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Inland Waterways: Financing and Management Options in Federal Studies

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Introduction

The inland waterways system (IWS) is a 12,000-mile system of navigation channels, dams, and locks built for moving bulk commodities by barge tows. The system includes the Mississippi and Ohio rivers, their tributaries, the Illinois Waterway, the Columbia and Snake rivers, and the Gulf Intracoastal Waterway. The IWS is particularly important for moving corn, soybeans, fertilizer, coal, oil and petroleum products, chemicals, limestone, and sand and gravel. In 2010, the latest year for which data are available, the system carried approximately 550 million tons of freight.¹

The operation of the IWS depends upon more than 200 locks managed by the Army Corps of Engineers (Corps). Many of these were built in the 1930s to 1950s and require frequent maintenance. Some need major rehabilitation. Scheduled and unscheduled maintenance work by the Corps has increased, reducing lock availability.² According to the Corps, the need to repair lock failures has reduced funding available for preventive maintenance. Additionally, many of the locks are too small to accommodate typical tows of fifteen barges; tows must be split in two to pass through, raising barge operators' and thereby shippers' costs. Recent plans by the Corps to enlarge a number of locks and alter lock operations have been among the changes that have received congressional attention.

The operation of the IWS brings up multiple questions for Congress, some of which have been analyzed in previous federal studies. This report provides an overview of the major issues related to inland waterways. Where applicable, it discusses previous federal studies in these areas, with a focus on federal studies conducted in the last 30 years.³ Recent studies are summarized in **Table 1** at the end of this report.

This report includes discussion of the Inland Waterways Trust Fund (IWTF). For additional information on the IWTF, including detailed information on financing proposals currently before Congress, see CRS Report R41430, *Inland Waterways: Recent Proposals and Issues for Congress*, by (name redacted).

Major Issues for Congressional Consideration

Maintaining and modernizing inland waterways as a means of transport for agriculture and heavy industry has proven to be a difficult issue for Congress in a period of fiscal constraint. Three of the major issues related to inland waterways facing Congress—how to balance maintenance needs with plans to increase capacity, how to finance maintenance and improvements, and how to improve management of the inland waterways system—have been subjects of controversy for many years and, as shown in **Table 1**, have been studied previously by the federal government.

¹ Army Corps of Engineers, Waterborne Commerce Statistics Center, <http://www.iwr.usace.army.mil/About/TechnicalCenters/WCSCWaterborneCommerceStatisticsCenter.aspx>.

² Inland Marine Transportation System Capital Investment Strategy Team, *Inland Marine Transportation Systems Capital Projects Business Model*, April 13, 2010, pp. 56-57; http://www.waterwaysusers.us/IMTS_Final_Report_13_April_2010_Rev_1.pdf.

³ Industry and other nonfederal observers have also analyzed these issues and have in some cases arrived at alternative conclusions. However, the focus of the majority of this report and Table 1 are studies paid for and authored by federal entities.

Maintenance Versus Expansion

Reliability is of critical importance to freight shippers. A 2012 study by the federally supported National Academy of Sciences (NAS), requested by the Corps, concluded that the reliability of the IWS is in jeopardy, leading to potential disruption of the nation's raw material supply chain:⁴ "The status quo is a likely future path, but it will entail continued deterioration of the system and eventual, significant disruption in service. It also implies that the system will be modified by deterioration, rather than by plan."

One group of waterway shippers, soybean exporters, has called for redirecting federal funds away from building and expanding the system to preserving and maintaining it. In their words, these users prefer a predictably good IWS over a hypothetical great one.⁵ Other industry stakeholders seek increased federal funding for both maintenance and improvements.⁶

This is not a new debate. A 1983 study by the Corps raised this same policy question. In addition to describing the condition and performance of aging locks, the study asserted that if federal funding levels and allocation policies from the 1970s were to be continued in the 1980s, the result would be improvements to one constraining lock but failure to maintain a safe and reliable system. The report suggested that making the system safer and more reliable would contribute just as significantly to U.S. water transportation capability as adding capacity. It called for making decisions about repair and rehabilitation based on system-wide cost-effectiveness, rather than the traditional project-by-project benefit/cost analysis approach.

