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Inland Waterways: Recent Proposals and Issues for Congress

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Summary

Inland waterways are a significant part of the nation's transportation system. Because of the national economic benefits of maritime transport, the federal government has invested in navigation infrastructure for two centuries. Commercial barge shippers and other waterway users receive significant support through federal funding for operational costs, capital expenditures, and major rehabilitation on inland waterways. Since the Water Resources Development Act of 1986, expenditures for construction and major rehabilitation projects on inland waterways have been cost-shared on a 50/50 basis between the federal government and commercial users through the Inland Waterways Trust Fund (IWTF). Operations and maintenance costs for inland waterways (which typically exceed construction and major rehabilitation costs) are a 100% federal responsibility.

Future financing for the inland waterway system is uncertain. The IWTF is supported by a $0.20 per gallon tax on commercial barge fuel, but its balance has declined significantly since 2005 due to a combination of increased appropriations, cost overruns, and decreased revenues. Without changes to the current financing system, IWTF spending is likely to be limited.

The Obama Administration recommends replacing the fuel tax with user fees that would increase revenues and potentially allow for more spending on inland waterways projects. Similar to prior administrations, the Obama Administration has regularly submitted proposals to Congress to raise inland waterways user fees. Congress and industry interests have rejected these proposals. In 2010, the Inland Waterways Users Board (IWUB), a federal advisory committee advising the U.S. Army Corps of Engineers on inland waterways, endorsed an alternative proposal that is supported by many barge industry interests. The proposal would increase the fuel tax by $0.06-$0.09 per gallon, but would require the federal government to cover all project costs for dams and rehabilitation that are currently shared with the IWTF. To date, no major changes to the inland waterway financing system have been enacted.

The user industry (including the barge industry and agricultural groups) argues that its recommended changes are necessary to shore up the trust fund, improve deteriorating infrastructure, and distribute costs equitably among beneficiaries (e.g., more funding for dams by federal taxpayer beneficiaries). The Obama Administration agrees that infrastructure upgrades are needed, but argues against shifting these costs to the federal government and instead proposes higher user fees. Some taxpayer and environmental groups favor increasing nonfederal costs not just for construction, but also for operation and maintenance expenses that are not cost-shared.

Changes to inland waterways financing have been enacted in the 113th Congress. The Water Resources Reform and Development Act of 2014 (WRRDA, P.L. 113-121), enacted in June 2014, authorized changes to the project delivery process, altered cost-sharing requirements for some rehabilitation projects, and partially exempted from IWTF cost-sharing requirements a project (the Olmsted Locks and Dam) that has required the majority of IWTF appropriations in recent years. It did not alter the fuel tax or IWTF requirements for other projects. Two other bills in the 113th Congress, S. 407 and H.R. 1149, would attempt to address long-term issues with the IWTF by enacting much of the user proposal, including fuel tax increases of $0.09 and $0.06 per gallon, respectively. In considering legislation related to inland waterways, Congress may consider the appropriate cost share between the federal government and users, the appropriate type of user fee to fund the nonfederal share, preferred funding levels, and other related questions.

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Introduction to U.S. Inland Waterways

Inland waterways are a significant component of the nation's marine transportation system.[1] These waterways carry approximately one-sixth of the national volume of intercity cargo on 25,000 miles of commercially active inland and intracoastal waterways.[2] Included in this total are approximately 12,000 miles of fuel-taxed federal waterways known as the Inland Waterway System (IWS), which are managed by the U.S. Army Corps of Engineers (Corps). These waterways cover 38 states and handle approximately half of all inland waterway freight (or one-twelfth of all national freight).[3] The Corps develops, operates, and maintains the infrastructure of these commercial waterways (e.g., navigation channels, harbors, locks, and dams), and also maintains and regulates the channel depths through dredging and water management.

Costs for maintenance and construction on inland waterways are funded by the Corps (through appropriations) and the commercial user industry (through user fees paid to the federal government). The Corps pays for 100% of the cost for studies and for operations and maintenance on the IWS, while the cost for new construction or major rehabilitation (currently defined as any upgrade in excess of $8 million) is shared equally between the Corps and the commercial industry.

Congress is faced with competing proposals relating to future financing for inland waterway system investments, including who will finance what investments, and at what level. The current revenue source, a set tax on fuel agreed to in the mid-1980s, is insufficient to cover the nonfederal costs of major capital expenditures on inland waterways. This has in some years resulted in federal taxpayers covering more than half of these costs. The ongoing shortfall is currently limiting the number of new and ongoing inland waterway construction projects, and is expected to continue to do so unless changes to the financing system are enacted by Congress.

Recent proposals highlight a number of issues associated with inland waterways. On multiple prior occasions, the executive branch has proposed to phase out the fuel tax in favor of lock usage fees, but these efforts have been rejected by Congress. More recently, the user industry proposed and continues to favor a plan that includes increases to the existing fuel tax in combination with an increase in the overall federal share for inland waterway costs.

Rationale and Statistics

The use of inland waterways for commercial transport predates the founding of the nation itself. Before the onset of rail and highway transport, inland waterways were a primary means of transporting many goods. Through the early 1800s, inland waterway development was left to the states, until the Supreme Court gave the United States authority over interstate commerce in 1824.[4] Shortly thereafter, the federal government began funding and support for waterways to

[1] While harbors maintained by the Corps are a significant part of the U.S. transportation system, the focus of this report is the inland waterway system. For more information on harbors and the Harbor Maintenance Trust Fund, see CRS Report R41042, *Harbor Maintenance Trust Fund Expenditures*, by John Frittelli.

[2] Unless noted otherwise, this report uses "inland waterways" as a shorthand for all inland and intracoastal waterways in the United States (including inland, coastal, and lakewise domestic traffic).

[3] CRS analysis based on data derived from the Army Corps of Engineers waterborne commerce statistics (available at http://www.ndc.iwr.usace.army.mil/wcsc/wcsc.htm), and the Department of Transportation's Commodity Flow Survey for 2007 (available at http://www.bts.gov/publications/commodity_flow_survey/final_tables_december_2009/html/table_01a.html).

[4] *Gibbons v. Ogden*, 22 U.S. 1 (1824).

benefit commerce. Improvements in other forms of transportation (rail and highway) have decreased overall reliance on inland waterways as a means of commercial freight transportation, but these waterways remain a significant part of the nation's transportation mix for many commodities.

Annually, inland waterway traffic on the federal IWS accounts for 4%-5% of total commercial tonnage shipped.[5] While in terms of tonnage, inland waterways are a relatively small part of the nation's overall freight transportation network, waterways remain an important transportation route in some regions of the country, especially those that rely on movement of bulk goods over long distances. In these areas, the percentage of commercial tonnage shipped by barge, especially for specific commodities, is much higher. Along with freight rail, inland waterways are a primary means of transport for the nation's grain and oilseed exports, and for bulk products such as coal, petroleum, chemicals, processed metals, cement, sand, and gravel.

Although previous estimates by the Corps and others projected that inland waterway traffic would increase, actual traffic on inland waterways has remained somewhat flat over the last 20 years in terms of both tonnage and ton-miles.[6] At the same time, overall freight tonnage for all modes of domestic freight shipping increased at an average annual rate of 1.2% from 1997 to 2007, and is expected to continue to increase. The Department of Transportation projects that overall freight tonnage will double over the next 25 years, with inland waterway traffic projected to increase at a rate significantly less than that projected for rail and highway shipping.[7]

The system of fuel-taxed inland and intracoastal waterways is displayed in **Figure 1**. Inland waterway tonnage relative to other modes of freight transit is shown in color in **Figure 2**. As **Figure 2** indicates, almost all of the tonnage (approximately 90%) transported on inland waterways comes through the Mississippi and Ohio River System, primarily through bulk shipping on barges.

Financing Inland Waterways

The federal government invests in inland waterways because of the value of the IWS to the nation. The federal government first began to invest in inland waterways in the early 1800s. Over time, this gave way to a significant federal investment in the form of full funding for investigations, operations and maintenance, and construction costs funded through the U.S. Army Corps of Engineers. However, legislation in the 1970s and 1980s changed this system and created user cost-sharing requirements for a subset of these costs.

[5] Inland waterway totals do not include coastwise or lakewise traffic. The most recent (2007) Department of Transportation Commodity Flow Survey estimated that all modes of shipping (including truck, rail, water, air, and pipeline) totaled 12.5 billion tons in 2007.

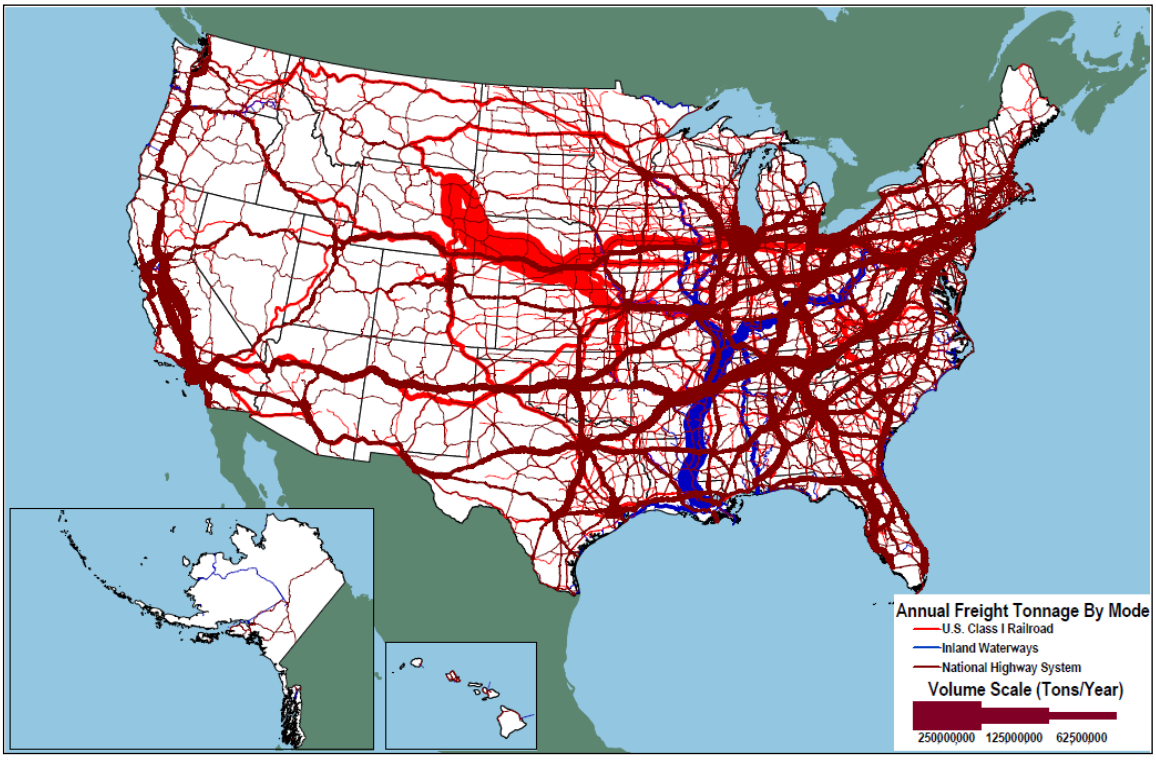
[6] For waterway commerce trends since 1991, see U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center, *Waterborne Commerce of the United States, Calendar Year 2010, Part 5- National Summaries*, pages 1-11 and 1-12.

