Statement of Stephen D. Little

on behalf of

Waterways Council, Inc.

Before the

Subcommittee on Water Resources and Environment

Committee on Public Works and Transportation

U.S. House of Representatives

April 30, 2008

Thank you for providing WCI with this opportunity to testify in opposition to the Administration's proposed significant tax increase, which is really what the barge lockage fee proposal is, and in support of an approach that we and others believe is far superior to increasing taxes on the barge industry at this time.

First and foremost, no one should be fooled by the label. While calling it a "lock user fee", the Administration proposes to approximately double the amount of revenue that the federal government collects each year from barge companies to support inland waterway system modernization that benefits the entire nation. Someone once said, "if it looks like a duck and quacks like a duck, its probably a duck." The Administration's proposal is a duck…a tax increase pure and simple.

As we understand it, the Administration's proposal would establish a new two-tier, site-based, per-barge lockage tax payable by the applicable towboat operator for loaded and empty barges alike.

Beginning in October 1 of this year, the lock tax would be $50 per barge at sites having a main lock chamber at least 600 feet in length and would increase annually by $10 per barge on October 1 of each of the next three years, reaching $80 per barge for fiscal year 2012 for these sites. For sites with main lock chambers less than 600 feet long, each year the per-barge tax would be 60% of the amount applicable to the larger lock chambers. Beginning January 1, 2013 and continuing for each subsequent year, the lock tax could automatically further increase or decrease for that calendar year by $10 per barge

for the large locks sites and $6 per barge for the second-tier sites based on the balance in the Inland Waterway Trust Fund (IWTF) at the end of the preceding calendar year. If the preceding year's December 31 IWTF balance was below $25 million or if it was less than $50 Million and had declined from the level of the balance one year earlier, the tax would automatically increase for the new calendar year by $10 per barge for the first tier sites and $6 per barge for the second tier sites; if the preceding year's December 31 IWTF balance was more than $75 million and had increased from a year earlier, the lock tax would automatically decrease by either $10 or $6 per barge for the new year based on the tier. The IWTF "balance" is defined as the amount of barge lockage taxes that have been collected, are in the Trust Fund, and have not been made available for obligation or will not become available for obligation for the remainder of that fiscal year, which seems to envision a forward projection or estimate 9 months in the future rather than a simple totaling of the amount in the Trust Fund as of December 31.

As the barge lockage tax is being phased in, the current diesel fuel tax is phased out, dropping to 10 cents per gallon on October 1 of this year, to 5 cents per gallon one year later, and disappearing completely after September 30, 2010.

An exemption to the requirement to pay the barge lockage tax is provided for the Department of Defense, Corps of Engineers, Tennessee Valley Authority, and the Coast Guard.

Forty waterway segments, almost half of which are located in Louisiana and Texas, are added to the existing 27 segments of inland and intercostal waterways that will be subject to the new barge lockage tax, but in a way that does not newly impose the diesel tax on those 40 new segments.

Finally, the Secretary of the Army is given generic authority to determine how to collect the new barge lockage tax, i.e., to "prescribe such regulations as may be necessary to carry out this Act, including the time, manner, and place of payment" of the new tax, with no details in the bill language or accompanying explanatory statement about what that might mean.

Waterways Council is in the process of attempting to understand the ramifications of the Administration's barge lockage tax proposal. In the meantime, some preliminary conclusions are apparent.

It is no secret that the Nation's economy has slowed precipitously and may already be in recession. Congress recently passed and the President signed legislation providing more that $150 billion in federal tax rebates to help stimulate the national economy. The very last thing that anyone should be proposing at this time is a tax increase, which will increase consumer costs and further depress the economy. Yet that is precisely what the Administration's barge tax proposal will do.

Doubling the amount of revenues extracted from the inland waterway industry, as the Administration proposes, will drive commerce off the waterways and onto congested and capacity-constrained highways and railroads, exactly the opposite of what enlightened national transportation policy should seek to accomplish. Included in this testimony at Enclosure (1) is copy of the Executive Summary of a recently-completed study by the Texas Transportation Institute entitled " A Modal Comparison of Domestic Freight Transportation Effects on the General Public". In a nutshell, the study concludes that barge transportation offers significant advantages over truck or rail in terms of cargo capacity, congestion, environmental emissions, energy efficiency and safety impacts. National policy should be incentivizing barge transportation instead of penalizing it as the Administration proposes.