Financing the System

Regardless of whether maintenance or expansion is prioritized, recapitalizing the IWS is likely to require significantly higher levels of funding than have historically been provided. In recent years, Congress has appropriated an average of \$500 to \$600 million to the Corps annually to plan, operate, and maintain the IWS and more than \$200 million for new construction and major rehabilitation. Barge carriers using the IWS have contributed on average an additional \$85 million per year via payment of a 20-cent-per-gallon fuel tax deposited into the federal Inland Waterway Trust Fund (IWTF).⁷ This fund is used to pay half of federal construction costs. Fuel tax revenue offsets about 10-12% of overall federal outlays for the IWS.

Legislation introduced in both the House and the Senate in the 113th Congress would, in accordance with the barge industry's preferences, raise the barge fuel tax by six to nine cents per gallon while general tax revenue would assume a greater share of the total cost of inland waterway infrastructure (H.R. 1149/S. 407). The Senate passed a bill (S. 601) that, among other things, would make changes to the inland waterway project delivery process and shift some of these projects to full federal funding (as opposed to cost-sharing).⁸ In prior fiscal years, the

⁴ National Academy of Sciences, "Corps of Engineers Water Resources Infrastructure: Deterioration, Investment, or Divestment?" 2012, p. 4.

⁵ The Soy Transportation Coalition, <http://www.soytransportation.org/newsroom/NewApproach010713.pdf>.

⁶ See for instance, the Waterways Council, <http://waterwayscouncil.org/> and American Waterways Operators, <http://www.americanwaterways.com/>.

⁷ The fuel tax was enacted by the Inland Waterway Revenue Act of 1978 (P.L. 95-502) and increased to its current rate by the Water Resources Development Act of 1986 (P.L. 99-662).

⁸ The Senate Committee on Finance has jurisdiction over the barge fuel tax rate.

Obama Administration proposed replacing the fuel tax with lockage fees that would fluctuate based on the capital needs of the system. For FY2014, the Administration is proposing a vessel fee, in addition to the current fuel tax, estimated to raise an additional \$82 million in FY2014 and \$113 million per year thereafter.⁹

As indicated in **Table 1**, since the fuel tax was enacted in 1978, several federal studies have recommended that waterway users pay a greater share of the system's costs. These studies generally expressed concern that charging users only the current 20-cent-per-gallon tax on fuel results in an allocation of freight among modes based on subsidization levels rather than efficiency criteria. A key question is how much charges on waterway users could be increased without diverting barge traffic to other modes. This could differ among commodities, depending on their value and the practicability of transporting them by rail or truck.¹⁰ Although the barge industry has coalesced around the aforementioned fuel tax increase and shifting a greater portion of construction costs to the federal government, selected users have indicated they would support a larger increase in the fuel tax under certain circumstances.¹¹

All presidents beginning with the Roosevelt Administration in 1940 have advocated greater non-federal responsibility for financing the system in the form of user fees or other involvement. However, Congress has rejected the notion that charges on users should cover the full cost of system maintenance and improvements.¹² Over time, Congress has stated a number of reasons for these positions, some of which are discussed below.

One motivation for Congress in appropriating federal resources for inland navigation improvements, beginning in the late 1800s,¹³ was to provide competition for railroads. This is still a concern for some Members of Congress. In this context, promoting barge transportation that is low cost has been an important consideration. The Corps' estimates of the transportation savings of barge versus the next-cheapest mode (normally rail) are a key element in calculating the benefits of a proposed IWS project.¹⁴ Another guiding criterion for river improvements is that the projects function together as a "system." Requiring local or state governments to contribute

⁹ *Budget of the United States Government for Fiscal Year 2014, Analytical Perspectives*, pp. 209 and 214; <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2014/assets/spec.pdf>.

¹⁰ Larry G. Bray, Chrisman Dager, and Mark L. Burton, "Willingness to Pay for Water Transportation in the Ohio River Basin," *Transportation Research Record*, no. 1871 (2004), pp. 5-12.

¹¹ For instance, the National Corn Growers Association supports up to a 20-cent-per-gallon increase in the fuel tax (i.e. a doubling of the current rate) if the revenue is used for a focused industry-supported plan of infrastructure improvements. See National Corn Growers Association, *2013 Policy and Position Papers*, April 26, 2013, p. 36, <http://www.ncga.com/public-policy/policy-book>.

¹² Linking the level of user charges to the cost of IWS improvements was a key aspect in the debate over legislation initiating the fuel tax. See T.R. Reid, *Congressional Odyssey: The Saga of a Senate Bill*, (San Francisco, CA: W.H. Freeman and Co. 1980), and *A Legislative Background of the Waterway User Charges Legislation During the 95th Congress*, Senate Committee on Environment and Public Works, 95th Congress, 2d Session, Serial No 95-17, October 1978.

