

**INLAND WATERWAYS USERS BOARD  
25<sup>th</sup> ANNUAL REPORT**

**To The SECRETARY OF THE ARMY  
And the UNITED STATES CONGRESS**

**DECEMBER 2012**



## **Inland Waterways Users Board Members**

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Monessen, Pennsylvania

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## **Introduction**

Throughout our nation's history, our system of navigable rivers and inland waterways has played a vital role in our success as a nation. George Washington helped build canals, locks and dams. The Northwest Ordinance, passed by the Continental Congress, ratified by the states and ratified again by the Congress of the United States under our current Constitution, decreed that the waters leading to the Mississippi and Saint Lawrence "shall be common highways and forever free... without any tax, impost, or duty therefor" and this was the law of the land for almost two centuries until the fuel tax that supports the Inland Waterways Trust Fund was imposed.

As transportation arteries, our waterways gave us the opportunity to prosper as a nation when no other means of transportation existed. Today, when transportation options range from walking through the woods to walking in space, transportation via the nation's inland waterways system still plays a vital role in our national competitiveness, allowing vast quantities of goods to be transported at less cost than competing modes. This benefits consumers in the U.S., as well as American farmers and manufacturers who are able to win sales in highly competitive world markets because the lower cost of waterways transportation makes the delivered cost of American goods lower, offsetting higher production costs. Ultimately, this means good paying jobs for Americans in all manner of fields.

The Inland Waterways Users Board (the Board) was created by Congress in section 302 of Public Law 99-662, the Water Resources Development Act of 1986. That section assigned the following duties to the Board:

The Users Board shall meet at least semi-annually to develop and make recommendations to the Secretary regarding construction and rehabilitation priorities and spending levels on the commercial navigational features and components of the inland waterways and inland harbors of the United States for the following fiscal years. Any advice or recommendation made by the Users Board to the Secretary shall reflect the independent judgment of the Users Board. The Users Board shall, by December 31, 1987, and annually thereafter file such recommendations with the Secretary and with the Congress.

This document reflects the Board's observations and recommendations for 2012.

## **2011/2012 Hiatus**

This is the Board's 25<sup>th</sup> Annual Report, but should be the 26<sup>th</sup> annual report. For the first time in the history of the Board, there was no annual report issued last year (calendar year 2011) because the terms of all members were allowed to expire and no appointments or re-appointments were made. In light of the historic challenges that confront the inland navigation infrastructure in this country, it is regrettable that the important work that is jointly undertaken

by this federal advisory committee and the U.S. Army Corps of Engineers (the Corps) was allowed to lapse into an inactive status for 10 months.

For example, timely dialogue between the Corps and Board may have allowed us to investigate opportunities to achieve significant cost savings on the Olmsted Locks and Dam project before the Corps had to commit to the future course of that project. We feel that it is important for the record to document what happened.

Following Meeting No. 65 of the Inland Waterways Users Board, which occurred in New Orleans on April 1, 2011, officials within the Department of Defense raised questions pertaining to renewal of the Board's charter and appointment requirements for members of the Board. Although similar issues previously had been raised and routinely resolved since the Board's establishment in 1987, the matter remained unresolved throughout the remainder of calendar year 2011. No additional meetings of the Board could be held during 2011, and no annual report for 2011 was able to be prepared by the Board.

Congress became increasingly concerned about this situation. In September of 2011, the Chairman of the U.S. House of Representatives' Subcommittee on Water Resources and Environment, Representative Bob Gibbs, wrote to Secretary of Defense Leon Panetta about the importance of the Inland Waterways Users Board and the need to assist "in getting this Board reconstituted quickly." Three months later, the conferees on the Fiscal Year 2012 omnibus appropriations act wrote:

"The conferees note that the terms of all members of the Inland Waterways Users Board (IWUB) have expired and no appointments to reconstitute the Board have been forthcoming from the Secretary of the Army. The IWUB was created by Congress in the 1986 Water Resources Development Act for the express purpose of providing expert advice to the U.S. Army Corps of Engineers and to the Congress on the implementation of the inland waterways navigation infrastructure modernization programs. This aging system is vital to the movement of commerce. The conferees direct the Secretary of the Army to act on the appointments to the IWUB as expeditiously as possible."