The Administration's barge lockage fee proposal will adversely impact economic interests throughout the country in an uneven and, in some regions, a punitive manner. States like Pennsylvania, West Virginia, Kentucky, Ohio, Tennessee, Indiana, Illinois, Missouri, Iowa, Wisconsin and Minnesota will be particularly hard hit. Some barge companies and the shippers whose commercial products are transported by barge will see the amount of taxes they pay into the Inland Waterways Trust Fund skyrocket. For example, if the Administration's proposed new tax were to be fully implemented, one company whose barges presently transport coal in tows from Cumberland Mine on the Monongahela River in Pennsylvania to a power plant at East Bend, Kentucky, near Cincinnati would see the amount of IWTF-bound taxes they pay for that one-way trip increase more than seven-fold. For another company, a typical movement of corn from St. Paul, Minnesota, to New Orleans, Louisiana, would experience almost a 595% increase in taxes paid to the Trust Fund. And, where chemicals are being moved from Carville, Louisiana to Neville Island, Pennsylvania, the round-trip tax would almost double.

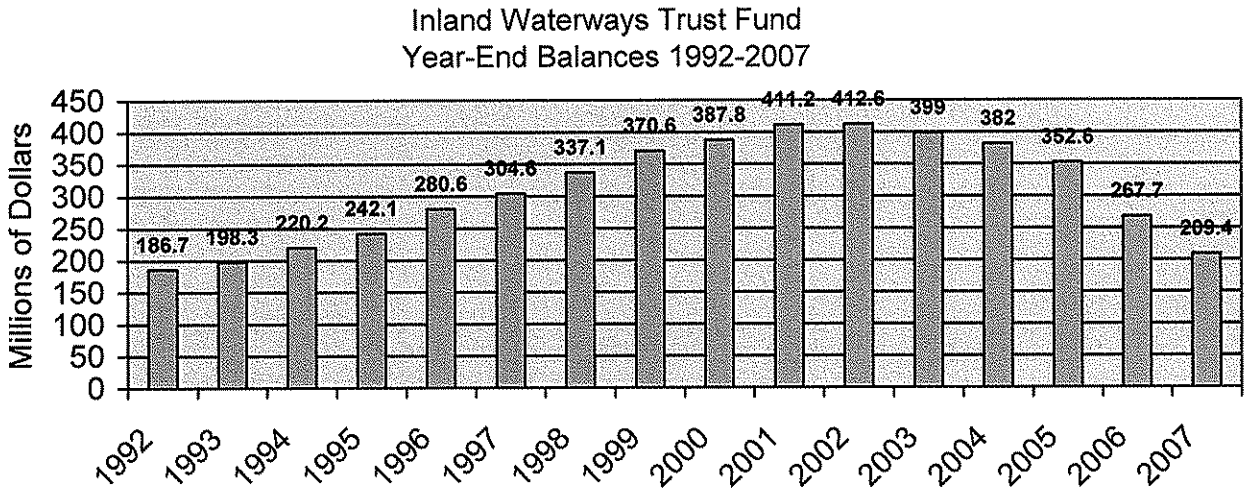
In attempting to raise additional tax revenues to support modernization of the inland waterway system, the Administration proposal seems to proceed from the false assumption that the barge industry is the only segment of the population that benefits from the system. Nothing could be farther from the truth. Forty-six lock-associated dams currently produce hydropower. Recreation vessels use the system's locks continuously to transit from upstream to downstream locations and vice versa. Without the pools that are created by the dams, those recreational vessels wouldn't be able to use the system at all in certain locations because the water depth would be too shallow to support the vessels' movements. Industrial users draw process and cooling water from the pools created by the system's dams. Municipalities draw drinking water from those pools, and agriculture users draw irrigation water from them. All benefit enormously from the system, yet only the barge industry is expected to shoulder the burden of providing the additional tax revenue that the Administration seeks.

Proposals to raise taxes on the barge industry, such as the one being advanced by the Administration, are based on flawed and misguided premises and should be rejected by Congress. Whether ostensibly justified by arguments related to cost recovery, economic efficiency, equity for taxpayers and competitors, or federal budget deficit reduction, the imposition of new taxes on the barge industry would be counterproductive and contrary to the public interest, as explained in detail by Dr. C. Jake Haulk in "The Case Against Waterways User Taxes and Fees", which is appended to this testimony at Enclosure (2).

Inland Waterway Trust Fund Trends

The Administration in the first sentence of the cover letter that Assistant Secretary Woodley sent transmitting the proposal to the Congress, describes that the proposal is "to address the declining balance in the Inland Waterway Trust Fund (IWTF)." It is true that the IWTF balance is declining. This is a very positive development in WCI's view. Figure 1 illustrates the history of the IWTF year-end balance since 1992. For a few years prior to and including 1992, the year end Trust Fund balance declined due

Figure 1



primarily to the expenditure of construction funds for inland waterway modernization projects authorized in the Water Resources Development Act of 1986 (WRDA 86). However, the balance in the Inland Waterways Trust Fund began to grow in 1993 as, each year, more industry-contributed diesel fuel taxes were added to the Trust Fund than were withdrawn to construct the modernization projects that the IWTF was created to support. Similar to what occurred during much of that time with the Highway Trust Fund and the Aviation Trust Fund, the ballooning balance in the IWTF reflected a government failure to abide by what you, Madam Chair, and your Transportation and Infrastructure Committee colleagues have described in your Views and Estimates Report as "a contract between the government and the user", whereby the waterways industry pays its diesel fuel taxes and, in return, the government pledges to use these receipts to modernize the inland waterways system.

