



U.S. House of Representatives
Committee on Transportation and Infrastructure

Washington, DC 20515

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April 13, 2012

MEMORANDUM

TO: Members of the Subcommittee on Water Resources and Environment

FR: Bob Gibbs
Subcommittee Chairman

RE: Hearing on "How Reliability of the Inland Waterway System Impacts Economic Competitiveness."

PURPOSE OF HEARING

The Water Resources and Environment Subcommittee is scheduled to meet on Wednesday, April 18, 2012, at 10:00 a.m. in 2167 RHOB, to receive testimony on "How Reliability of the Inland Waterway System Impacts Economic Competitiveness" from the U.S. Army Corps of Engineers, a representative from the energy industry, a representative from the agriculture sector, a representative from the inland navigation economics profession, representatives from the inland navigation industry, and other affiliated organizations.

BACKGROUND

History of the Inland Waterways Transportation System

Federal interest in navigation in the United States stems from the Commerce Clause of the Constitution. The history of federal improvements to inland navigation in the United States dates back to the 1820's when Congress authorized construction of a canal connecting Lake Michigan to the Illinois River and authorized the United States Army Corps of Engineers to remove snags, debris, and other obstructions from the Mississippi and Ohio Rivers. These rivers and coastal ports were the primary routes of commerce for the new nation.

For nearly two centuries the federal government has dredged channels and built locks and dams, wing dikes, and other structures to create an Inland Waterways Transportation System for the efficient movement of goods. The System includes major rivers such as the Mississippi,

Missouri, Ohio, and Columbia Rivers, as well as smaller waterways such as the Tennessee, Arkansas, Monongahela, and Hudson Rivers.

Today the Inland Waterways Transportation System provides an alternative to truck and rail and is the most cost-effective and energy efficient means for transporting commercial goods, especially major bulk commodities like grain, coal, and petroleum products. The Inland Waterways Transportation System is also a key component of State and local economies and job creation efforts and is essential in order to maintain economic competitiveness and national security.

The United States Army Corps of Engineers operates and maintains approximately \$235 billion worth of water resources infrastructure assets, including a network of 11,000 miles of the “fuel-taxed” Inland Waterways Transportation System. The Corps operates and maintains 221 lock chambers at 185 sites on 27 inland rivers and intracoastal waterways segments.

Costs and Benefits of the Inland Waterways Transportation System

Benefits of the Inland Waterways Transportation System are numerous. For instance, one 15-barge tow on a river can carry as much cargo as 216 rail cars or 1,050 large trucks. If the cargo transported on the inland waterways each year had to be moved by highways, it would require 58 million truck loads. A wholesale diversion of waterway traffic to the nation’s rail network would require 100,000 additional rail freight cars and 2,500 additional locomotives.

Barges moving on waterways are safer, more fuel efficient, and less polluting than other means of transportation. For example, on average, a gallon of fuel can move one ton of cargo 155 miles by truck, 413 miles by train, and 576 miles by barge. Due to these efficiencies, carbon dioxide emissions were 2.1 million metric tons less in 2005 than if rail transportation had been used, and 14.4 million metric tons less than if trucks had been used.

Thirty-eight states are directly served by the nation’s Inland Waterways Transportation System, constituting between 500 and 700 million tons of bulk commodities valued at more than \$125 billion annually. At an average savings of more than \$12.00 per ton over an alternate overland mode, this equals \$7 billion in annual transportation cost-savings. Water transportation also has the potential to move huge amounts of cargo that could alleviate congestion on major highway arteries, such as I-95 on the Atlantic coast.

For some goods, as much as 50% of the ultimate price paid by the consumer is attributable to transportation costs. Keeping these costs low not only benefits consumers here in the United States, it also makes products produced in the United States more competitive on the world market. Congestion at an outdated lock on a waterway can result in increased costs that rob the farmer or manufacturer of his or her profit. Delay and its associated costs also can rob a farmer or manufacturer of his or her market. Agriculture products account for 22% of all transported tonnage on the nation’s Inland Waterways Transportation System.