[7] U.S. Department of Transportation, *Freight Analysis Framework: Freight Facts and Figures*, 2009, http://ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/docs/09factsfigures/table2_1.htm.

Figure 1. Fuel-Taxed Inland Waterway System

Source: Inland Marine Transportation System, Capital Projects Business Model, April 13, 2010.

Figure 2. Relative Tonnage on Highways, Railroads, and Inland Waterways, 2002



Source: U.S. Department of Transportation, Freight Facts and Figures, 2008.

Previous Legislation: 1978 and 1986

Two pieces of legislation transformed inland waterway financing and created the framework for the current system: the Inland Waterways Revenue Act of 1978 (P.L. 95-502, 26 U.S.C. §9506) and the Water Resources Development Act (WRDA) of 1986, as amended (P.L. 99-662, 26 U.S.C. §4042). These two laws underpin the current financing system for Corps inland waterway projects. Prior to these laws, investments had been entirely funded by the federal government as a result of established policies (see box below). Together, the acts of 1978 and 1986 established a fuel tax on commercial barges, cost-share requirements for inland waterway projects, and a trust fund to hold these revenues and fund investments in construction. The overall effect of these changes was a greater financial and decision-making responsibility for commercial operators on the inland waterway system.

Inland Waterways Revenue Act of 1978

The Inland Waterways Revenue Act of 1978 was the original law establishing user fee requirements for commercial waterway shipping, and much of the debate leading up to that bill's passage is still relevant today.[8] For 40 years prior to passage of this law, successive administrations and congressional sponsors had tried and failed to institute user fees on barge traffic to increase equity among transportation modes and across various regions of the country. These efforts failed, primarily because, over time, Congress had developed a strict policy of no user fees on inland waterways.[9]

The 1978 bill was revised significantly from earlier versions in the House and Senate. The barge industry initially opposed any form of tax or user fee on the aforementioned policy basis. Advocates for a user fee, including the bill's sponsors, had initially proposed a much higher fee on lock usage (enough to raise approximately $350 million a year in nonfederal revenues). The sponsors also proposed that user fees be tied to overall expenditures on inland waterways (i.e., user fees would go up automatically when expenditures on construction went up).[10]

In the final version of the legislation, the lock usage fee was replaced with a fuel tax that would generate significantly less on an annual basis. Additionally, as part of the negotiations between the bill's sponsors and the waterway industry, the capital recovery mechanism was replaced with a more indirect tie between revenues and overall expenditures in the form of a dedicated trust fund. While the trust fund would hold user revenues for the explicit purpose of inland waterway investments, the fuel tax itself was not tied to expenditures out of the trust fund.

The federal policy of taxing fuel on commercial barge traffic was codified in the Inland Waterways Revenue Act of 1978.[11] The act of 1978 also established the Inland Waterways Trust Fund (IWTF), which was initially funded by this fuel tax ($0.04 per gallon, beginning in FY1980, gradually increasing to $0.10 per gallon in FY1986), and established those waterways that are subject to the tax.[12] However, no appropriations were authorized from the IWTF until later, in WRDA 1986.

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[8] Efforts to secure passage of this legislation were the primary subject of series of articles in *The Washington Post*, as well as a book on the issue. See T. R. Reid, *Congressional Odyssey: The Saga of a Senate Bill* (San Francisco, CA: W.H. Freeman and Company, 1980).

[9] This policy dated to the Northwest Ordinance of 1787, in which Congress declared that certain inland waterways "shall be common highways and forever free ... without any tax, impost, or duty therefore."

[10] For more information on this argument, see the "Funding for Proposed Investments" section of this report.

[11] See box, "Inland Waterway Revenue Act of 1978." While the IWTF first received revenues in 1980, Congress did not authorize appropriations from the fund before WRDA 1986. The fund initially had a balance of $260 million before any other appropriations were made.

[12] A list of waterways currently subject to the fuel tax is available through the *Federal Register* (26 C.F.R. §4042,

WRDA 1986 authorized additional increases to the 1978 act's fuel tax, which were set to rise to the current level of $0.20 per gallon beginning in 1994.[13] (See **Table 1** for the full schedule of tax increases.) Similar to the initial tax under the 1978 act, this tax was not indexed for inflation. Significantly, WRDA 1986 also laid out a cost-sharing process for inland waterway expenditures: it stipulated that inland waterway construction projects would be funded on a 50/50 basis, with 50% of the funds required for construction coming from the IWTF and the remaining 50% funded by the Treasury's General Revenue (GR) fund.[14] On the other hand, operations and maintenance (O&M) costs were to remain a 100% federal responsibility.

Table 1. Fuel Taxes on Inland Waterways

(taxes under 1978 and 1986 acts)

Date[a]	Tax per Gallon
October 1, 1980-September 30, 1981	$0.04
October 1, 1981-September 30, 1983	$0.06
October 1, 1983-September 30, 1985	$0.08
October 1, 1985-December 31, 1989	$0.10
1990	$0.11
1991	$0.13
1992	$0.15
1993	$0.17
1994	$0.19
After 1994	$0.20

Source: Inland Waterways Revenue Act of 1978 (P.L. 95-502) and WRDA 1986 (P.L. 99-662).

a. Tax levels preceding 1990 were set in P.L. 95-502 and were adjusted based on fiscal years, while post-1990 levels were set in P.L. 99-662 and were based on calendar years.

Under WRDA 1986, expenditures from the IWTF on a construction project are not automatic. They must be first authorized by Congress and then funded in annual discretionary appropriations. WRDA 1986 authorized an initial round of projects to be funded by the IWTF, and subsequent Water Resources Development Acts passed by Congress have authorized additional projects. Pursuant to the WRDA requirements, appropriations for these projects have been made by Congress in annual appropriations bills (see next section, "Inland Waterways Trust Fund: Trends and Issues Since 1986," for additional information on funding trends).

As previously mentioned, WRDA 1986 retained the policy of 100% federal funding for inland waterway costs besides construction and major maintenance (i.e., expenditures for studies and operations and maintenance costs less than $8 million).[15] While not technically part of the IWTF, the amount of federal dollars spent on O&M typically exceeds the amount spent on construction

Subpart G).

[13] 33 U.S.C. §201. The tax was gradually increased from $0.10 per gallon in FY1986 to $0.20 cents per gallon after 1994. This tax has stayed at $0.20 cents per gallon since 1994, and is not indexed for inflation.

[14] 26 U.S.C. §9506 (C)(2).

[15] 33 U.S.C. §2212

and major rehabilitation by a significant amount, and is often part of policy discussions related to inland waterways.[16]

WRDA 1986 also established the Inland Waterways Users Board (IWUB), a federal advisory committee subject to the Federal Advisory Committees Act.[17] Section 302 of WRDA 1986 stipulates that the board be made up of 11 members representing shipping interests on the primary geographical areas served by inland waterways, with due consideration given to tonnage shipped on the respective waterways.[18] The board was established to give commercial users an opportunity to inform the priorities for federal decision-making on IWTF projects. It meets regularly three times a year to develop and make recommendations to the Secretary of the Army and Congress regarding these investments.[19]

Inland Waterways Trust Fund: Trends and Issues Since 1986

Between 1986 and 2011, the IWTF balance has varied considerably. Beginning in 1992, balances increased, reaching their highest level, $413 million, in 2002. On multiple occasions, the executive branch (through the Clinton Administration in 1996 and the Bush Administration in 2004) proposed to further increase fees on the user industry and require the IWTF to also fund some portion of operations and maintenance expenditures (in addition to the construction and major rehabilitation requirements). These proposals were not enacted by Congress.

Beginning in FY2005, appropriations from the IWTF increased significantly as the Bush Administration requested and Congress appropriated greater investments in IWTF-funded projects. These increasing expenditures significantly exceeded annual fuel tax collections going into the IWTF and interest on the IWTF balance.[20] (See **Figure 3**.) Additionally, some projects significantly exceeded their original cost estimates, further stressing the trust fund.[21] As a result, balances fell sharply from 2005 to 2010.

In an effort to reduce stress on the IWTF and prevent the balance from falling to unsustainable levels, Congress has taken a number of "stopgap" measures in previous years. For instance, Congress exempted major rehabilitation projects from their usual cost-sharing requirements in the continuing resolution for FY2009 (P.L. 110-329) and limited the projects with access to the IWTF in regular appropriations for FY2009 (P.L. 111-8). Congress also provided inland waterway projects with more than $400 million in construction funding under the American Recovery and Reinvestment Act (ARRA, P.L. 111-5), and exempted this funding from IWTF cost-share requirements. These measures limited the costs to the IWTF for ongoing projects, while also allowing for the completion of these projects. More recently, Congress prohibited the Corps from entering into new contracts requiring IWTF funding since FY2009, and has limited enacted

[16] In recent years, O&M costs on inland waterways have averaged more than $500 million annually.