Fortunately, with strong support from Members of this Committee, from your colleagues on the Appropriations Committee and elsewhere in Congress and from the Administration, this situation has been reversed. After reaching a level of $412 million at the end of FY 2002, the balance in the Inland Waterways Trust Fund has declined for five consecutive years, reflecting a renewed commitment to

invest in our Nation's inland waterways infrastructure. Fiscal year 2008 will continue this important positive trend for a sixth year.

While it is a positive development that the surplus in the Inland Waterways Trust Fund is finally being spent more fully for its intended purpose, there are serious questions about whether the projects supported by Trust Fund expenditures are being built in a timely and cost-effective manner. Based on a review of the lock and dam modernization projects which the Corps currently has under construction, it appears that there is a need for and opportunity to achieve significant improvement in how quickly and close-to-budget these lock and dam modernization projects are completed. The need for improvement, however, is particularly evident when comparing the current projects with lock and dam modernization projects authorized a little more than 20 years ago in WRDA 86.

PROJECT DELIVERY COMPARISON

The Inland Waterways Trust Fund (IWTF) began funding modernization of the nation's inland waterway system, including construction and major rehabilitation of locks and dams on the system, with enactment of the Water Resources Development Act of 1986, P.L. 99-662 (WRDA 86).[1] WRDA 86 authorized the construction of seven new lock and dam modernization projects on the inland waterway system, phased in a barge industry diesel fuel tax increase from 10 cents per gallon in 1986 to 20 cents per gallon on and after January 1, 1995, established a cost-sharing formula for the construction of inland waterway navigation and modernization projects under which one-half of such costs would be paid from the IWTF and the other half would be paid by general revenues, and created the Inland Waterways Users

[1] The IWTF was first established by Congress in Section 203 of the Inland Waterways Revenue Act of 1978, which also instituted a barge industry fuel tax beginning in 1980 at 4 cents-per gallon and increasing to 10 cents per gallon in October of 1985. The 1978 Inland Waterways Revenue Act provided that amounts in the IWTF were to be available, as provided by authorization and appropriations Acts, for making construction and rehabilitation expenditures for navigation on the fuel-taxed portions of the inland waterway system. However, while diesel tax payments by the barge industry began in 1980, it was not until WRDA 86 became law and was followed by appropriations acts that began appropriating from the IWTF amounts for specific previously authorized navigation system modernization projects that the industry and the country began to experience the system modernization promised in WRDA 86.

Board to make recommendations to the Secretary of the Army regarding inland waterways system investment priorities and spending levels.

WRDA 86 Projects

The seven inland waterways system lock and dam modernization projects that were authorized in WRDA 86 were:

(1) Oliver Lock and Dam, Black Warrior-Tombigbee River, Alabama;

(2) Gallipolis Locks and Dam Replacement (now called Robert C. Byrd Lock and Dam), Ohio River, Ohio and West Virginia;

(3) Bonneville Lock and Dam, Oregon and Washington-Columbia River and Tributaries, Washington;

(4) Lock and Dam 7 Replacement, Monongahela River, Pennsylvania (also known as Gray's Landing);

(5) Lock and Dam 8 Replacement, Monongahela River, Pennsylvania (also known as Point Marion);

(6) Winfield Locks and Dam, Kanawha River, West Virginia; and

(7) Auxiliary Lock at Mel Price Lock and Dam, Mississippi River, Illinois and Missouri.

Project construction funding for 1987 was appropriated for Bonneville, Mel Price, Oliver and Gallipolis/Robert C. Byrd. Initial construction funding for Gray's Landing followed in 1988 and Winfield and Point Marion began in 1989. [See Table 1]

Table 1
Projects Authorized in WRDA 86

	Public Law	Authorized Amount ($M)	Construction Begun [1]	Construction Completed [1]	Total Outlays ($M)
Bonneville	WRDA 86	191.0	1987	1994 1993*	348.0 331.6*
Mel Price #2 (Aux.)	WRDA 86	220.0	1987	1995 1994*	212.6 205.8*
Oliver	WRDA 86	150.0	1987	1996 1991*	123.3 103.7*
Gray's Landing	WRDA 86	123.0	1988	2001 1996*	176.0 172.8*
Point Marion	WRDA 86	82.9	1989	1996 1994*	113.0 107.6*
Robert C. Byrd (Gallipolis)	WRDA 86	285.0	1987	2009 1993*	384.5 320.8*
Winfield	WRDA 86	153.0	1989	2009 1997*	238.6 222.0*

[1] fiscal year
* locks operational

Reasonable Completion Timeframes

Construction for all seven of the WRDA 86 lock and dam modernization projects proceeded at a pace that saw the new/modernized locks, the major fixture in each of the projects, become operational in a reasonable amount of time. As Table 1 indicates, the construction time required to produce a working operational new lock for the WRDA 86 projects ranged from 4 years for Oliver to 8 years for Gray's Landing and Winfield, with the average for all seven projects equaling 6.3 years.