¹³ U.S. Congress, Senate, *Report of Windom Select Committee, Select Committee on Transportation Routes to the Seaboard*, April 24, 1874. This report recommended improving river navigation as a means of restraining railroad market power. (The creation of the Interstate Commerce Commission in 1887 had the same objective.)

¹⁴ Army Corps of Engineers, *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies*, March 10, 1983, pp. 49-58, http://planning.usace.army.mil/toolbox/library/Guidance/Principles_Guidelines.pdf; Engineer Pamphlet 1165-2-1, Chapter 12: Navigation (1999), p. 12-3; http://planning.usace.army.mil/toolbox/library/EPs/digest_chapter12.pdf. These estimates have been disputed in other studies.

substantially to the cost of a navigation project could frustrate efforts toward maintaining such a national network, as some states and localities may not wish to (or be able to) contribute to the cost of projects that confer benefits upstream or downstream.¹⁵ Congress has also generally agreed with the argument of barge carriers and shippers that river infrastructure provides public benefits, such as flood control, water supply, power, and recreation, in addition to the private benefits to barge carriers and shippers.

Currently, the IWS fuel tax finances waterway construction on a “pay-as-you-go” basis, with projects being advanced as tax revenue is received. As long ago as 1983, a Congressional Budget Office (CBO) study suggested that waterway user charges might be used more effectively as a repayment mechanism than as a “pay-as-you-go” funding mechanism (see **Table 1**). CBO reasoned that waterway projects are few in number and are feasible to administer individually in this way, with each constructed by debt financing that can be repaid from user charges tailored to specific projects. A second CBO study, also completed in 1983, noted that if construction costs were amortized over the expected life of the facilities rather than paid on a cash-flow basis, a lower tax rate might suffice to cover construction costs and interest payments. This option has not been part of recent discussions about financing inland waterway projects. It would likely entail significant new fees over individual waterway segments, especially for particularly expensive locks or other related projects. Such fees have been adamantly opposed by the barge industry due to their potential to depress traffic on the system as a whole.

Economic Management

Congress may consider whether there are opportunities to further optimize management of federal resources. This could involve evaluating alternative governance models, shifting resources from lightly used facilities, or changing lock operations. Legislation introduced in the 113th Congress seeks to pilot test public-private partnerships as a means of financing and overseeing some IWS projects (H.R. 1153/S. 566).¹⁶ The National Corn Growers Association supports investigating public-private partnerships as a partial or full funding mechanism for IWS improvements.¹⁷ A 2008 Corps study, as cited in **Table 1**, explores alternative waterway governance models that might facilitate private investment in the waterside infrastructure of the system. Two models discussed include privatizing operations and setting up a cooperative. Currently, private investment is primarily limited to shoreside infrastructure, such as piers, conveyors or pipelines, and storage elevators and tanks.¹⁸ The 2008 Corps study also identifies some potential drawbacks of greater private-sector involvement in waterside infrastructure. A 2001 National Academy of Sciences (NAS) study asserts that privatization could be unwieldy given that waterways are put to multiple uses, such as municipal water supply and irrigation, in addition to navigation.

Two NAS studies (2003 and 2012) and a 1983 CBO study suggested that some waterway projects might be better administered by local, state, or regional waterway authorities rather than

¹⁵ For further information on the Corps project selection process, see CRS Report R41961, *Army Corps Fiscal Challenges: Frequently Asked Questions*, by (name redacted) and (name redacted).

¹⁶ In this case, a “public-private partnership” would entail turning a project over to one or more nonfederal entities for management but maintaining existing cost-share requirements.

¹⁷ National Corn Growers Association, *2013 Policy and Position Papers*, April 26, 2013, pp. 33-36; <http://www.ncga.com/public-policy/policy-book>.

¹⁸ The Corps’ inventory of riverside terminals indicates that Fortune 500 shippers own and operate many of these facilities. See Army Corps of Engineers, Institute for Water Resources, Navigation Data Center, *Port Series Reports*.

centralized under the Corps. The studies suggested that these changes could offer more flexibility in partnering with industry or state and local governments for infrastructure investment, as has been demonstrated by coastal port authorities.¹⁹ The 2012 NAS study estimates that non-federal partners pay about 80% of the costs of construction, operation, and maintenance for coastal harbors and channels while the IWS fuel tax covers approximately 8% of the Corps' costs for river navigation facilities. On the other hand, the 1983 Corps study favored retaining federal control over the waterway system. In recent years, no significant proposal for divestiture to nonfederal interests has been considered.