[17] 5 U.S.C., Appendix §2.

[18] P.L. 99-662, §302. A map of geographical areas and additional information about current representatives is available at http://waterwaysusers.us/BoardMembers.htm.

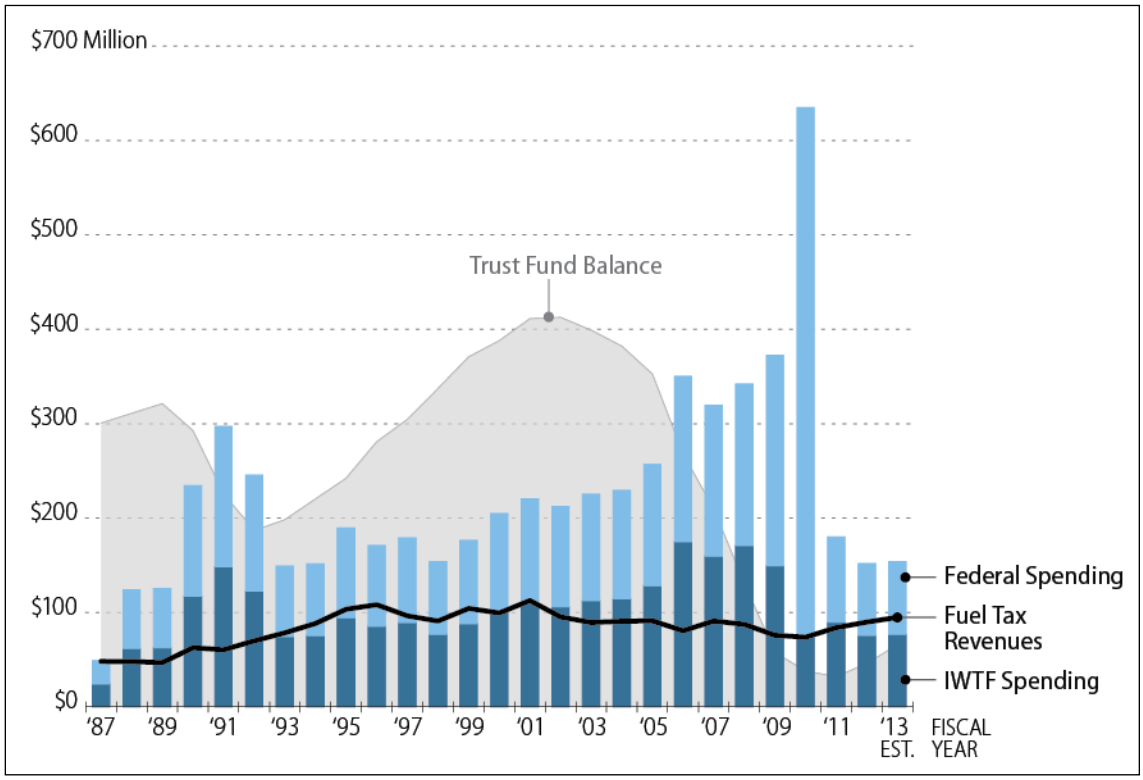
[19] The board is composed of 11 members selected by the Secretary of the Army, and typically meets three times a year to develop and make recommendations to the Secretary regarding construction and rehabilitation priorities and spending levels. Recommendations by the IWUB are transmitted to Congress in an annual report.

[20] For instance, in FY2007 $171 million was spent from the IWTF, while only $88 million in tax revenues were received. The increased investment in inland waterway projects was endorsed by the IWUB.

[21] A 2008 report by the Corps studied this issue at several locations. See U.S. Army Corps of Engineers, Great Lakes and Ohio River Division, *Inland Navigation Construction, Selected Case Studies*, U.S. Army Corps of Engineers, White Paper, July 17, 2008.

appropriations from the IWTF to expected fuel tax revenues for the coming year. Due in part to these stopgap measures, the trust fund balance appears to have stabilized. A summary of these trends is provided in **Figure 3**.

Figure 3. Federal Inland Waterway Projects: Financing Trends, FY1987-FY2013



Source: Army Corps of Engineers Data, adapted by CRS.

Notes: Funding amounts are in nominal dollars and represent funding for construction only. Federal spending for FY2009 and FY2010 reflects congressional "stopgap" measures and supplemental funding under ARRA (P.L. 111-5).

Without changes to IWTF financing, funding for new projects is expected to be extremely limited in the foreseeable future, with most of the funding expected to go to one project, Olmsted Locks and Dam on the Ohio River.[22] Such a scenario would likely increase the current project backlog for Corps inland waterways projects. Long-term options and proposals to address this situation are discussed in the section below, "Inland Waterway Financing Proposals."

Concerns with IWTF Planning and Oversight

In addition to problems with the IWTF financing system, other concerns have been raised in recent years. Specifically, fuel tax payers (represented by the IWUB) have registered complaints related to structural inefficiencies and inequities in the Corps project planning process for inland waterways investments. Many users note that in the past, decisions within the executive branch have led to what some consider inefficient project implementation and use of tax dollars (in the

[22] In recently enacted appropriations, almost all IWTF funding has been for the Olmsted project. According to the Corps, absent any changes to project cost-sharing requirements by Congress, the majority of IWTF appropriations are expected to go to the Olmsted Lock and Dam Project on the Ohio River for the foreseeable future. For additional information on this project, see below section, "Concerns with IWTF Planning and Oversight."

form of cost escalation and schedule delays on some IWTF projects). As a partial response to these concerns, in FY2006 the Corps implemented several reforms to its project delivery process, including implementation of risk-based cost estimates and prioritized funding for projects with a high risk of cost overruns. While the IWUB generally recognized these changes as improvements, many continue to advocate for additional structural reforms to the planning process (see below section, "Inland Waterways Users Board Proposal").

Some highlight cost overruns and project planning issues at one project in particular, the Olmsted Locks and Dam project, as evidencing ongoing needs for reform associated with planning and oversight of the IWTF. The estimated cost for the Olmsted project has increased significantly over time, in part due to major changes to the project's design and method of construction. The previously authorized cost of $775 billion (authorized in P.L. 100-676 in 1988) was increased to $2.9 billion in the FY2014 continuing resolution enacted on October 16, 2013.[23] As of January 1, 2013, the project was 49% complete.[24] As of 2013, the lock components of the project were complete. The dam and demolition components of this project are expected to be completed in 2020 and 2024, respectively.[25]

Inland Waterway Financing Proposals

Concerns related to the solvency of the IWTF and the equity of the financing system for fuel-taxed inland waterways have led to a number of recent proposals, first by the Bush Administration in 2008, then by the Obama Administration in 2009 and 2010. While these proposals were rejected by Congress, the Administration has recently presented Congress with a new recommendation that would raise revenues for the IWTF. The user industry, represented by the IWUB, recently adopted its own proposal, which differs significantly from the Administration's proposal. The user proposal would implement an increase to the current fuel tax, while also requiring an increased federal share for some inland waterway investments (e.g., dams).

Executive Branch Proposals

Past Administrations, including both the Bush and Obama Administrations, have submitted various proposals to increase commercial user fees on inland waterways. The most recent of these proposals are discussed below.

Bush Administration

In response to concerns regarding a potential IWTF shortfall, the Bush Administration in 2008 submitted a legislative proposal to Congress that would have instituted a lock usage fee to replace

[23] This change was proposed in the FY2014 President's budget request and was included in both the House and Senate appropriations bills for FY2014. The change in the authorized cost was required for the project to go forward pursuant to Section 902 of the Water Resources Development Act of 1986 (33 U.S.C. §2280). For more information about project cost increases and related requirements under Section 902 of WRDA 1986, see CRS Report R41243, *Army Corps of Engineers: Water Resources Authorizations, Appropriations, and Activities*, by Nicole T. Carter and Charles V. Stern.

[24] U.S. Army Corps of Engineers, *FY2014 Congressional Justifications.* p. LRD-31.

[25] More information about this project is available at http://www.lrl.usace.army.mil/Missions/CivilWorks/Navigation/LocksandDams/OlmstedLocksandDam/.

the fuel tax and generate additional revenue for the IWTF beginning in FY2009.[26] The fee proposed to phase in charges to commercial barges of $50-$80 per lockage through the end of calendar year 2012 for lock chambers greater than 600 feet in length, and $30-$48 for chambers less than 600 feet. (See **Table 2**.) Additionally, it proposed to tie IWTF balances to this user fee after the end of 2012 by raising lockage fees when the IWTF balance fell below $25 million, and lowering fees when the balance rose above $75 million.[27]

Table 2. Bush Administration Lock User Fee Proposal

Date	Fee for Locks Greater than 600 Feet in Length	Fee for Locks Less than 600 Feet in Length
Oct. 1, 2008-Sept. 30, 2009	$50 per barge	$30 per barge
Oct. 1, 2009-Sept. 30, 2010	$60 per barge	$36 per barge
Oct. 1, 2010-Sept. 30, 2011	$70 per barge	$42 per barge
Oct. 1, 2011-Dec. 31, 2012	$80 per barge	$48 per barge
After Dec. 31, 2012	As provided for in legislation[a]	As provided for in legislation[a]

Source: Legislative proposal by the Department of the Army, Office of the Assistant Secretary for Civil Works, April 4, 2008.

a. Pursuant to subsection 2(b) of the proposed legislation, if the balance of the IWTF fell below $25 million, then the fee for lockages would have automatically increased from the 2012 levels ($10 more per lockage for large locks, $6 more per lockage for small locks). Similarly, if the balance of the IWTF rose above $75 million, then fees would have automatically decreased by these same amounts.

At the time, the Bush Administration argued that an approach which shifted the focus of user fees toward lock users would improve equity in waterborne commerce investments, since locks account for most IWS capital construction expenditures. Both the House and Senate appropriations committees rejected this approach, noting that a lock fee would pose an unacceptable burden on lock users, who would pay considerably more under the Bush proposal than they currently pay.[28] Congress instead provided temporary relief through stopgap measures (as previously mentioned) and requested that the executive branch revisit its approach.