Modestly Increased Completion Costs

Comparing the originally-authorized costs of each project with the actual expenditures for the total completed project (as opposed to expenditures just to make the lock operational), the project construction costs generally increased from the amount authorized by Congress for the project in WRDA 86, though Oliver and Mel Price were notable exceptions. The total cost increase for the seven WRDA 86 projects

was 32.4%, ranging from a 17.8% cost reduction at Oliver to an 82.2% cost increase for Bonneville. [See Table 2]

Table 2
WRDA 86 Projects

	Authorized Amount ($M)	Total Outlays ($M)	Cost Increase (%)
Bonneville	191.0	348.0 331.6*	82.2
Mel Price #2 (Aux.)	220.0	212.6 205.8*	(3.4)
Oliver	150.0	123.3 103.7*	(17.8)
Gray's Landing	123.0	176.0 172.8*	43.1
Point Marion	82.9	113.0 107.6*	36.3
Robert C. Byrd (Gallipolis)	285.0	384.5 320.8*	34.9
Winfield	153.0	237.6 222*	55.3
TOTAL	**1204.9**	**1595**	**32.4**

* locks operational

Projects Currently Under Construction

The Corps' project delivery performance for the WRDA 86 inland waterway system lock and dam modernization projects was far superior, both in terms of cost and completion time, to the project construction completion performance for the inland waterway system lock and dam modernization projects which are currently under construction today, all 5 of which were authorized after WRDA 86 but before the 3-month-old WRDA 07[2]. [See Table 3]

[2] Excluded from this analysis is the Inner Harbor Navigation Canal (IHNC) Lock project in Louisiana because of its unique history and challenges. Including the IHNC project in this analysis would have significantly worsened the current-project performance figures shown in tables 3 and 4 of this paper. Also not included in this analysis of current projects is Chickamauga Lock and Dam, which was only recently authorized and is only 16% complete as of the beginning of calendar year 2008.

Table 3
Projects Authorized Post-WRDA 86

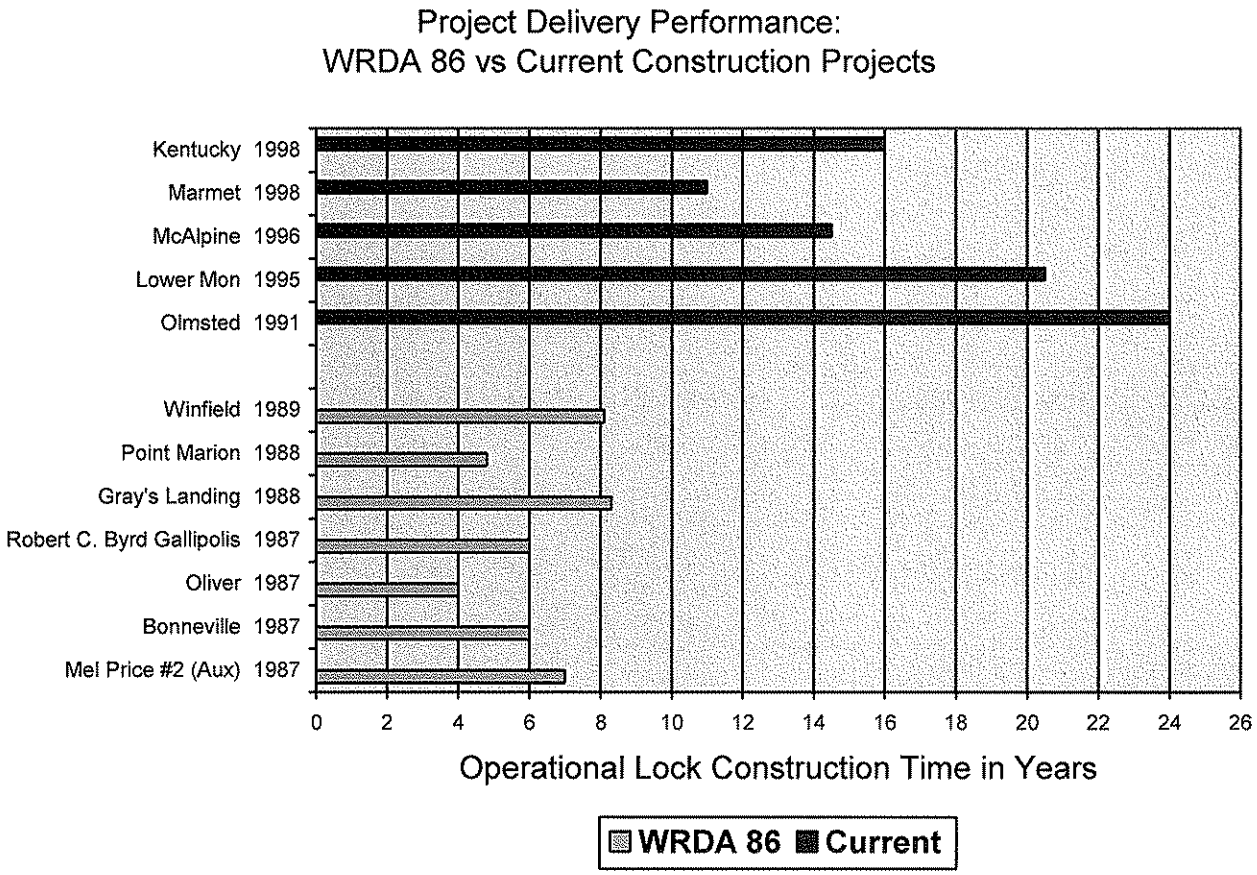
	Public Law	Authorized Amount ($M)	Construction Begun [1]	Original Completion [1]	Current Completion Est. [1]	Current Cost Estimate ($M)
Olmsted	WRDA 88	775.0	1991	2006	2015	2100.0
McAlpine	WRDA 90	219.6	1996	2002	2009	430.0
Lower Mon	WRDA 92	556.4	1995	2004	2016	975.0
Kentucky	WRDA 96	393.2	1998	2008	2014	664.0
Marmet	WRDA 96	229.6	1998	2007	2009 2008 *	406.0