Rather than pursuing wholesale change, the Corps has instituted limited changes to management of its IWS projects with the goal of making the system more cost efficient. Recently the Corps began implementing a plan to reduce lock operating hours at some 60 lock sites.²⁰ Instead of operating locks 24 hours a day, 365 days a year, the Corps is proposing to eliminate operating hours at locks which have no or very little traffic at predictable times. The Corps plans to shift the savings from reducing lock operating hours towards lock infrastructure maintenance.²¹ The possibility of finding savings in lock operating hours has been raised in the past by the Government Accountability Office.²² Another change in lock operating procedure that could potentially save significant resources is adopting lock scheduling practices, as recommended by the 2001 NAS study. This study contends that if barge operators bought and sold "slots" for lock passage as airlines do for airport gates, the efficiency of the IWS could be improved.

Some studies suggest that a significant share of resources can potentially be freed up by divesting little-used segments. Both the NAS 2003 and 2012 studies recommend that resources be shifted from low-use segments to high-use segments. However, the 1983 Corps study estimated that discontinuing or reducing service at low-volume facilities was not likely to achieve significant savings. The Corps has contended that evaluation of traffic levels on less busy tributaries should take into account how many ton-miles (and how much fuel tax revenue) this traffic generates on the mainstem waterways.²³ In other words, the distinction between internal tributary traffic and traffic that originates or terminates on other waterways may be relevant in considering the tributary's value to the total system. While the Corps collects origin and destination points for each shipment, these data are not published, so it is not possible to determine traffic linkages among waterway segments.

¹⁹ Coastal port authorities generally charge their commercial customers port and harbor dues to raise revenue for their local cost-share for waterside infrastructure projects.

²⁰ See <http://www.alabamascenicrivertrail.com/uploadedFiles/File/CommandersGuidanceLOS27Aug2012.pdf>.

²¹ The actual savings from these changes are expected to be relatively limited.

²² GAO, *Opportunities for Large Savings By Altering Some Inland Waterway Operations*, CED-78-12, December 12, 1977.

²³ David V. Grier, "Measuring the Service Levels of Inland Waterways: Alternative Approaches for Budget Decision Making," *TR News*, no. 221, July–August 2002, pp. 10-16.

Table I. Federally Funded Inland Waterway Policy Studies

Suggestions Regarding User Charges and Waterway Management

Report Date	Authorization and/or Author	Report Title (and link)	User Charges	Waterway Management
1983	CBO	Charging for Federal Services http://www.cbo.gov/publication/15511	<p>Estimated the then 8-cent-per-gallon fuel tax recovered 9% of annual Corps spending on the IVWS.</p> <p>Amortization of the construction costs over the life of a facility would greatly reduce a full-cost recovery user charge compared to a cash-based financing rate.</p> <p>Since navigation infrastructure is capital-intensive and a long-lived asset, an amortized-cost approach may be more suitable to inland waterway financing.</p>	<p>“Federal subsidies to the waterway industry effectively lower the cost of barge transportation by nearly 25%, causing shippers to shift from other modes to the waterways, as well as causing competing modes to offer lower rates than otherwise. This preference in turn artificially stimulates demand for continued federal investments in locks, dams, dredging, and the like. The result is a spiral of economic inefficiency.” (pp. 35-36)</p>
1983	CBO, at request of Senate Environment and Public Works Committee	Inland Waterway Financing and the Potential Effects of User Charges (staff working paper) http://www.cbo.gov/publication/15221	<p>User fees now in effect recover approximately 10% of the Corps of Engineers’ costs of operating and maintaining the inland waterway system. Taxes at their present levels do not recover investment costs. Since other, competing modes of transport receive far less subsidy, a move toward full cost recovery appears to offer potential for improving the efficiency of the nation’s transportation system. Such a move would mean substantially higher fees on users, with hardship on some. Thus, Congress might wish to phase in any changes in user charges or to seek less than full cost recovery. (p. 5)</p>	<p>Because waterway projects are relatively few and involve sizable capital investment, Congress may wish to consider initial federal financing of the projects, with subsequent cost recovery. Federal highway and airport programs are financed on a “pay-as-you-go” basis, with concurrent federal financing and cost recovery. That is, user fees are set at a level high enough so that the revenues offset current capital outlays. Such an approach is feasible with highways and airports, in which there are large numbers of capital projects and the administrative costs of treating each individually would be high.</p> <p>With waterway projects, a somewhat modified approach might be effective. If major up-front costs were federally financed, they might subsequently be recovered over a project’s economic life with user charges tailored to specific projects. Doing so would strengthen the tie between investment costs and payments by</p>