Obama Administration

The Obama Administration's budget requests to Congress have each proposed some form of new user fee for inland waterways. The FY2010 budget included a proposal similar to the aforementioned Bush Administration proposal, with the only major change being an option for the Corps to further increase fees at high-traffic locks. The Administration argued that such a fee would increase both efficiency (by reducing traffic at these locks) and revenues.[29] In its consideration of FY2010 appropriations, Congress rejected the proposal.[30] More recent Obama Administration budgets have continued to propose user fees to replace or supplement the fuel tax,

[26] The FY2009 budget requests assumed additional revenue based that would have resulted from an enacted bill.

[27] A similar mechanism, also referred to as "capital recovery," was proposed in the original 1978 inland waterway bill but was not included in the final bill. See above section, "Previous Legislation: 1978 and 1986."

[28] U.S. Congress, House Committee on Appropriations, *Omnibus Appropriations Act, 2009 (P.L. 111-8)*, committee print, 111th Cong., 1st sess., March 2009 (unnumbered) (Washington: GPO, 2009), pp. 591-592.

[29] In contrast to the Bush Administration, the Obama Administration did not assume the revenues associated with this proposal in its annual budgetary baselines.

[30] H.Rept. 111-278 (conference report on P.L. 111-85), p. 58.

while at the same time requesting an appropriation level based only on current-year expected fuel tax revenues ($75 million-$95 million in recent years). Congress has generally rejected the user fee proposals, but has agreed with the Administration's approach of limiting revenues in lieu of a long-term solution for inland waterways financing.[31] Most recently, the FY2013 and FY2014 budgets each assumed approximately $80 million in new revenues resulting from an unspecified inland waterway user fee (potentially similar to the system described below). To date, none of these proposals have been enacted.

In addition to the aforementioned budget proposals, the 2011 Obama Administration plan for deficit reduction included a new inland waterway financing structure among its recommendations to Congress.[32] The proposal was notable for its specificity, as it included more detail than most of the aforementioned budget proposals. The Administration proposed to maintain the existing fuel tax and institute a "two-tier" annual fee for commercial shippers that would be set by the Corps to achieve a revenue target. Under the proposed structure, all inland waterway shippers would be subject to a new annual fee in addition to the existing fuel tax. Vessels using inland waterway locks would pay a higher fee than those not using locks. In its proposed legislation that would have instituted this fee, the Administration did not specify an amount for the fee, but instead stipulated revenue targets to be achieved, which are shown in **Table 3**.

The Obama Administration estimated that the 2011 proposal would result in approximately $1 billion in additional revenues for the IWTF over 10 years. While the balance of IWTF receipts available for appropriation would increase under this plan, the overall cost share between the General Revenue Fund of the Treasury and the IWTF would not change.[33] The Obama Administration proposal included several other changes associated with the IWS, including the addition of 39 individual segments of varying lengths to the existing inland waterway system. Most of these proposed new segments are contiguous with the current system of inland waterways, but are not likely to achieve significant new revenues.[34] As was the case with the aforementioned budget proposals, this fee was opposed by the user industry and was not enacted.

Table 3. Obama Administration Proposal: Inland Waterways Fees

Fiscal year	Total Receipts Required to Result from New Fees
FY2012	No less than $35 million
FY2013	No less than $75 million
FY2014-FY2021	No less than $900 million total
FY2022 and thereafter	Such fees/receipts as are necessary to maintain an IWTF balance of $50 million-$150 million

Source: 2011 Obama Administration Proposal: Inland Waterways Capital Investment Act.

[31] Notably, recent appropriations report language has stated that if the Administration and relevant authorizing committees do not advance a satisfactory solution soon, then appropriators might be forced to act. See for example, S.Rept. 112-75, 112th Cong., 1st session, p. 11.

[32] Office of Management and Budget, *Living Within Our Means and Investing in the Future: The President's Plan for Economic Growth and Deficit Reduction*, Washington, DC, September 2011, pp. 32-33, http://www.whitehouse.gov/sites/default/files/omb/budget/fy2012/assets/jointcommitteereport.pdf.

[33] Similar to ongoing appropriations for inland waterways, these appropriations would be subject to discretionary budgetary allocations and would have to compete with other priorities.

[34] The Administration did not include estimates for the additional revenues (either from the annual fees or the fuel tax) resulting from the addition of the new segments. According to barge interests, many of these waterways are not significant contributors to inland waterway commercial traffic.

Notes: The proposal assumed a "two-tier" fee in addition to the current fuel tax. It would levy a different fee on lock users than other commercial users. The exact structure of these fees would be determined by the Corps.

Inland Waterways Users Board Proposal

In 2010, the Inland Waterways Users Board (IWUB) adopted and transmitted to Congress a proposal of its own.[35] The report of its Inland Marine Transportation Systems Capital Investment Strategy Team, *Inland Marine Transportation Systems Capital Projects Business Model* (hereinafter referred to as the IWUB report), has come to represent the preferred alternative of the inland waterway user industry and has been introduced as legislation in the 112th and 113th Congress (see below section, "Issues for Congress").[36] Although the report was prepared at the request of the IWUB and credited participation by some Corps employees, it was not formally endorsed by the Corps or the Administration, and many of its primary recommendations have been opposed by the Obama Administration.

Based on its own research and analysis and input by some Corps employees, the IWUB report recommended a new financing system and a number of other proposed changes for inland waterways. The report's primary recommendations can generally be divided into four categories:

- **Increase User Fees.** Increase the existing IWTF fuel tax by $0.06-$0.09 per gallon (30% to 45% above the current tax of $0.20 per gallon). The exact increase would depend on future fuel tax revenues.
- **Increase the Federal Share of Inland Waterway Costs.** Modify the subset of inland waterway investments subject to IWTF cost-share requirements (see **Table 4**) and make a corresponding overall shift to a larger portion of IWTF projects being funded solely by the General Revenue fund.
- **Increase Overall Spending on Inland Waterways.** Increase the overall investment on inland waterways.
- **Other Recommendations.** Increase IWUB involvement in project planning and construction, and other recommendations, including the promulgation of regulations that would formally adopt the report's prioritization criteria.

Table 4. Comparison of Existing and IWUB-Proposed Cost Shares for Inland Waterway Construction

	Source for Construction Funding	
	Current[a]	**IWUB Proposal**
New Lock Construction	50% IWTF; 50% GR	50% IWTF; 50% GR
Lock Rehabilitation[b]		
Less than $8 million	100% GR	100% GR
$8 million-$99 million	50% IWTF; 50% GR	100% GR
$100 million or more	50% IWTF; 50% GR	50% IWTF; 50% GR

[35] *Inland Marine Transportation Systems (IMTS): Capital Projects Business Model*, Final Report: Revision 1, April 13, 2010, http://www.waterwayscouncil.org/WCIExtras/IMTS_IWUB_Report.pdf.

[36] The IWUB commissioned the report and adopted its contents, with reported participation by Corps staff (although the Corps and the White House did not endorse the report's final recommendations). In addition to the IWUB, the report was endorsed by multiple industry consortiums, including the Waterways Council, Inc., the American Waterways Operators, and the National Waterways Conference, Inc. See http://www.waterwayscouncil.org/index/capitalplansupport.pdf for a full list of endorsements.

	Source for Construction Funding	
Dams	50% IWTF; 50% GR	100% GR
All Cost Overruns	50% IWTF; 50% GR	100% GR

Source: *Inland Marine Transportation Systems Capital Projects Business Model*, Final Report. April 2010.

Notes: GR: General Revenue fund, IWTF: Inland Waterways Trust Fund.

a. The Administration's lockage fee proposal would continue current cost-shares with the IWTF (as previously noted, the significant change would be to the means through which IWTF revenue is raised, not the cost-share itself).

b. The IWUB proposes to change the definition of what constitutes "major rehabilitation." Under the current system, major rehabilitation (i.e., projects subject to cost-sharing) is any rehabilitation project in excess of $8 million. The IWUB proposes to revise this definition to only include projects of $100 million or more.

Increase User Fees

The most prominent component of the IWUB report is a proposed increase to the inland waterway fuel tax rate (currently $0.20 per gallon) of between $0.06-$0.09 per gallon. The increase would depend on actual fuel tax collections over the next several years (i.e., if collections are below recent averages, the tax would be higher). Overall, the report projects that the new tax level would generate approximately $112 million per year in fuel tax revenues for the IWTF, an increase over revenues from the last 10 years (approximately $85 million annually). Despite this increase, most of the new revenue would not be spent until future years, which would allow the IWTF to replenish its balances. As was the case with the original tax of $0.20 per gallon, the proposed increase to the fuel tax would not be indexed for inflation and would not include a capital recovery mechanism linking future taxes to expenditures.

Increase the Federal Share of Inland Waterway Costs

The IWUB report also proposes to shift more of the cost for inland waterway projects toward the federal government by increasing the number of investments on inland waterways that are funded solely by the federal government and decreasing the projects that are subject to 50/50 cost-sharing. Under the report's recommendations, all dam-related expenses (construction and rehabilitation), as well as rehabilitation projects on locks with costs less than $100 million, would be exempt from WRDA 1986 cost-sharing requirements.[37] The IWUB report also proposes to establish a "cap" on the use of IWTF funds at authorized levels to discourage construction cost overruns. Critics point out that this is an additional hidden cost, as currently all cost overruns are funded equally between the federal government and the IWTF.[38] Cumulatively, these changes would affect the overall cost-share for IWTF projects. The subset of projects no longer requiring cost sharing under the proposal would in effect increase the overall federal share for new and major rehabilitation investments over the next 25 years from current levels (50%) to approximately 70% for the same subset of projects.[39] Differences between the current arrangement and the report's proposals are outlined by project type in **Table 4**.

[37] As noted previously, the current definition for "minor" lock rehabilitation (i.e., 100% federal lock funding) is any rehabilitation project less than $8 million.

[38] See final paragraph of this section for more information on efforts to address cost overruns.