[1] fiscal year
* lock operational

Lengthy Completion Delays

The estimated time required to complete the post-WRDA 86 lock and dam modernization projects has ballooned far beyond the time required to deliver operational locks for the predecessor WRDA 86 projects. Only one post-WRDA 86 project thus far has seen its modernized lock become operational, and that occurred at the Marmet project just a few months ago. The Olmsted project, which was originally projected to be completed two years ago, is now not expected to be finished, at best, until the year 2015, a 24-year construction period. Similarly, and almost as disappointing, the Lower Mon project already has been under construction for 13 years and the Corps' current estimates indicate that the project will not be complete, at best, for another 8 years. If current Corps estimates hold for all 5 of these post-WRDA 86 projects, the shortest construction period for any of the projects will be Marmet's 10 years (measured to when the new lock becomes operational) and the average time to complete all 5 will be almost 17 years (measured to the date of total project completion). Figure 2 illustrates how the projects currently under construction compare with the WRDA 86 projects in terms of construction completion times.

Figure 2



Unacceptable Cost Escalation

As Table 4 illustrates, the post-WRDA 86 lock and dam modernization projects have experienced serious escalation in the estimated costs required to complete the five projects, far in excess of what was experienced with the WRDA 86 projects.

Table 4
Current Projects

	Public Law	Authorized Amount ($M)	Current Cost Estimate ($M)	Cost Increase (%)
Olmsted	WRDA 88	775.0	2100.0	171.0
McAlpine	WRDA 90	219.6	430.0	95.8
Lower Mon	WRDA 92	556.4	975.0	75.2
Kentucky	WRDA 96	393.2	664.0	68.9
Marmet	WRDA 96	229.6	406.0	76.8
TOTAL		**2173.8**	**4575.0**	**110.5**

Where the seven WRDA 86 projects experienced a 32.4% total cost increase when comparing the construction cost Congress authorized for each project with the amount actually spent to build each of the projects, the five post-WRDA 86 projects are currently estimated to require a total of 110.5% more than Congress authorized to complete the projects' construction. Olmsted is the project whose cost has skyrocketed the most, having a current estimated completion cost that is 271% -- more than 2 and-one-half times – the $775 million construction cost that Congress originally authorized. Somewhat surprisingly, McAlpine and not Lower Mon is the post-WRDA 86 project with the next highest cost escalation, a 96% increase (almost doubling), though Lower Mon and Marmet are not much better than McAlpine, each experiencing approximately a 75% cost increase. Of the WRDA 86 projects, only Bonneville's 82% cost increase was at all comparable to the cost escalation being experienced by the post-WRDA-86 projects.

Clearly, something is seriously wrong with the way that construction of inland waterway lock and dam modernization projects is currently proceeding today! If the current projects had proceeded at the same 32.4% cost escalation rate that was experienced for the WRDA 86 projects, instead of the total 110.5 % cost escalation that has occurred thus far for the current projects, only $350 million in additional appropriations beyond what Congress has already appropriated through FY 2008 would be required to complete these projects. Unfortunately, only the Marmet project's modernized lock has become operational, and more than $2 billion in additional appropriations are still required to complete these projects.