Report Date	Authorization and/or Author	Report Title (and link)	User Charges	Waterway Management
1983	CBO	Efficient Investments in Water Resources: Issues and Options http://www.cbo.gov/publication/15239	—	users—thereby increasing economic efficiency. (p. 7) “Today, with a more mature national economy and with most nationally important water projects in place, the need for a strong federal role in new water development is less compelling. The most likely water resources needs – maintenance of existing facilities and new construction of local projects – could be met more efficiently if states, local governments, and direct beneficiaries had a greater responsibility for project costs, financing, and selection.” (p. iii)
1983	Section 158 of WRDA 1976 (P.L. 94-587) Army Corps of Engineers	National Waterways Study – A Framework for Decision Making (includes coastal and Great Lakes waterways) http://catalog.hathitrust.org/Record/002233020	—	Key finding: changes to the status quo are essential if a safe, reliable, and efficient waterway system is to be available in the future. Current funding and allocation (the 1970s decade) will fail to maintain a safe and reliable system but will bring some improvement to system efficiency. Discontinuing or reducing service on low volume projects is not likely to release adequate funds. Recommends (1) regular monitoring and analysis of traffic trends and updates to traffic projections, in part, to better allocate O&M funds, (2) adoption of a “systems” and “cost-effectiveness” approach to replacing and rehabilitating infrastructure (as opposed to the traditional project by project benefit/cost analysis approach), (3) retaining federal authority over waterways (as opposed to greater state authority). Raises the contention that a safe and reliable system contributes just as significantly to U.S. water transportation capability as adding capacity, although somewhat less directly. (p. VI-106-109)

Report Date	Authorization and/or Author	Report Title (and link)	User Charges	Waterway Management
1992	CBO	Paying for Highways, Airways, and Waterways: How Can Users Be Charged? http://www.cbo.gov/publication/13476	Since O&M in the case of waterways is largely a fixed cost (costs do not fluctuate with traffic levels) a user charge should be based mostly on a flat fee that does not fluctuate based on the level of use. The exception would be congested locks, where users could be charged the marginal cost. Estimates a marginal cost for O&M of \$0.0004 per ton-mile. Estimates that the then fuel tax rate of 15 cents per gallon added \$0.0003 per ton-mile to the cost of barge transport.	Since waterway users are not being asked to cover the full cost, the Army Corps receives insufficient economic information about users' priorities for alternative Corps projects, despite the Corps' claim that it gets ample information from users about their priorities and preferences.
1999	Task Force on the Marine Transportation System (Sec. 308 of the Coast Guard Authorization Act of 1998)	An Assessment of the U.S. Marine Transportation System, a report to Congress. http://www.marad.dot.gov/ports_landing_page/marine_transportation_system/MTS.htm	Could not reach consensus on a specific recommendation for funding, but stated that the marine transportation system is the responsibility of both the federal government and private sector and that the need may arise for innovative financing and user fees.	—
2001	National Academy of Sciences, at request of Army Corps of Engineers	Inland Navigation System Planning [:] The Upper Mississippi River-Illinois Waterway http://www.nap.edu/openbook.php?isbn=0309074053	—	In evaluating the benefits of constructing larger locks to accommodate larger tows, the Corps should consider nonstructural alternatives such as scheduling tows through locks to reduce delays and congestion. (pp. 66-71) Under present management practices, shippers and towboat operators are mainly motivated to consider their own costs while neglecting the government's costs. Extending locks rather than adopting lock scheduling practices shifts costs from towboat operators to the government. (p.15) Privatizing inland waterways would be difficult because a private firm controlling navigation

