



2017 INFRASTRUCTURE REPORT CARD



OVERVIEW

The United States' 25,000 miles of inland waterways and 239 locks form the freight network's "water highway." This intricate system, operated and maintained by the U.S. Army Corps of Engineers, supports more than half a million jobs and delivers more than 600 million tons of cargo each year, about 14% of all domestic freight. Most locks and dams on the system are well beyond their 50-year design life, and nearly half of vessels experience delays. Investment in the waterways system has increased in recent years, but upgrades on the system still take decades to complete.

CAPACITY & CONDITION

A unique component of the nation's freight network, inland waterways are shared by only 38 states and are operated and maintained by the U.S. Army Corps of Engineers (USACE). The system includes a vast network of 25,000 miles of waterways and 239 locks used for commerce. The Atlantic Intercoastal Waterway serves ports along the East Coast, such as the Port of Virginia. In the Pacific Northwest, the waterway system leads to the Port of Seattle and other ports in the area.

Delivering more than 575 million tons of cargo in 2015, valued at \$229 billion, these waterways connect to inland and ocean ports, providing direct access from international markets.

Barge transport provides the most fuel-efficient way to move goods on the ground; on a single gallon of fuel, a barge can move goods four times farther than trucks. Inland waterways are vital to our nation's agriculture industry, as 60% of grain exports are moved by barge. Similarly, in the energy sector, more than 22% of domestic petroleum and petroleum products and 20% of coal used to generate electricity are moved on the inland waterways. Barges carrying goods such as soybeans and iron travel major water channels including the Mississippi River and the Pacific Northwest's Columbia-Snake Rivers. The system supports more than half a million jobs.



Inland Waterways



For the industries that rely on the inland waterways to move their products, this aging and unreliable system can be costly. The majority of locks and dams on the system are well beyond their 50-year design life. A lock acts as an elevator for a cargo ship, making it easier for vessels to navigate the uneven and inconsistent water levels of U.S. rivers. When a ship reaches a lock, gates open for the ship to enter the lock chamber. Once the ship is within the lock, a valve either fills or empties the lock to bring the ship level with the water on the other side of the opposite gate. The opposite gate then opens for the ship to proceed.

Coupled with increasing traffic, vessels may be delayed for hours while aging locks are shut down for maintenance and repair. Between 2000 and 2014, the average delay per lockage nearly doubled from 64 minutes to 121 minutes. Across the system, 49% of vessels experienced delays in 2014. However, delay data is not currently standardized across the system and the reason for delay is not recorded, making it hard to accurately assess delays.

FUNDING & FUTURE NEED

Inland waterways construction and rehabilitation costs, including for locks, are shared by the federal government through general funds and by users through the Inland Waterways Trust Fund on a 50-50



2017 INFRASTRUCTURE REPORT CARD

basis. Operation and maintenance costs for inland waterways are covered in full by the federal government.

The Inland Waterways Trust Fund is supported by a 29 cents per gallon tax on barge fuel, and cannot exceed expenditures in a given year. In April 2015, this user tax was increased by 9 cents for the first time since 1995 upon the urging of the Inland Waterways Users Board, in order to increase investment in the system.

The USACE estimates overall investment needs of \$4.9 billion over the next 20 years.

Thanks to recent increases in investment and project prioritization, there has been some improvement in the projected completion date of many inland waterway lock and dam rehabilitation projects. For example, projects once expected to be completed in 2090 are now on track to be completed in 2038. However, for this progress to come to fruition, and the trend to improve, funding must continue at a higher and more consistent level, given the large backlog of needs. One major project, the Olmsted Lock on the Ohio River, depleted available funding for other inland waterways projects. In the Water Resources Development Act (WRDA) of 2014, additional federal funding was allocated to free up Inland Waterways Trust Fund money for other projects.

RESILIENCE & INNOVATION

The USACE has moved to a risk aversion decision making process, to better prioritize which projects are addressed first. In addition, USACE released *Technologies to Extend the Life of Existing Infrastructure*, a first-of-its-kind best practices compilation on life cycle maintenance management, innovative technologies, and emerging capabilities that are happening at USACE locks and dams.

RECOMMENDATIONS

- Give USACE contract authority for projects, to avoid the stop-and-start of construction currently happening because of the appropriations process.
- Fund waterways projects at the authorized levels and do so consistently, passing a Water Resources Development Act on a two-year cycle.
- Ensure that full use of the Inland Waterways Trust Fund continues to be appropriated, and increase the amount spent on operations and maintenance of the inland waterways each year.
- Utilize alternative financing and delivery methods, such as public-private partnerships, when appropriate.
- Develop and implement a standardized measurement for delays on the system.

DEFINITIONS

Draft – The depth of a waterway, which determines the size of barge or ship that can travel through it.

Dredge — To excavate or deepen the bed of a harbor, river, or other area of water by scooping out sediment and moving it to a different location. This technique is often used to keep waterways navigable.



2017
INFRASTRUCTURE
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Lock chambers — An enclosure consisting of a section of canal that can be closed to control the water level. It is used to raise or lower vessels that pass through it.

SOURCES

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