This is a problem of serious import from the perspective of anyone who cares about how government should perform on behalf of its citizens. It is particularly a problem from the perspective of the Nation's barge companies and shippers, who are being asked to underwrite 50% of this extraordinary cost escalation from the Inland Waterways Trust Fund. One of WCI's members describes the situation this way: "We pay our own diesel fuel taxes fully and efficiently; why is it unreasonable for us to expect that these important projects are built fully and efficiently?"

Madam Chair, WCI believes that this issue of significantly delayed project completion and extraordinary cost escalation is one that cries out for the Committee's attention. We know that this country can do better. Just a few blocks away, the $600 million new stadium for the Washington Nationals baseball team was built from scratch in 22 months. We believe that the Corps still has what it takes to expedite completion of these projects and to contain their costs. It was only 15 to 20 years ago that the Corps demonstrated that capability for the WRDA 86 projects. We believe the Corps still has the capacity today to build these projects on time and within budget.

What's needed, in WCI's view, is an intense, focused effort to examine why it takes so much longer and costs so much more today to do what we were able to do just two decades ago. This effort must identify the structural and process changes, both within the Corps' control and external to it, that are required to "get more project" for the dollars that are currently being contributed by industry and invested in lock and dam modernization. This examination and the implementation of corrective action based on it are required before the waterways industry's taxes are increased to support system modernization.

The Inland Waterways Users Board, the Congressionally-created advisory body whose purpose is to give commercial users a strong voice in the investment decision-making those users are supporting with their cost-sharing payments, has taken a position very similar to WCI's. The Board's unanimous view, communicated in a letter to Assistant Secretary Woodley, is that "Until that is done (we have corrected the inefficient spending and contracting practices of the Corps), you should expect the inland waterway transportation industry to strongly oppose any increase in the revenue we send to the federal government to cover our share of new construction and major rehabilitation projects."

WCI, the Inland Waterways Users Board, and others believe the policy response that is most appropriate at this time in response to circumstances that call for the need to

- identify and implement significant improvements in project delivery performance and cost reduction,
- stimulate the economy,
- maintain the current healthy pace of inland waterway system modernization,

- incentivize increased use of the safest, most environmentally sensitive, and most congestion reducing transportation mode, and
- avoid increasing taxes

is to adjust the cost-sharing regimen applicable to the Inland Waterways Trust Fund. Instead of requiring that one-half of the costs to construct an inland waterway modernization project come from the diesel fuel taxes that the barge industry currently pays into the Trust Fund, WCI recommends that one-fourth of the needed modernization funds be drawn each year from current diesel fuel tax receipts for that year and the remainder be drawn from general revenues. At the current $90-$95 million rate that the barge industry is presently paying into the Trust Fund each year, such a revised cost sharing regimen would support an IWTF-financed annual program in the range of $360-$380 million, approximately the level that the Trust Fund-financed program has reached in recent years.

In fact, when examined in year-by-year increments for the past few years, comparing amounts designated each year in that year's appropriations act for IWTF-funded projects with the barge diesel tax revenues deposited into the Trust Fund the same year, the adjusted cost sharing regimen WCI is recommending is not much different from the actual results we've experienced. See Table 5.

Table 5

Fiscal Year	**Appropriations Act ($ Millions)**	**Diesel Tax Revenues ($ Million)**	**Percentage (%)**
2004	272	90.8	33.4
2005	333	91.3	27.5
2006	379	80.8	21.3
2007	418	90.0	21.5

For example, while the ratio of the amount of annual barge diesel tax revenues to amounts for IWTF-financed projects included in that fiscal year's appropriations act conference report approached 25 percent for fiscal years 2004 and 2005 (33.4 % and 27.5%, respectively), those ratios were actually below 25 percent for fiscal years 2006 and 2007. Our expectation is that the current 2008 fiscal year will

follow the pattern of 2006 and 2007. If this Committee and your colleagues in Congress were to adjust the Inland Waterways Trust Fund cost sharing regimen to reflect more closely the pattern experienced in the 2006-2008 timeframe, as illustrated in Table 5 and our expectations for 2008, say to require only 20 percent of IWTF-financed projects' construction costs to be paid each year from that year's diesel tax receipts, the size of the annual inland waterway modernization program that could be supported without imposing new taxes on the industry would grow to $450-$475 million each year. Waterways Council could certainly support such a change.