[39] Based on CRS analysis of Corps documents. The IWUB report outlines a general program of $380 million per year for investments, including $270 million in federal contributions and $110 million in IWTF contributions (in effect a 71/29 cost share compared to current requirements). However, according to the Corps, the actual cost to implement the proposed portfolio would result in less cost overall and a slightly different cost share compared to current levels (68/32 cost share compared to current requirements).

Increase Overall Spending on Inland Waterways

The IWUB report proposes an overall increase in funding for inland waterways, including increases in funding both from the IWTF and the General Revenue fund. As proposed in the IWUB report, full funding for this suite of investments requires that annual expenditures (from the GR fund and the IWTF) average approximately $380 million, a significant increase over historical averages.[40] This would necessitate an increase above average total expenditures since 1994, which have been approximately $234 million annually, and a significant increase over FY2011 expenditures, which were estimated to be approximately $170 million under the aforementioned "stopgap" measures.

In the immediate future, most of the increase needed to fund the proposed portfolio of $380 million per year would be derived from the GR fund (in order to allow the trust fund balance to rebuild). For instance, to meet the IWUB proposal's requirements over the first five years, federal funding would need to be $1.33 billion, or 74% of the total funding required for the report's proposed projects over this time period. Around 2020, the proportion of funds derived from the trust fund would gradually increase, although federal requirements would still exceed 50% of the required investments. Although the report calls for an increased investment from both sources, on the whole, more new funding would be required from the federal government (through the GR fund) than the IWTF. Expected trends under the user proposal are shown in **Figure 4**.

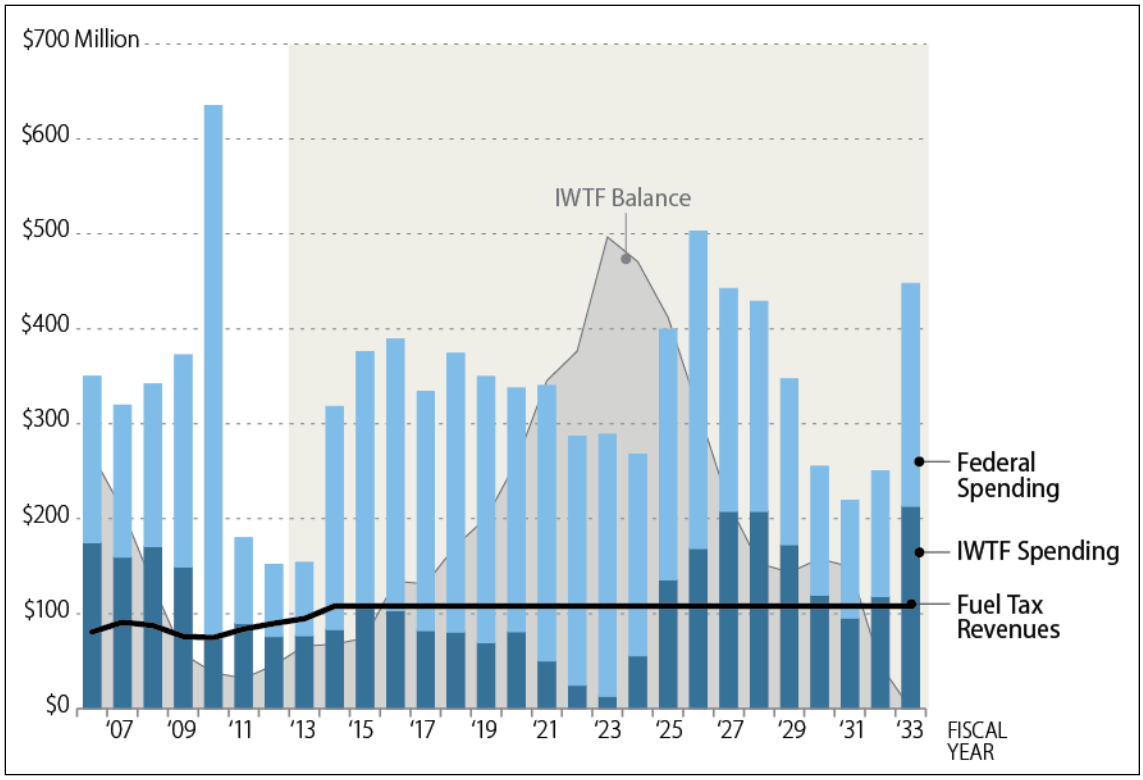
Other Recommendations

The report proposed several reforms for improving cost-effectiveness of IWTF projects overseen by the Corps.[41] These recommendations would increase the involvement of the IWUB in the Corps project delivery process for IWTF investments, thereby expanding the board's current roles and responsibilities. The report recommends appointing IWUB representatives to the project design teams for individual projects, where they would oversee planning for IWTF investments and report back to the IWUB. The report also recommends obtaining sign-off from the IWUB on plans for projects funded by the IWTF, as well as providing the IWUB with status updates on all relevant project planning documents. The IWUB seeks these changes as representatives of the nonfederal cost-sharers. However, the degree of involvement by nonfederal entities in development of studies by a federal agency could raise concerns related to conflicts of interest and whether the federal government may lose control of the planning process.

[40] See IWUB report, p. xiii.

[41] The full list of 21 project-based recommendations (including those already being implemented) can be found on pp. xiii-xv.

Figure 4. Inland Waterways Projects: Projected Trends under IWUB Proposal



Source: CRS adaptation of Corps projections, as proposed in the 2010 Inland Marine Transportation Systems Capital Projects Business Model.

Notes: The original IWTF proposal assumed implementation beginning in FY2011. FY2013 separates actual values to date from CRS estimates based on the previous IWUB proposal. Projections for federal spending do not include any potential cost overruns, which would be funded as a 100% federal expense under the proposal. Fuel tax revenues based on IWUB proposal projections $112 million/year.

The IWUB report also delineated a list of specific projects to receive funding once its proposed changes to the IWTF financing system are made. According to the report, projects were prioritized for selection based on a number of factors, including asset condition, likelihood of diminished performance, consequence of diminished performance, and the degree to which new projects would improve system performance.[42] The report did *not* propose mandatory funding for these projects. That is, the final decision on whether projects in the list would receive funding would still need to be made by Congress in the annual appropriations process (or by the Corps when it allocates discretionary appropriations for a given year that are not specified at the project level by Congress). The proposal attempts to render selection of these projects more likely by recommending that the Corps promulgate selection criteria for inland waterway projects that are similar to those used in the report.

Other Proposals: Increase User Share of Costs

In the past, some have advocated for changes that would shift costs away from the federal government and increase the user-financed share of inland waterway costs, by decreasing the federal share of either O&M (currently 100% federal) or construction (currently 50% federal). These groups have pointed to inequalities in spending relative to the value of certain segments of

[42] IWUB report, p. viii.

the inland waterway system. An analysis by the Congressional Budget Office (CBO) in the early 1990s found that the current uniform tax throughout the inland waterway system failed to cover fixed operational costs and thus distorted the actual costs of maintaining the system. CBO concluded that a user fee structure that recovered the true costs for inland waterway operations would increase economic efficiency of the system.[43] Such a fee would result in increased costs for waterways with low traffic-to-expense ratios, since federal costs for maintaining these waterways are greater than fuel tax receipts currently generated. **Figure 5** shows estimated fuel tax revenues on major inland waterway segments relative to O&M costs and ton-miles.

Several entities have pushed for significant increases to inland waterway fees as a means to achieve savings to the federal government. Recent proposals include the following:

- A coalition of taxpayer watchdog and environmental nongovernmental organizations recommended in its 2011 "Green Scissors" report that Congress increase user contributions for inland waterway expenditures. The report estimated savings from this proposal to be $1 billion over the next five years.[44]
- The National Commission on Fiscal Responsibility and Reform included in its initial list of illustrative savings a proposal to make the inland waterways "self-funding." The commission estimated $500 million in savings from this proposal over the next five years.[45]
- In its 2011 budget options report, CBO included a proposal to increase user fees on inland waterways to a level sufficient to cover the costs of construction, operations, and maintenance. CBO projected that such a change would save approximately $4 billion over a 10-year horizon.[46]