Report Date	Authorization and/or Author	Report Title (and link)	User Charges	Waterway Management
				would be making decisions that affected municipal water supply, recreation, irrigation, flood damage reduction, and environmental quality. Since there are disagreements over the goals to be achieved in managing a waterway, privatization is likely to be met by intense opposition from almost all constituents. (p. 15)
2002	GAO	Marine Transportation: Federal Financing and a Framework for Infrastructure Investments (GAO-02-1033) http://www.gao.gov/products/GAO-02-1033	Federal decision makers should guard against the tendency for private, state, and local stakeholders to seek federal aid as a means of supplanting their investments. Federal funding should be used to promote or supplement private or other public investment rather than used as a substitute. (p. 22)	—
2003	National Academy of Sciences, Transportation Research Board	Freight Capacity for the 21 st Century (special report 271) http://www.nap.edu/catalog.php?record_id=10568	User fees should help defray operation and maintenance costs, in addition to construction costs. Fees need not cover the full costs but should be in the form of congestion fees to promote efficient use. If user fees cannot recover O&M on a segment, these resources should be shifted to higher-use waterways. Other users of waterways should also be assessed a user charge. (p. 132-133)	Rely less on federal management and more on regional authorities to better address conflicts over water use and provide greater flexibility in funding. Shift resources from little-used to high-use waterways. (p. 133)
2007	Energy and Water Development Appropriations FY2006 Conference Report (H.Rept. 109-275) National Academy of Public Administration	Prioritizing America's Water Resources Investments: Budget Reform for Civil Works Construction Projects at the USACE http://www.napawash.org/publications-reports/	—	"The present project-by-project approach, with lagging project completions, on-again-off-again construction schedules, and disappointed cost-share sponsors that do not know what they can count on, is not the best path to continued national prosperity." (p. 8)

Report Date	Authorization and/or Author	Report Title (and link)	User Charges	Waterway Management
2008	Army Corps of Engineers, Institute for Water Resources	Budget Constraints and the Corps Consideration of Public-Private Partnerships: Where is the Money Going to Come From? (no. 08-P-1) http://www.iwr.usace.army.mil/Library/IWRLibrary.aspx	—	<p>“The current government funding is not sufficient to keep up with navigational needs. Public-private partnering may be an alternative for maintaining and improving the inland waterways. The government could engage a private organization to solve this problem. The organization would collect user fees at locks and channels that cover the inland waterway system costs in return for investing, maintaining, and operating the system. Government oversight would ensure safety, water levels, environmental compliance, etc. Alternately, a PPP could be set up with a cooperative. All inland waterway system users could jointly fund or set fees, maintain, and operate the lock system in partnership with the Corps. The users could decide together how to best run the system to reduce costs and improve efficiency. This could be more acceptable than utilizing a profit-seeking company because profit margins would not be an objective. Additionally, stakeholders may be most knowledgeable of potential efficiencies. This partnership would help bring stakeholders into a joint solution rather than top-down approach.” (p. 17-18)</p> <p>Lists potential drawbacks of public-private partnerships such as questionable financial sustainability, liability and risk issues, poor sub-contractors, empowering private lobbying, among others. (pp. 22-24)</p>
2011	National Academy of Sciences, per request of Army Corps of Engineers	Natural Water Resources Challenges Facing the U.S. Army Corps of Engineers http://www.nap.edu/catalog.php?record_id=13136	—	<p>An implication of the large and increasing project backlog is that the demands for federally funded water resources projects are affecting the ability of the federal government to construct such projects reliably and efficiently. The process of partial project funding through the annual appropriations process results in many projects</p>

Report Date	Authorization and/or Author	Report Title (and link)	User Charges	Waterway Management
2012	National Academy of Sciences, per request of Army Corps of Engineers	Corps of Engineers Water Resources Infrastructure: Deterioration, Investment, or Divestment? (prepublication copy) http://www.nap.edu/catalog.php?record_id=13508	Charge waterway shippers more and establish user charges for other users of the waterway system. Estimates that the inland waterway fuel tax covers approximately 8% of Army Corps costs on the IWS while non-federal entities pay about 80% of Army Corps costs for coastal harbors and channels. (p. 33)	moving forward in a piecemeal, stop-start manner. This state of affairs can result in inefficient project delivery and higher overall costs, and may be damaging the Corps' credibility. (p. 16) Divest federal locks and dams on underutilized segments. The model of coastal port administration could offer greater flexibility in financing waterway infrastructure as the private sector and state and local governments partner with the federal government in its development. (pp. 27-43)

Source: CRS analysis.

Notes: Reports listed above are limited to federally funded and peer-reviewed reports since 1978.

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