Madam Chair and Members of the Subcommittee, it is difficult to overstate how important our inland waterway system is to our Nation's economic, environmental, and general well-being. The Administration's proposed barge lockage tax increase is the wrong approach to address the system's construction funding needs. The proper approach, in WCI's view, is to adjust the Inland Waterways Trust Fund cost sharing regimen such that the current amount of barge diesel tax receipts each year will be sufficient, without the imposition of new taxes on the industry, to continue the current annual level of system modernization that we have reached in recent years. If you make the adjustment we are seeking, every American who turns on a light powered by the electricity that was generated by the coal that moved on the inland waterways, who eats in the morning the bowl of cereal that was made from the grain that moved by barge, who drives a car because of the fuel that was transported by barge will benefit from what you've done.

Thank you again for the opportunity to present this testimony on behalf of Waterways Council, Inc. I'd be pleased to respond to any questions you may have.

Enclosure (1)

Texas Transportation Institute

CENTER for PORTS and WATERWAYS

A MODAL COMPARISON OF DOMESTIC FREIGHT TRANSPORTATION EFFECTS ON THE GENERAL PUBLIC

EXECUTIVE SUMMARY

November 2007

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MARITIME ADMINISTRATION

and

NATIONAL WATERWAYS FOUNDATION

NATIONAL WATERWAYS FOUNDATION

DISCLAIMER

This research was performed in cooperation with the U.S. Maritime Administration (MARAD) and the National Waterways Foundation (NWF). The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official view or policies of MARAD or NWF. This report does not constitute a standard, specification, or regulation.

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BACKGROUND

This report examines many of the same aspects as the 1994 Maritime Administration report, "Environmental Advantages of Inland Barge Transportation", but using more current data, and—in some cases—new data sources.

The following topics areas were covered in this research:

- Cargo capacity
- Congestion
- Emissions
- Energy efficiency
- Safety impacts
- Infrastructure impacts

The analysis is predicated on the assumption that cargo will be diverted to rail or highway (truck) modes in the event of a major waterway closure. The analysis considered the possible impacts resulting from either a diversion of 100% of the current waterborne cargo to the highway mode OR a diversion of 100% of the current waterborne cargo to the rail mode.

This report presents a snapshot in time in order to focus on several vital issues. The data utilized in this research are publicly available and can be independently verified and utilized to support various analyses. Further detail about the information contained in this summary can be found in the full project report.

CARGO CAPACITY

The "standard" capacities for the various freight units across all three modes used in this analysis are summarized in the following table.

Standard Modal Freight Unit Capacities.

Modal Freight Unit	Standard Cargo Capacity
Highway – Truck Trailer	25 tons
Rail – Bulk Car	110 tons
Barge – Dry Bulk	1,750 tons
Barge – Liquid Bulk	27,500 bbl

The following figures illustrate the carrying capacities of dry and liquid cargo barges, railcars, and semi-tractor/trailers.

CONGESTION ISSUES

HIGHWAY

The latest national waterborne commerce[1] data published by the U.S. Army Corps of Engineers Navigation Data Center were obtained for calendar year 2005. The tonnage and ton-mile data for the following major rivers were extracted:

- Mississippi River - Minneapolis to Mouth of Passes
- Ohio River
- Gulf Intracoastal Waterway (GIWW)
- Tennessee River
- Cumberland River
- Columbia River system – Columbia and Snake rivers

The amount of cargo currently transported on these rivers is the equivalent of 58,000,000 truck trips annually that would have to travel on the nation's roadways in lieu of water transportation. The hypothetical diversion of current waterway freight traffic to the nation's highways would add 1,160 combination trucks (to the current 874) per day per lane on a typical rural interstate. The percent combination trucks in the Average Annual Daily Traffic on rural interstates would rise from the current 16% to 31%, or almost double. This increase in truck trips would cause the Weighted Average Daily Combination Trucks per Lane on segments of interstate between urban areas to rise by 33% on a nationwide basis. The impact in the vicinity of the waterways considered in this study would logically be much more severe than the national average, especially during the heavier truck travel periods of the year, month, week, or day.

RAIL SYSTEM CONGESTION IMPACTS

The tonnage moved on the inland river system would amount to an addition of nearly 25% more tonnage on the railroad system. This new burden would not be evenly distributed. The primary burden would be placed on the Eastern U.S. railroads with little real opportunity to take advantage of excess capacity that may exist on the Western U.S. railroads.