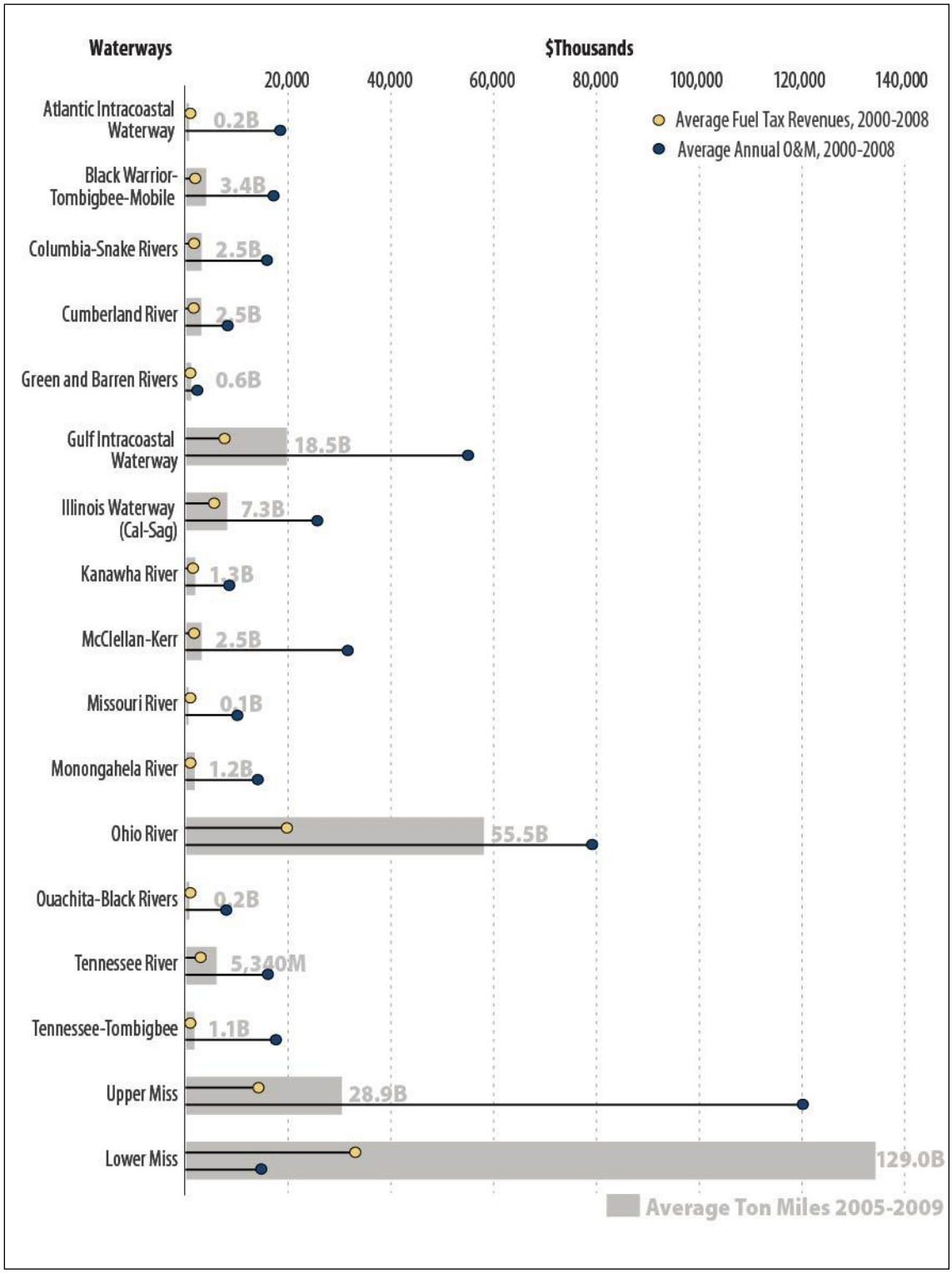
[43] See Congressional Budget Office, *Paying for Highways, Airways, and Waterways: How Can Users Be Charged?*, Washington, DC, May 1992, pp. 53-71, http://www.cbo.gov/ftpdocs/32xx/doc3249/1992-Transportation.pdf. Hereinafter "CBO User Charge Report."

[44] This report also recommended elimination of federal funding for the Inland Waterway Users Board, at a savings of $1.7 million per year. See Taxpayers for Common Sense, Friends of the Earth, Public Citizen, and the Heartland Institute, *Green Scissors: Cutting Wasteful and Environmentall Harmful Spending*, 2011, pp. 23-24, http://greenscissors.com/wp-content/uploads/2011/08/Green_Scissors_2011.pdf.

[45] The commission did not provide backup information for this savings estimate. The proposal is available at http://www.fiscalcommission.gov/sites/fiscalcommission.gov/files/documents/Illustrative_List_11.10.2010.pdf.

[46] Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options*, Pub. No. 4212, Washington, DC, March 2011, p. 105, http://www.cbo.gov/ftpdocs/120xx/doc12085/03-10-ReducingTheDeficit.pdf.

Figure 5. Fuel Tax Receipts Relative to O&M Expenditures, Ton-Miles
(totals by waterway)



Source: CRS analysis of Corps of Engineers data, including 2009 Waterborne Commerce of the United States, available at http://www.ndc.iwr.usace.army.mil/wcsc/pdf/wcusnatl09.pdf. Fuel tax data by waterway is based on a model developed by the Tennessee Valley Authority for the Corps in 2008.

Notes: Ton miles equals cargo tonnage times the distance between loading and unloading.

These proposals, which would all institute significant increases in the user share of inland waterways financing, have generally stopped short of providing specific recommendations regarding the exact structure of the user fees that would raise new revenues. The aforementioned 1992 CBO report noted that new user fees could take a variety of forms beyond an increase to the fuel tax, but should better reflect the price to operate individual segments of inland waterways. Such a fee could take one or more forms, including annual licensing fees, congestion pricing, tolls, and/or lockage fees.

Issues for Congress

The proposals discussed above differ in important ways and bring up a number of issues for Congress. Each proposal claims to resolve ongoing issues associated with the IWTF by proposing new investment levels and revenue sources that would fundamentally alter the current financing system for inland waterways. An overarching question for Congress is what level of new and ongoing investment is warranted (or desired) for the inland waterway system. Other questions include whether to change the current fuel tax (either in the form of an increase or decrease of the fuel tax, or incorporating a new fee) and whether to alter the cost-share arrangements for inland waterways projects.

Changes to inland waterways financing have been enacted in the 113th Congress. Specifically, the Water Resources Reform and Development Act of 2014 (P.L. 113-121) made limited changes to inland waterways. It authorized the project delivery recommendations of the IWUB proposal, made the federal government responsible for paying all rehabilitation costs less than $20 million out of the General Revenue fund (previously the General Fund only covered costs less than $8 million), and reduced the cost-sharing requirement for the Olmsted Locks and Dam Project from 50% from the IWTF to 15% from the IWTF (thereby increasing the proportion of project funding from the General Fund, and theoretically freeing up IWTF monies for other projects). It did not alter the inland waterways fuel tax. The bill also authorized efforts to provide more information about inland waterways policy options, including a study of the efficiency of revenue collection on the inland waterways system, a study on the potential use of bonds and/or new fees to finance the IWTF, and the convening of a stakeholder roundtable to review and evaluate alternatives related to the future of inland waterways.

The House and Senate have also included changes related to inland waterways in recent appropriations bills. In its recommendation for FY2015, the House Appropriations Committee funded the Olmsted Project under the newly enacted WRRDA cost-sharing requirement of 15% (rather than 50%) from the IWTF. The reduced cost-sharing requirements for the Olmsted Project allowed the House to provide significant funding for other inland waterways construction projects (at the traditional 50/50 cost-share level) for the first time in five years.

Most observers agree that the changes enacted in WRRDA will be insufficient to finance all of the needed waterway upgrades in the long-term. Therefore, some continue to support enactment of part or all of the aforementioned user proposals to address the long-term solvency of the IWTF. Stand-alone legislation of this type has been proposed in the 113th Congress, including:

- H.R. 1149 (the Waterways Are Vital for the Economy, Energy, Efficiency, and Environment Act of 2013, also known as the WAVE4 Act), would authorize the primary recommendations of the IWUB proposal, including its project delivery recommendations and a $0.06 per gallon increase to the fuel tax. The bill would also authorize alterations to IWTF cost-sharing that would make the federal

government responsible for 100% of dam construction and any rehabilitation expenditure less than $100 million.

- S. 407, the Reinvesting in Vital Economic Rivers and Waterways Act of 2013 (RIVER Act) would, similar to H.R. 1149, authorize the primary recommendations of the IWUB proposal, except the fuel tax increase would be $0.09 per gallon. Under this bill, the federal government would be responsible for 100% of dam construction and any rehabilitation expenditure less than $50 million.

Some of the issues for Congress posed by these and other inland waterways proposals that could be considered by Congress are discussed below.

Competing Views on Inland Waterway Navigation Investments

A central issue for Congress is the level and urgency of infrastructure investments on federal waterways. Commercial users, including shippers and some agricultural interests, have argued that additional investment is justified because of aging infrastructure, the need for expanded capacity, and positive environmental externalities associated with inland waterway shipping compared to other forms of shipping. These users argue that the benefits of inland waterways are widespread. Their claims are countered by a number of other groups, including taxpayer and environmental advocacy groups, who argue against increased federal funding for inland waterways. These groups contend that the shipping industry often misrepresents or overstates the benefits of these investments and that major funding increases for inland waterway projects are not warranted.[47]

Despite these disagreements, most entities agree that the current system of financing inland waterways is inadequate to address future needs (regardless of the precise level of those needs). As a result of the recent funding drawdown, the Corps is expected to have appropriations for just one ongoing lock replacement project (Olmstead Lock on the Ohio River) through at least FY2016 under its current baseline for IWTF revenues.[48] Barring a new source of revenue or supplemental federal appropriations by Congress, new or ongoing IWTF construction projects may be put on hold by the Corps, regardless of their urgency.

Aging Infrastructure and Urgency of New Investments

The condition of Corps inland waterway facilities has been a primary driver behind the call for increased investment on inland waterways. The Institute for Water Resources (part of the Corps of Engineers) notes that the majority of locks in the United States are now past their intended design age of 50 years.[49] The Corps has connected this aging infrastructure to an overall decline in the efficiency of its assets on inland waterways, noting that overall lock unavailability (both scheduled and unscheduled) has increased in recent years.[50] In some cases, the user industry

[47] "Conservation and Watchdog Groups Oppose Barge Industry's Plan to Shift Costs to Taxpayers," press release, June 21, 2010, http://www.moenviron.org/pdf/NIC%20IWTF%20Proposed%20Changes%20Press%20Release.pdf.

[48] Correspondence with David Grier, Corps of Engineers, April 11, 2011.

[49] David Grier, *The Declining Reliability of the U.S. Inland Waterway System*, Institute for Water Resources, Army Corps of Engineers, Alexandria, VA, 2009, http://onlinepubs.trb.org/onlinepubs/archive/Conferences/MTS/4A%20GrierPaper.pdf (hereinafter referred to as Grier).

[50] Grier, p. 3.

favors new lock construction and expanded capacity over ongoing maintenance for a number of reasons.[51]

Other groups argue against significant new investments for inland waterway projects. In arguing against new locks on the Upper Mississippi River, a coalition of environmental groups noted that while the design life of new investments is usually only 50 years, regular maintenance can extend the life of existing locks for an additional 50 years at a considerably lesser cost than that for new construction.[52] These groups generally argue that the costs of new lock construction greatly exceed the benefits of reduced waiting time and lock unavailability, and point out that issues associated with most aging inland waterways infrastructure can be overcome by improved small-scale and nonstructural improvements.[53]

Waterway Traffic Projections

The Corps has in the past noted that the justification for most new navigation alternatives depends greatly on traffic forecasts from future trade scenarios, which can themselves be difficult to predict. These forecasts often depend on a number of interrelated variables, such as commodity prices, the overall price sensitivity of shippers, and outside factors such as increases or decreases in the efficiency of other modes of freight transit.

