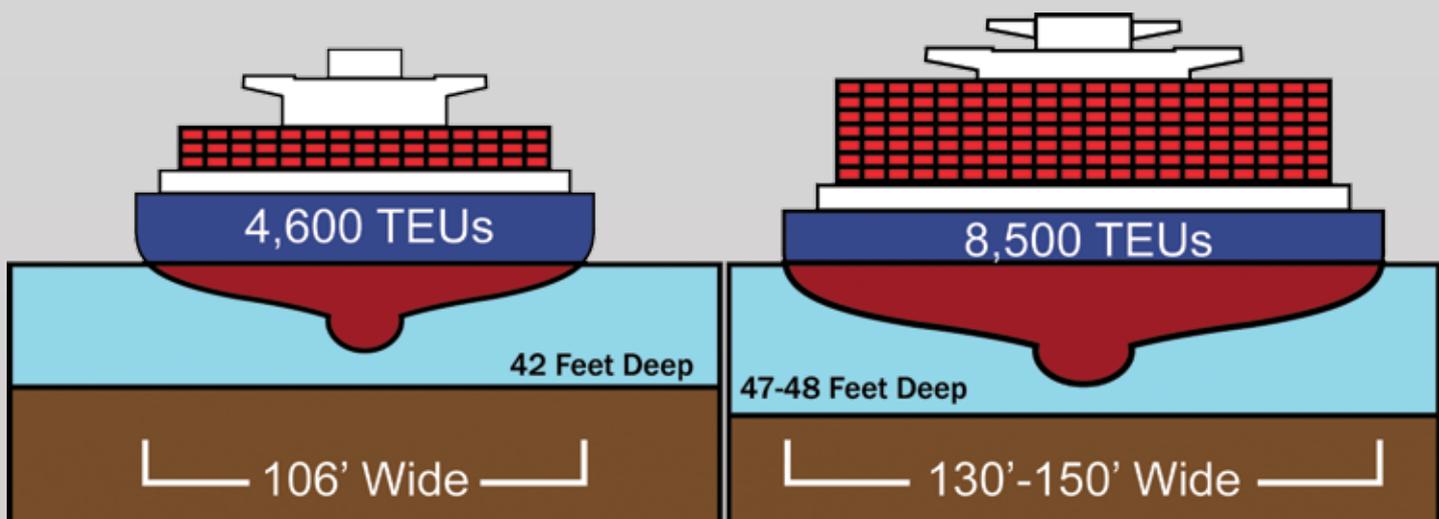
Costs of the study and construction are shared between the U.S. government and the state of Georgia. If the harbor is deepened, those costs would also be shared for dredging to 47 feet. The state of Georgia has indicated its willingness to pay 100 percent of additional costs to deepen the harbor an additional foot and to pay for additional annual costs of maintaining the greater depth.

The construction costs vary depending on the depth of the harbor. They run from \$197.3 million for a 44-foot depth to \$330.1 million for a 48-foot depth. Additional environmental mitigation costs also vary and range from

\$191 million to \$221.3 million respectively. The Corps calculates the nation will receive benefits of \$115 million annually or more depending on the depth. The economic study evaluated benefit years 2015 through 2065.

To realize these benefits, the harbor must allow safe passage for the newer, larger ships. The Corps has devised navigation features that would accommodate this new generation of deep draft container ships expected to call on the port in Savannah. 

Illustrations by George Jumara.



The harbor's current 42-foot depth limits efficiencies and increases transportation costs. However, deepening the harbor will lower transportation costs, which can translate to lower consumer product costs. *TEUs: Twenty-foot equivalent units. The international standard unit for measuring cargo containers.