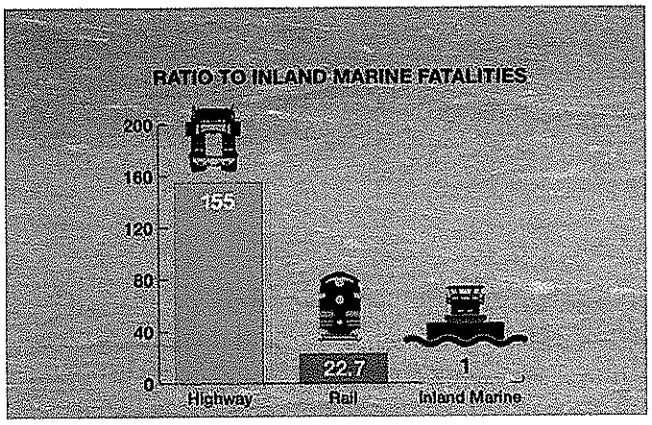
EMISSIONS ISSUES

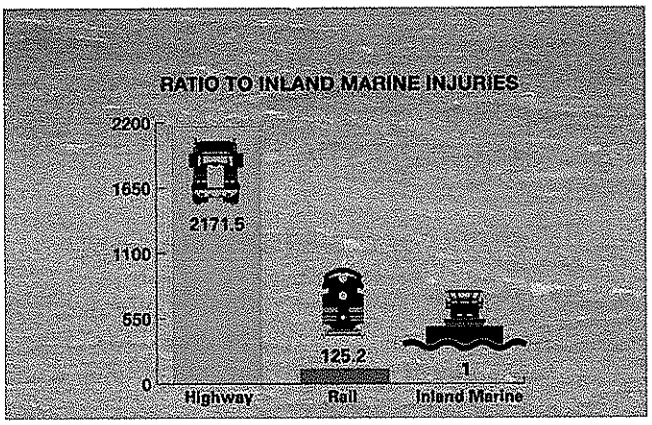
The emission comparison between the three modes is shown in the following table.

[1] U.S. Army Corps of Engineers. Navigation Data Center. Waterborne Commerce of the United States 2005.

involving collisions, allisions (vessels striking a fixed object), or capsizings were further extracted and used in analysis.

The data for rail fatalities and injuries respectively were obtained from *Railroad Statistics: National Transportation Statistics - 2006, Table 2-35: Railroad and Grade-Crossing Fatalities by Victim Class* and *National Transportation Statistics - 2006, Table 2-36: Railroad and Grade-Crossing Injured Persons by Victim Class.* Data for truck-related incidents were obtained from *Large Truck Crash Facts, 2005*, a publication of the Federal Motor Carrier Safety Administration. The data for waterborne incidents were taken from the *Marine Casualty and Pollution Database, July 2006*, a database that is maintained by the U.S. Coast Guard. The comparisons of fatality and injury rates are shown below.





HAZARDOUS MATERIALS INCIDENTS

Data on hazardous materials incidents for rail and truck were taken from the Pipeline and Hazardous Materials Safety Administration's *Hazardous Materials Incident Reporting System, 2001-200.* Data for inland waterway incidents were extracted from the Coast Guard's *Marine Information for Safety and Law Enforcement (MISLE)* system.

Due to the fact that all three reporting systems basically rely on self-reporting, and the definitions of materials that require reporting are very complex, much of the spill data are suspect. However, for larger spills, it seems reasonable to assume that the accuracy of the data improves, due to the severity of the incident and public scrutiny; therefore, the research team decided to analyze only large spills as a measure of the overall safety of the modes in the area of spills. The threshold quantity was set at 1,000 gallons.

The following figure provides a comparison of spills across the modes:

A CASE STUDY – ST. LOUIS, MO

A case-study analysis was conducted that assumes closure of the Illinois and Mississippi Rivers in the vicinity of St. Louis, Missouri. The analysis uses the Federal Highway Administration's "HERS-ST" model to estimate the impacts on highway traffic that would accrue. The model results in an over 200 percent increase in truck traffic, an over 400 percent increase in delays, as well as substantive increases in accidents, casualties, maintenance, and emissions costs. The following table highlights the impacts to the general public that would be most notable.

Summary of Significant Impacts - General Public.

Category	CURRENT Initial	DIVERSION FP2			
		w/o Improvements	% Change	w Improvements	% Change
1 Combination Trucks per Lane-Mile per Day*	1218	3736	207	3781	210
2 Average Speed - Peak (mph)	69.9	62.0	-11	65.5	-6
3 Average Speed - Off Peak (mph)	70.8	66.1	-7	70.6	0
4 Delay - Total (hrs per 1000 VMT)	0.07	0.42	466	0.44	495
5 Crashes (annual)	3448	4688	36	4999	45
6 Injuries (annual)	1692	2301	36	2454	45
7 Fatalities (annual)	13	18	36	19	45
8 Maintenance Costs ($ million per 1000 miles)	0.79	1.53	93	1.42	80
9 Emissions Costs ($ per 1000 VMT)**	12.28	16.86	37	18.68	52
10 Improvement Costs ($ million)***	345.0	--	--	721.5	109

* Calculated from HERS Output as: VMT Combination Trucks / (Lane-Miles x 365)

** Value from Current w/ Improvements FP2 output. Cleaner vehicles are expected to be in use 10 years from now, under either scenario.

*** Value from Current w/ Improvements FP2 output