America’s utility industry is also dependent on inland waterways. America’s utility industry uses the Inland Waterways Transportation System to transport over 20% of the coal it

consumes to produce electricity. More than 30% of the oil and petroleum products used across the nation, and nearly all the home heating oil and gasoline used in New England, moves by barge.

Benefits to shippers and freight transportation savings are only a part of the benefits for the nation's Inland Waterways Transportation System. The Inland Waterways Transportation System also provides flood control benefits, increase nearby property values, provides water supply for nearby communities, generates hydroelectric power, provides recreational opportunities, provides local and regional economic opportunities, and enhances national security capabilities and readiness.

Condition of the Inland Waterways Transportation System

Aging infrastructure along the Inland Waterways Transportation System also presents a challenge. Nearly 60% of these facilities have been in service for longer than 50 years, while almost 40% are more than 70 years old, and two locks built in 1839 remain in service today.

Reliability of transportation networks is critical to the nation's economy. While this infrastructure has served the nation well, operation and maintenance expenditures will only slightly prolong the life of a depreciating asset that will continue to diminish in performance. And, as the asset gets older, its operation and maintenance requirements will grow.

Taking the Inland Waterways Transportation System as a whole, structures have been deteriorating faster than the nation has been replacing or rehabilitating them. As things break, they have to be fixed. The result has been a loss in the reliability of the system. For example, on the Ohio River, navigation outages have increased more than three fold since 2000, going from approximately 25,000 hours to 80,000 hours.

Even closures of locks on tributary systems could cause harmful economic impacts. For instance, closure of the locks on the Lower Monongahela River, a tributary of the Ohio River, would impact 21 million Americans who rely on electricity provided by coal that is shipped on the river. A closure of the locks on the Lower Monongahela River is estimated to have an annual economic impact of \$997 million on utility prices alone.

Unscheduled outages are more costly than scheduled outages. Repair times can have major impacts for traffic that depends on the facility and for shippers and manufacturers that depend on timely delivery of products. A perception of unreliability leads to uncertainty, which often causes shippers to switch to more expensive means of transportation.

Many of the locks on the nation's Inland Waterways Transportation System are 600 feet long. While this was the industry standard in the 1920's, today's 15- barge tows that traverse the system are 1,200 feet long. As a result, most tows must lock using a time-consuming process in which the barges are decoupled from the towboat and moved 6 or 9 at a time through the lock. Assuming the barge tow has no delay at the lock, this can take 1 to 2 hours, under optimal conditions. However, in relation to the Upper Mississippi River-Illinois Waterway system, the farther south a barge travels the more traffic it encounters, thereby increasing delays.

For instance, lock delays at La Grange on the Illinois Waterway average more than 2 hours of delay, while Locks 22, 24, and 25 on the Upper Mississippi River average delays of 5 hours. Even on the two southernmost locks on the Upper Mississippi River, which are larger than the 600 foot configuration, delays still average between and 1 and 2½ hours. These average annual delays mask the more severe delays during grain harvest season and it is not uncommon for some traffic to suffer delays of a week or longer due to unannounced outages.

Two recent failures on the Ohio River at Markland Lock (5 months) in 2009 and at Greenup Lock (1 month) in 2010 demonstrate the need for renewed interest in the nation's Inland Waterways Transportation System. While unfortunate, these failures occurred at facilities where auxiliary lock chambers exist to temporarily accommodate barge traffic, though at a slower pace.

Had these failures occurred on a system like the Upper Mississippi River, where there are very few auxiliary locks, the impacts would have been compounded. According to recent studies, a failure at certain locks on the Upper Mississippi-Illinois Waterway could cost agricultural producers up to \$45 million and barge companies up to \$162.9 million depending on the lock and the length of the outage. A two-week failure at Lock and Dam 20 on the Upper Mississippi would be estimated to cost \$5.1 million to barge company revenues, while a one-year failure would cost \$150.1 million to barge company revenues. The grain industry would lose \$2.8 million and \$44 million respectively.