The Corps has noted that total domestic freight traffic is expected to increase by approximately 70% by 2020, but recently has avoided projections specific to inland waterway freight traffic.[54] The Department of Transportation projects that the majority of this increase in freight traffic will be on freight rail and highway traffic, with annual waterway traffic projected to increase 2% per year between 2010 and 2035.[55] Shipping interests point out that an overall increase in the efficiency of inland waterways could lessen anticipated pressure on highway and rail shipments, or at least maintain viability of inland waterways compared to these other forms of freight shipping. Future lock upgrades or new construction would likely increase demand for inland waterways. However, the extent to which these upgrades would have an effect on demand would likely also depend on a number of other external factors.

Some groups have countered industry requests for new lock construction based on traffic projections by noting that traffic has been flat or decreasing at some individual locks on high-traffic portions of the inland waterway system.[56] Observers, including former Corps employees,

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[51] Expanded lock capacity can in some cases decrease the amount of time required for lockage of large barge tows, which may be required to split into multiple tows in order to pass through smaller locks. The question of whether new capacity was preferable to prioritized maintenance was a primary issue of debate in the case of recently proposed Corps investments on the Upper Mississippi River-Illinois Waterway (UMM-IWW). See CRS Report RL32630, *Upper Mississippi River System: Proposals to Restore an Inland Waterway's Ecosystem*, by Kyna Powers and Nicole T. Carter.

[52] Brad Walker, *Big Price, Little Benefit: Proposed Locks on the Upper Mississippi and Illinois River Are Not Economically Viable*, The Nicollet Island Coalition, February 2010, p. 10, http://www.iwla.org/index.php?ht=a/GetDocumentAction/i/2079. (Hereinafter "Walker.")

[53] This was one conclusion of a 2001 National Research Council study. See National Research Council, *Inland Navigation System Planning: The Upper Mississippi River-Illinois Waterway,"* Washington, DC, 2001. p. 4.

[54] Grier, p. 2.

[55] According to the Department of Transportation's Freight Analysis framework, waterway traffic (including harbor and non-fuel taxed waterway traffic) is expected to increase by 2% per year from 2010-2035. See U.S. Department of Transportation, Office of Freight Management and Operations, *Freight Facts and Figures, 2009*, p. 5. Available at http://www.ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/docs/09factsfigures/pdfs/fff2009_highres.pdf.

[56] See comments by the Institute for Agriculture and Trade Policy at http://www.moenviron.org/pdf/NIC%20IWTF%20Proposed%20Changes%20Press%20Release.pdf. Accessed August 19, 2010.

have also criticized previous projections of traffic increases by the Corps and as overly optimistic.[57] To date, the Corps has avoided use of projected future traffic increases as a basis for changes to the overall level of investments on inland waterways.

Environmental Considerations

Shipping interests also argue for increased investment in inland waterways because of the overall value of inland waterways compared to other modes of shipping. They point to studies that have concluded that barge shipping in particular constitutes a transportation alternative that is more efficient and environmentally friendly than other forms of shipping, such as highway and rail. For example, previous industry studies have calculated that railroads are 28.3% less fuel-efficient than inland waterways.[58] Additionally, they argue that inland waterways contribute significantly fewer greenhouse gas emissions per mile than other forms of freight transportation.[59] Studies have also noted other benefits, including reduced highway congestion and noise reduction.

Taxpayer and environmental groups have questioned studies citing environmental benefits as a basis for new investments in barge shipping. For instance, groups have disagreed with industry fuel-efficiency calculations, noting that many industry studies have not taken into account technical factors such as the directional constraints of river flow, or "circuity."[60] They argue that the use of a conversion factor to account for circuity creates a more accurate picture of fuel efficiency among various modes. They have also noted that using the fuel efficiency for "unit grain trains" instead of an average for all rail shipping would allow for a more accurate comparison of fuel efficiency between barge and rail shipping.[61]

Environmental groups also note that inland waterway projects can negatively affect riparian habitat and species by altering natural flows.[62] Structural changes to rivers such as locks and dams (which can create sedimentation, increase turbidity, and lead to other reservoir-like effects) and levees (which separate rivers from flood plains) affect the natural state of these bodies of water. Additionally, waterway traffic may also cause bank erosion through wave action. Thus, increased construction and expansion of inland waterways can have negative environmental effects.

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[57] Donald C. Sweeny, *A Critique of "Final Re-Evaluation of the Recommended Plan: UMR-IWW System Navigation Study: Interim Study,"* Nicollet Island Coalition, September 2009, p. 9.

[58] These studies generally define "fuel efficiency" as ton-miles per gallon. See for example, C. James Kruse, Annie Protopapas, and Leslie Olson, et al., *A Modal Comparison of Domestic Freight Transportation Effects on the General Public*, Texas Transportation Institute, Texas A&M University, Final Report, College Station, TX, December 2007, p. 41. http://www.americanwaterways.com/press_room/news_releases/NWFSTudy.pdf. (Hereinafter Texas Transportation Institute.)

[59] Texas Transportation Institute, p 34.

[60] "Circuity" refers to the fact that rivers and similar bodies of water are constrained by their natural course, which may be longer than the distance traveled between destinations on highway or rail. Some groups note that failing to account for circuity skews fuel efficiency calculations in favor of barge tows. (Generally barge tows use less fuel per mile than highway or rail shippers, but also have to travel a longer distance than these shippers to get to the same locations.)

[61] Unit grain trains carry the same commodity, bound for the same final destination, and thus have superior fuel efficiency compared to overall rail system averages. See Walker, pp. 15-16.

[62] Walker, pp. 1-2.

Funding for Proposed Investments

User Fees and Other Revenue Sources

In addition to deciding whether additional investment is needed, Congress may also consider changes to the system that finances these investments, including options for additional revenue that were recently proposed to Congress. These options are the IWUB's proposal (an increase to the fuel tax), the White House's proposal to the Joint Committee on Deficit Reduction (new annual fees in addition to the current fuel tax), or other options such as a lock usage fee or some kind of toll system.

The IWUB-proposed increase to the existing fuel tax would be somewhat in keeping with the current system for user fees and revenue collection. Combined with increased federal responsibility for some inland waterway costs, the IWUB argues, this proposal would rebuild the trust fund balance and also fund new investments. While the tax would generate additional revenue, some taxpayer and environmental groups argue that the associated increases to federal cost share responsibilities tied to this proposal are unacceptable. The user industry has not indicated whether it would accept increases to the fuel tax without the proposed changes to cost-sharing arrangements.

The user fees proposed by the Obama Administration in 2011 would address the issue of inadequate revenues by raising new fees from commercial users operating on the inland waterway system. Under the proposed new system of fees, all commercial users would continue to pay costs to utilize the inland waterway system in the form of fuel taxes and new fees for non-lock users, while lock users would also continue to pay the fuel tax, but would pay an even greater fee. The Administration also proposes to add new waterway segments to the list of fuel-taxed waterways on the inland waterway system, further raising revenues.

The Administration argues that since commercial shippers are the primary beneficiary of waterway investments, they should continue to pay the costs for new capital investments. Furthermore, since lock users benefit the most, they should pay the most. The IWUB and Congress have previously rejected lock usage fees and similar proposals as posing unfair burdens on a subset of waterway users, and have opposed the new Administration proposal.[63] The IWUB argues that targeting users of individual segments runs counter to the idea of the inland waterways as a whole "system" whose interconnectivity benefits the nation.[64] Additionally, users note that major fee increases will significantly affect shippers operating within the system.[65] Finally, the user industry has also argued against the proposed new fee because it delegates the authority to set fees to the Secretary of the Army, with certain restrictions.[66]

Previously, other means to raise revenue have also been considered by Congress. Early forms of the Inland Waterways Revenue Act of 1978 proposed a lock usage fee in lieu of the fuel tax

[63] For example, see "Waterways Council Reacts to President Obama's Proposal for Inland Waterways Infrastructure Funding," September 28, 2011, http://www.waterwayscouncil.org/Media%20Center/newsreleases/2011/WCI_obama_plan.pdf.

[64] Summary Minutes, Inland Waterways Users Board Meeting, 8/11/2009. Available at http://waterwaysusers.us/Summary%20Minutes%2061.pdf.

[65] See discussion on waterway traffic projections under the previous section, "Competing Views on Inland Waterway Navigation Investments."

[66] As previously mentioned, under the proposed legislation, Congress would require that fees be set to recover a certain amount of revenue annually. Thus, while the Corps would set the specific amount for the fee, Congress would determine the total amount to be raised from such a fee.

included in the final bill, and other fees have subsequently been proposed as replacements or supplements to the fuel tax. In addition to lock usage fees, options such as annual licensing fees, systemwide and segment-specific tolls, ton-mile charges, and lock charges for the most congested portions of the system have previously been discussed as a potential means to raise revenues on inland waterways.[67] Theoretically, some of these items could also be combined with the current fuel tax or other proposals.

Indexing Excise Taxes to Inflation

Automatic inflation adjustments for excise taxes such as the IWTF fuel tax are an item of debate among policy makers. Some argue that since construction expenditures tend to increase along with prices and wages, an inflation adjustment of some type (for example, tied to the Consumer Price Index or Construction Price Index) should be factored into taxes that fund these investments. In the case of the IWTF, the lack of an automatic inflation adjustment in the fuel tax rates set in WRDA 1986 means that the overall purchasing power of IWTF revenues has decreased since the tax was set at its current level in 1994.[68] If the original tax had included an annual inflation adjustment based on CPI, CRS calculates that it would be approximately $0.29 cents per gallon today, and would have resulted in approximately $300 million in additional revenues since 1994, plus interest on the investment and federal matching funds.[69]

Some excise taxes with similar characteristics to the IWTF fuel tax are indexed for inflation, while others are not. A tax on aviation users was established in 1970 and is authorized to expend its funds on items such as airport planning and construction, safety measures, and related departmental expenditures.[70] Since 2003, this aviation user tax has been indexed to inflation. Alternatively, the Federal Highway Trust Fund funds construction and operations and maintenance on federal highways through a fuel tax of $18.4 cents per gallon, and is not indexed to inflation. As a result, it has experienced a decrease in real purchasing power (similar to the IWTF). Some states, such as Maine, Wisconsin, and Florida, index their state highway fuel taxes to CPI or some other measure of inflation, while other states have recently considered this option but rejected it.

