



US Army Corps
of Engineers®

DEEP WATER PORTS AND HARBORS

Value to the Nation



PORTS
AND
HARBORS
DEVELOPMENT
PROGRAM

VALUE OF U.S. PORTS AND HARBORS

Ports and Harbors

Every day the work taking place at our nation's ports and harbors impacts our lives. For example, more than 95 percent of overseas trade moves in and out of the United States by ship.

Our nation's ports and harbors serve as an entry point—for everything from the gas that runs our cars, to the food on our tables, to the computers in our offices—and as an exit point for imports to other countries.

Our ports and harbors are America's gateway to participation in the global economy, providing the nation's farmers, manufacturers and businesses with convenient, affordable access to world markets.



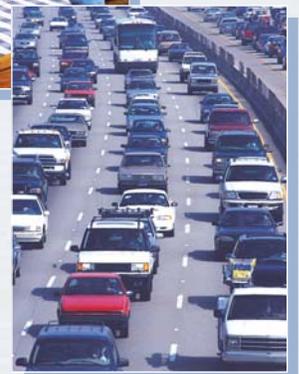
out of these ports and harbors with minimal impact upon the environment.

In partnership with local port authorities, the Corps spends nearly \$1.5 billion annually on dredging and construction projects to maintain hundreds of ports and harbors nationwide.



In fact, virtually all of our jobs depend in one form or another on the free flow of goods through U.S. ports and harbors.

The mission of the U.S. Army Corps of Engineers' navigation program is to ensure that water traffic can move safely, reliably and efficiently in and



VALUE TO THE ECONOMY

The Economy

Even in this era of instant ordering and real-time communication we still need to move goods from Point A to Point B. In the majority of cases the most cost-efficient, environmentally-friendly way to do so is by ship.



The cost-per-unit to transport goods by water is two to three times lower than other forms of transportation. The extensive use of waterborne shipping is helping to keep the costs of durable, bulk and consumer goods affordable for businesses and consumers.

Our nation's ports and harbors are a crucial component of our shipping system and a linchpin of our economy, allowing America to remain one of the world's largest trading nations.

For example, did you know that...

- The U.S. marine transportation industry supports nearly \$1 trillion in commerce and creates employment for more than 13 million people;
- U.S. ports and harbors handle more than 2.3 billion short tons of domestic and foreign commerce;

- Every day, 9 million barrels of oil to heat our homes and businesses, and fuel our cars, are imported into the United States by ship;
- Over 50 percent of imported oil comes through harbors maintained by the Corps; and
- More than 67 percent of consumer goods bought by Americans pass through harbors maintained by the Corps.

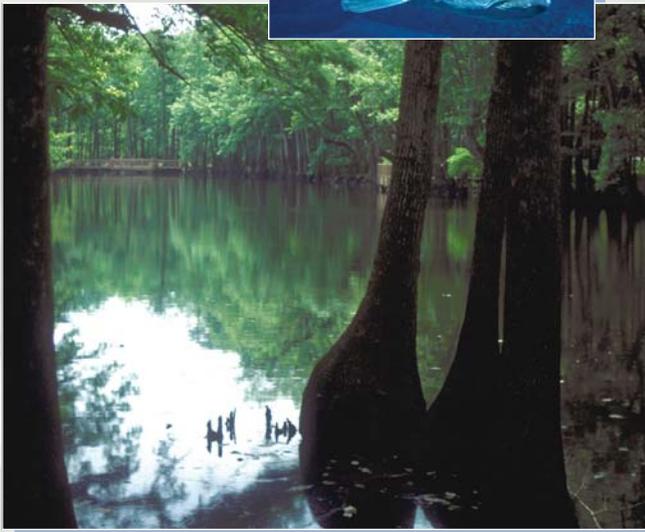


The Corps is proud to play an important role in guaranteeing the effective operation of our nation's ports and harbors and the smooth flow of commerce through them.

VALUE TO THE ENVIRONMENT

The Environment

Corps personnel consistently work to identify environmentally beneficial ways to use dredged material from harbor maintenance projects. For instance, dredged material has been used by the Corps to enhance wildlife habitats by creating nesting islands for waterfowl. Fisheries also have been improved by mounding dredged material to establish fish refuge habitats.



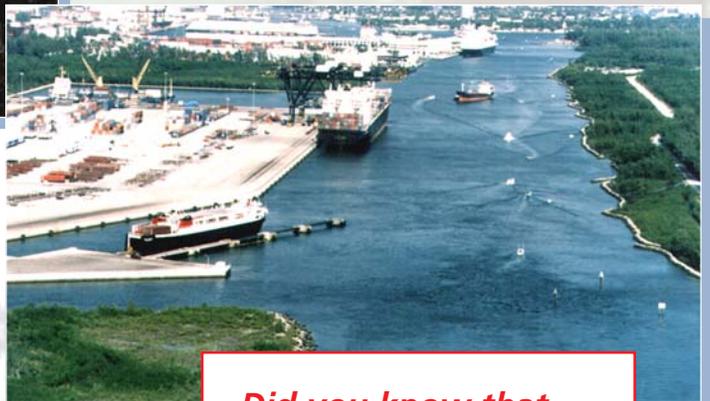
One of the key uses of dredged material, though, is to create, preserve and restore wetlands. These projects are particularly important because of the crucial role wetlands play in our environment, providing homes for thousands of plants, fish and wildlife, including many species that are endangered. Wetlands also serve as rest stops for migratory birds, help prevent flooding and control erosion.