Even scheduled outages cause ripple effects throughout the nation's economic fabric. During a scheduled outage of the Columbia-Snake River System from December 2010 to March 2011, barge companies temporarily laid off a significant number of their employees, with one company laying off 67% of its workforce. And, rail and truck companies during the scheduled closure increased their rates from 2% to 4% respectively.

If the nation does not modernize and maintain the Inland Waterways Transportation System, the goods transported by barge will have to switch to other more expensive modes of transportation. When it becomes more expensive to produce and transport goods in the United States, production facilities and jobs move overseas.

Inland Waterways Trust Fund

The Inland Waterways Trust Fund was first authorized in the Inland Waterways Revenue Act of 1978 for the purpose of providing funds for the construction and rehabilitation of navigation projects. The 1978 Act created the Trust Fund by assessing a fuel tax on vessels that utilized the Inland Waterways Transportation System beginning in 1980 at a rate of \$0.04 per gallon and incrementally increased to the current level of \$0.20 per gallon in 1994.

However, it was not until passage of the Water Resources Development Act of 1986 that expenditures were authorized from the Inland Waterways Trust Fund. By then, the Trust Fund had grown to \$260.2 million. Trust Fund expenditures pay for half of a given construction or

rehabilitation project with the other half coming from the General Fund in the Treasury, while operation and maintenance activities are paid for in total from the General Fund in the Treasury.

The Inland Waterways Trust Fund is an invested fund in interest-bearing obligations and the Trust Funds revenues are a combination of tax receipts and interest earnings. The Treasury Department is responsible for the quarterly collection and investment of these receipts while the United States Army Corps of Engineers is responsible for recommending the timing and amount of the expenditures during its preparation of the annual budget submission to Congress. Congress is ultimately responsible for appropriating funds from the Trust Fund and General Fund in support of construction and rehabilitation activities on the Inland Waterways Transportation System.

The balance in the Trust Fund steadily declined between 2003 (a year-end balance of \$412.6 million) and 2009 (a year-end balance of \$57.7 million) as Congress dedicated increased amounts to modernize the Inland Waterways Transportation System. In fact, from 2000 to 2009, expenditures exceeded revenues. This resulted in a decline of the Trust Fund balance to the point that today, expenditures are limited to the amount of annual fuel tax revenue collected for that particular year. The increased costs and constrained Trust Fund have resulted in a backlog of authorized yet unconstructed projects.

Challenges to Maintaining the Inland Waterways Transportation System

Challenges to maintaining the Inland Waterway Transportation System can be associated with both process and funding. In recent decades, it has become increasingly difficult to get projects through the congressional and Corps of Engineer process as well as increasingly difficult to maintain a level of funding to keep up with repair and replacement needs.

Those Inland Waterways Transportation System projects authorized in the Water Resources Development Act of 1986 were completed within an average of 6 years. However, projects authorized since 1986 have on average taken 20 years to complete and cost more than twice the authorized amount.

As an example, the recently completed project at McAlpine Locks and Dam near Louisville, Kentucky, took 10 years to complete. An almost identical lock chamber located next to McAlpine took only three years to complete in 1961. This difference reveals the difficulty in developing accurate capital planning forecasts and demonstrates a multitude of issues surrounding the project delivery process.

More alarming is the Olmsted Locks and Dam project on the Ohio River between Illinois and Kentucky. As authorized in 1988, the \$775 million project was designed to replace two aging locks completed in 1929. While the project broke ground in 1992 and was expected to be completed no later than 2005, today the project remains incomplete and the cost estimates have been revised upwards to approximately \$3.1 billion and the expected completion date (barring additional factors or complications) is beyond 2020, almost 30 years after the project broke ground.

Many factors contribute to this scenario at Olmsted. The cost escalation can be linked to factors such as design and scope changes, differing site conditions, and reprogramming funds to other projects. Some are factors which are within the control of the Corps of Engineers while others can be attributed to insufficient funding and factors outside of the purview of the Corps of Engineers.