A separate financing concept, known as "capital recovery," was represented in the original 1978 legislation but was not enacted in the final bill. Under this framework, user fees would automatically adjust to recover capital investments by the government.[71] For instance, user fees might increase when the IWTF balance drops below a certain level. Alternatively, annualized or per-use fees could be structured to recover capital costs at individual facilities over time. Such a fee could render less likely future shortfalls in the trust fund. It might also force users to narrow those projects pursued to only the most vital authorizations. The concept appears to be represented in the Obama Administration proposal, in which user fees would be tied to trust fund balances after FY2022.[72] Users have previously argued against capital recovery, noting that it is difficult to plan for a tax that is constantly changing, and that such an increase could create an

[67] See CBO User Charge Report, pp 53-71. In addition to its proposed lockage fee, the Obama Administration proposed in the FY2010 budget that the Secretary of the Army be provided with authority to further increase lockage fees at some individual congested locks (there was no limit to these proposed increases in the Administration's legislative proposal). This proposal was not enacted.

[68] Based on the Consumer Price Index, the current tax of $0.20 cents per gallon is equivalent to approximately $0.14 cents in 1994 (a decrease of approximately 30%).

[69] This assumes that like most other excise taxes, an inflation adjustment for the IWTF fuel tax would be based on CPI. Alternatively, another index, such as the construction cost index, might be an appropriate basis for adjustments.

[70] Joseph J. Cordes et al., "Airport and Airway Trust Fund," in *Encylopedia of Taxation and Tax Policy*, 2nd ed. (Washington, DC: The Urban Institute Press, 2007), pp. 4-5.

[71] The IWTF and the 50/50 cost-share requirements were set up as a compromise in lieu of the capital recovery requirement. While some oppose the concept of capital recovery, theoretically the two structures are not exclusive.

[72] See **Table 3**.

"upward spiral" of cost increases in which a shrinking user base is responsible for more and more costs.

Congress could also consider additional means to increase the reliability of the revenue stream for inland waterways. An automatic adjustment for inflation has previously been discussed and could be incorporated into either a fuel tax increase or a new lockage fee. An inflation adjustment could provide additional future revenues and increase the real purchasing power of IWTF funds, which has decreased substantially since 1994. Some argue that such an automatic adjustment amounts to hidden (and therefore unacceptable) tax increases in the future. (See box above.)

If no long-term solution is enacted to address the IWTF revenue shortfall, Congress may again be forced to take measures to ensure the solvency of the trust fund. Previously, some of these options have included capping IWTF withdrawals at the level of current year fuel tax revenues or putting a temporary hold on all new contracts and focusing on ongoing work.[73] Both of these options would curtail investments on the inland waterway system to some extent. Congress might also stipulate that some or all of the subset of IWTF investments be exempted from WRDA 1986 cost-sharing requirements (similar to the exemption provided by Congress in FY2009 enacted appropriations). However, an exemption such as this would have an additional cost to taxpayers in the form of funds from the General Revenue account.

Cost-Sharing

A related question before Congress is whether the current cost-share arrangement for inland waterway projects is adequately balanced. As previously mentioned, WRDA 1986 established cost-sharing requirements for construction and major lock rehabilitation projects. Under WRDA 1986, construction and major rehabilitation were cost-shared, while "routine" operations and maintenance was a 100% federal cost. Several years later, WRDA 1992 (P.L. 102-580) established that "major rehabilitation" should be defined as any upgrade requiring more than $8 million in total funding (among other requirements).[74]

The IWUB proposal would significantly modify current cost-sharing arrangements. As previously mentioned, it would change the existing cost-share arrangement to exclude dams and minor rehabilitation from cost-share requirements, shifting funding for these types of projects to 100% federal funding from the General Revenue stream. Notably, the IWUB reasons that costs for dams should be a federal responsibility because significant segments of the U.S. population benefit from these structures.[75] The IWUB also proposes a new threshold for what it considers to be major lock rehabilitation, specifying $100 million as the new cut-off between routine operations and maintenance and major rehabilitation.[76] In short, the IWUB proposes to redefine the $8 million threshold established for projects in WRDA 1992, and replace it with a threshold of $100 million. This would in effect greatly increase the number of maintenance and rehabilitation projects that are federally funded. Additionally, the report proposes to make all cost overruns for

[73] Enacted appropriations for FY2011 agreed with the President's budget request, which limited trust fund withdrawals to current year fuel tax revenues.

[74] Like the original fuel tax, this amount was not indexed for inflation.

[75] IMTS Capital Investment Strategy Team, p. 69. An important point regarding this proposed change is that it includes the dam portion of lock and dam projects. Thus, for future proposed upgrades or new construction of lock and dam projects, the report proposes to divide up these costs (which are currently cost-shared). This may prove controversial, since many argue that lock users benefit significantly from these systems.

[76] WRDA 1992 (P.L. 102-580, §205) established a statutory definition for "rehabilitation" of Inland Waterways projects. Generally rehabilitation projects are subject to the IWTF cost-share arrangement, while routine operations are a 100% federal responsibility.

IWTF construction projects a 100% federal responsibility. While some note that this provides project managers within the Corps an added incentive to keep projects within budget, critics note that the change represents an additional hidden cost to the federal government that is not reflected in the IWUB report's estimates.

The overall effect of the IWUB's proposed changes would be to shift the overall costs for inland waterway projects toward the federal government. Assuming the proposed project list in the IWUB report, CRS calculates that the cost-share arrangement for IWTF construction projects would shift from the current 50/50 arrangement to approximately 68% federal, 32% non-federal.[77] While commercial waterway users and the IWUB favor this shift in order to distribute the cost-share burden, taxpayer and environmental groups note that the IWTF already benefits from significant federal support in the form of 100% federal funding for investigations (studies) and operations and maintenance. In recent years, this support has represented an additional $500 million-$650 million annually of federal expenses with no cost-sharing requirements.[78] Assuming existing funding trends for other Corps work supporting inland waterways (e.g., operations & maintenance and investigations), CRS calculates that federal costs for inland waterways under the proposal could rise to more than 90% of the total costs for the system. Currently, the federal government is responsible for about 80%-85% of these costs annually, with some variation.

As noted above, the Obama Administration's proposals have all recommended alteration of the type and amount of user fees levied but not the overall cost-share between the federal and nonfederal expenditures. Thus, although these proposals would require new revenues from users, appropriations from the IWTF would still need to be matched with funds from the General Revenue fund, and the cost-share structure for the IWTF system would remain at 50/50.

As previously noted, some have argued in favor of shifting cost shares away from the federal government and increasing user responsibility not only for construction, but also for operations and maintenance of inland waterways. These groups, including some of the aforementioned environmental and taxpayer interest groups, have argued that waterway users should not only pay for 50% of construction and major rehabilitation costs, but also pay for some or all operations and maintenance costs, which are currently fully funded by the general treasury revenues. While Congress has in the past rejected these proposals, they may once again be considered in the context of overall government cost-cutting efforts.

Other Issues with Inland Waterway Planning

The IWUB has also asked Congress to weigh in to provide reforms to Corps IWTF planning processes. Among other things, the IWUB proposed a number of reforms to increase its involvement and improve project prioritization. Industry users argue that many of these reforms will decrease the likelihood of cost overruns, which have in the past been a problem for IWTF projects. A previous study by the Corps concluded that in several cases, a number of factors contributed to cost overruns, including inaccurate construction schedules and costs, general cost escalation, and non-optimal funding. However, the degree of involvement by a non-federal entity in the planning and decision-making process could raise concerns related to conflicts of interest.

[77] Several additional factors could potentially increase the federal share beyond the 68% level. For instance, this estimated ratio does not account for cost-overruns that are currently cost-shared but would be a federal responsibility under the IWUB proposal. Additionally, it assumes the annual funding for the IWUB recommended project list instead of the overall IWUB program recommendation of $380 million per year (the latter results in a ratio of 72% federal, 28% non-federal).

[78] CRS calculation based on Corps of Engineers Data as of September 2010.

A related item that may receive congressional attention is the Corps' method for prioritization of all inland waterway projects. As noted in the IWUB report, IWTF investments to date have usually been considered in isolation; that is, there is no formal set of criteria used to make decisions among investments competing for IWTF funds. Instead, these decisions are largely left to the Corps and the Administration (in the annual budget formulation process) and Congress (in the appropriations process). The IWUB proposes to alter this practice by adopting a priority ranking system, which is described in detail in the IWUB report.[79] Significantly, the IWUB report recommends that this system be promulgated as a regulation. This could fundamentally affect the role of Congress in the project selection and funding process.[80] Currently, Congress decides on project-specific authorizations and appropriations for Corps inland waterway projects. If a system for prioritizing investments, such as that recommended in the IWUB report, is promulgated as a regulation, the Corps would utilize these criteria to select projects for funding, and the role of Congress could be limited to providing project authorizations and overall funding levels. Such a role would be a departure from Congress's previous role in directing Corps projects, although some might argue that it is consistent with the federal approach to project allocations for other agency programs, such as the Environmental Protection Agency's state revolving fund programs for drinking water and wastewater.[81]

Author Information

Charles V. Stern
Specialist in Natural Resources Policy

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[79] IMTS Capital Investment Strategy, pp. 23-66.

[80] See IMTS Capital Investment Strategy, p. xv.

[81] For more background on these programs, see CRS Report RL30478, *Federally Supported Water Supply and Wastewater Treatment Programs*, coordinated by Claudia Copeland; and CRS Report RS22037, *Drinking Water State Revolving Fund (DWSRF): Program Overview and Issues*, by Mary Tiemann.