Corps personnel carefully consider the environmental impact of each construction or dredging project they undertake. During the

planning phase, we conduct computer modeling to project the potential impact of proposed changes and make adjustments as needed before



work even begins. We also conduct dredging operations during "environmental windows", which are time periods when disruption to marine species can be minimized.



Did you know that...

Shipping goods by water results in far fewer pollutants being emitted into the air than other forms of transportation.

BALANCING THE BENEFITS

The Benefits

When undertaking navigation studies the Corps strives to find the proper balance between society's needs for economic growth and environmental protection. The following are two examples of projects, which demonstrate how the Corps is working to achieve this balance in action.



imports of crude oil and exports of petroleum products and chemicals. More than 5,000 ships and 50,000 barges utilize the port, accounting for over 200,000 jobs. It is also a major regional port for the handling of containerized cargo and anchors a vast domestic distribution chain via the Intracoastal Waterway.

HOUSTON-GALVESTON NAVIGATION CHANNEL

This project is an ambitious effort to improve shipping channels for the Port of Houston-Galveston to accommodate today's larger ships. During this effort, the Corps is also taking steps to protect the environment. The port's shipping channels currently have a navigation depth of 40 feet. The project will deepen the shipping lanes to 45 feet.

The port of Houston-Galveston is one of the top five U.S. ports handling bulk cargo, including



BALANCING THE BENEFITS, *con't.*

The Benefits

Deepening the shipping channels at the port will ensure that it can continue its crucial role in the nation's economy. At the same time, as part of the project, an interagency team, including the Corps, has been formed to address environmental concerns.

The team is taking a number of steps to reduce the environmental impact of the project, including constructing 118 acres of oyster reef in mid-Galveston Bay near the shipping channel. Dredged material also is being used to create an 8-acre island that will provide habitat for several species of birds.



at the Port of Los Angeles. The dredged material was used to construct a new pier in the outer harbor to allow for construction of additional cargo terminals.



PORT OF LOS ANGELES/BATIQUITOS LAGOON

To accommodate larger international container ships, the Corps worked with several agencies to dredge new and deeper navigation channels

These changes have enabled the Port of Los Angeles to keep up with the demands placed upon it by its ever-expanding role as a linchpin of America's participation in the global economy. Los Angeles is the seventh largest port in the world handling containerized shipping. It is a regular host to the Marsk S class, the world's largest container ship. Overall, the port handles over \$100 billion in cargo annually, including an array of manufactured and consumer goods from the Pacific Rim.

The dredging of the port has been a tremendous economic success, but it also has had an impact on marine life in the area. To offset this impact, the Corps and other agency partners dredged the inlet to nearby Batiquitos Lagoon, opening it up to the ocean for the first time since the 1930s. Marine fish have returned in record numbers and the salt marsh has been revitalized by the tidal exchange. The Batiquitos Lagoon Enhancement Project is one of the largest restoration projects completed in America.

TOMORROW'S CHALLENGES

The Challenges

Many challenges lie ahead for those who operate and maintain the nation's ports and harbors and the companies and individuals that rely upon them for livelihoods.

The good news is that in the next 20 years experts predict a 65 percent increase in the amount of cargo transported by container ships. Containerized trade is the fastest growing segment of the economy, doubling every 10 years, which means a steady increase in the number of vessels calling on U.S. ports. In turn, that means more jobs and a stronger economy.



accommodate ships of this size. America runs the risk of losing imports and jobs in the years ahead to these ports.

To address this challenge, the Corps and other organizations have undertaken a systematic effort to modernize and upgrade the nation's ports and harbors to keep pace with these larger vessels. From Oakland to New York, the Corps is participating in more than 20 modernization projects and 20 studies.

Overall, the Corps plans to spend more than

\$4 billion over the next decade on new construction to deepen and widen channels at major harbors. Environmental considerations will remain at the forefront of our thinking and planning throughout this process.



However, there is a dark cloud on the horizon. Many of the world's marine transportation companies are beginning to use container ships that require 50- to 55-feet of channel depth. Very few U.S. ports have sufficient depth for these ships. On the other hand, many nearby ports in Canada and the Bahamas can



WORKING TOGETHER

Working Together

In carrying out its navigation responsibilities, the Corps works closely with a variety of federal agencies including the Environmental Protection Agency, Maritime Administration, National Oceanic and Atmospheric Administration, U.S. Coast Guard, U.S. Customs Service and the U.S. Department of Agriculture.



We also partner with state and local governments, port authorities, and many private environmental groups and trade organizations to solve problems and take advantage of water resource development opportunities that are in the national interest.

We look forward to expanding these partnerships and building new alliances as we work to meet the challenges and opportunities facing our nation's ports and harbors in the years ahead.

LEARNING MORE

To learn more about the nation's ports and harbors and the Corps role in maintaining them, please visit www.CorpsResults.us.

Produced by the U.S. Army Corps of Engineers: The Institute for Water Resources in partnership with the Headquarters. To inquire about this brochure, please contact IWR publications office at (703)428-9042 or Arlene.J.Nurthen@usace.army.mil. To obtain sources for the information used in this brochure, visit www.CorpsResults.us.