These cost overruns have contributed greatly in the spending down of the Inland Waterways Trust Fund. While the economic benefits of this project outweigh the costs, frustration of the House of Representatives Committee on Transportation and Infrastructure and the Inland Waterways Users Board continues to mount.

This has caused ripple effects throughout the entire Inland Waterways Transportation System. Because it is so costly, until the project at Olmsted is complete, it is difficult to initiate, much less complete, other projects on the Inland Waterways Transportation System.

The Congress has been appropriating \$170 million per year on average for the Inland Waterways Transportation System. Compare this to the estimate that it will require \$3.8 billion to complete projects already under construction and there is another \$4.3 billion of authorized projects for which construction has not started. To completely modernize the system with new construction and rehabilitation of old structures would require an estimated \$18 billion. That is what would be required to fully realize the economic benefits of the Inland Waterways Transportation System.

Inland Waterways Users Board Recapitalization Plan

Section 302 of the Water Resources Development Act of 1986 established the 11-member Inland Waterway Users Board intended to give commercial users, who pay the fuel tax, an independent voice in investment decisions relating to the Inland Waterway System. Noting the complications surrounding the Olmsted Locks and Dam project and other projects authorized after 1986, the Inland Waterway Users Board delivered recommendations to the Secretary of Army and Congress on April 13, 2010. The "Inland Marine Transportation System (IMTS) Capital Projects Business Model" proposes major revisions to reform the funding and methods for carrying out projects on the Inland Waterways Transportation System.

The Users Board recognized that under current practice, Inland Waterways Transportation System projects that have already begun construction would require an estimated \$3.8 billion to complete. With average annual revenues of the Trust Fund between \$75 and \$85 million, these projects would not be complete until 2035 or 2040. There is also an additional \$4.3 billion of authorized work that has not yet begun construction. Total authorized and unauthorized activities could be as much as \$18 billion to address new construction and rehabilitation of existing structures. (\$12.1 billion in new construction, \$5.9 billion in rehabilitation.) Current investment levels are, on average, \$170 million annually.

The recommendations of the Inland Waterways Users Board call for a 20-year recapitalization or asset renewal program that would, among other items, increase the investment level on the Inland Waterways Transportation System to \$380 million annually. This increased

investment would require that Congress enact an increase in the Inland Waterway fuel tax from the current \$0.20 cents per gallon to \$0.26 per gallon.

In addition, the recommendations include provisions requesting Congress change the cost sharing formula for some construction and rehabilitation projects that cost less than \$100 million. The Users Board suggests that all new construction or rehabilitation projects that cost less than \$100 million be paid for from the General Fund in the Treasury, and for all construction or rehabilitation projects that cost more than \$100 million be cost-shared 50%-50% from the Trust Fund and the General Fund.

Lastly, the Users Board recommends the establishment of a project-by-project cost-sharing cap to protect the Users Board and the industry it represents from unreasonable cost escalation and project delays. Cost increases above the proposed cap threshold would be 100% federally funded unless the increase was approved for cost-sharing by both the Users Board and the United States Army Corps of Engineers.

The Users Board also made numerous recommendations to the United States Army Corps of Engineers to address some changes in the planning processes in order to better streamline project delivery and reach project completions more quickly.

On March 29, 2012, Representative Ed Whitfield (R-KY), Representative Jerry Costello (D-IL) and 4 other bipartisan co-sponsors introduced H.R. 4332, the "Waterways Are Vital for the Economy, Energy, Efficiency, and Environment Act of 2012." This legislation tracks closely with the recommendations from the Users Board and would implement most of the Users Board proposal.

Witnesses

Major General John Peabody
Mississippi River Valley Division, United States Army Corps of Engineers

Mr. Martin Hettel
Senior Manager, American Electric Power River Operations

Mr. Mike Steenhoek
Executive Director, Soy Transportation Coalition

Mr. Mark Knoy
President, American Commercial Lines

Mr. Robert Dolence
Vice President, Leonardo Technologies

Ms. Kristin Meira
Executive Director, Pacific Northwest Waterways Association

A representative from the American Society of Civil Engineers (invited)