Finally, on April 17, 2012, the Office of the Secretary of Defense published notice in the Federal Register that the charter for the Inland Waterways Users Board was being amended to require the Board to "provide the Secretary of Defense, through the Secretary of the Army and the Assistant Secretary of the Army for Civil Works, independent advice and recommendations on matters relating to construction and rehabilitation priorities and spending levels on the commercial navigation features and components of the U.S. inland waterways and inland harbors..."



The Board then was reconstituted and Board meetings were held on (1) June 6, 2012, in Pittsburgh, Pennsylvania, (2) August, 29, 2012, in St. Louis, Missouri, and (3) December 19, 2012, in Paducah, Kentucky.

### **Broken Business Model**

The Board is increasingly concerned about the worsening condition of critically important locks and dams on our nation's waterways and about the growing inability of our current inland waterways modernization program to adequately address this situation. Previous annual reports of the Board have attempted to serve as a clarion call for policy-makers to understand and come to grips with this growing investment challenge. Although there are some hopeful signs of increased government recognition of the need to reform the nation's inland waterways modernization program, it is also clear that conditions continue to deteriorate. We cannot continue to operate much longer under today's broken model for delivering capital waterways infrastructure projects and expect the system to continue to adequately provide its vital services to our economy.

Construction of the Olmsted Locks and Dam project continues to illustrate the severity of the problem. Authorized by Congress in 1988 at a then-estimated total project cost of \$775 million, Olmsted's estimated project cost had grown to \$2.1 billion by the time the Board's 24<sup>th</sup> Annual Report was submitted in October 2010. In April 2012, the Administration announced that the Olmsted project's cost had increased yet again, to \$2.918 billion on a fully-funded basis or \$3.099 billion based on the project's expected construction schedule.

With only approximately half of the project's needed funding appropriated to date, the new escalated project cost has moved Olmsted's projected project completion date to September 2024, almost 12 years into the future from today. On a focused, project-specific basis, this is a travesty. Worse than a project-focused travesty, however, it constitutes a programmatic travesty. The September 2024 completion date is premised on an assumption of \$150 million in annual expenditures on the project until Olmsted has been completed. Under status quo policy and practice, only approximately \$170 million is expected to be available each year for all inland waterways modernization projects, which means that almost no other priority projects can be funded until after 2024. Olmsted, under the current broken model, essentially stops progress on the rest of the national program for more than another decade.

At Board Meeting No. 66 held on June 6<sup>th</sup> this year in Pittsburgh, the Corps reported on the status of priority lock and dam construction projects currently under construction, including the remaining balance to complete those projects based on assumed full funding of each project. Table 1, expressed in October 2012 dollars, summarizes that remaining balance information.

<u>Table 1</u>	
<u>Project</u>	<u>Remaining Balance (\$ in millions)</u>
Chickamauga Lock	\$512.6
Kentucky Lock Addition	\$486.1
Monongahela River Locks & Dams 2, 3 & 4	\$1,197.0
Olmsted Locks & Dam	\$1,560.0
Emsworth Locks & Dam	\$6.7
Markland Locks & Dam	\$0.0

With Markland requiring no additional funds, Emsworth poised to close out in 2014, and Olmsted scheduled to be completed in September 2024, the three remaining projects - Chickamauga Lock Replacement, Kentucky Lock Addition, and Monongahela River Locks and Dams 2, 3 and 4 Replacements- will not be able, under the structure of the current national inland waterways modernization program, to resume significant construction until fiscal year 2025. And, while it appears from Table 1 that the total remaining cost for the three projects is \$2.2 billion, the actual total remaining cost will be considerably higher than that because the above “fully funded” figures will need to be escalated to reflect, at a minimum, inflation to a future time determined by each project’s estimated actual completion schedule. If, for example, inflation is assumed to occur at a rate of 3% per year and \$150 million each year - approximately the highest amount that can be supported under the current programs - is made available to the highest priority project until it is completed, and then to the next highest priority projects in order until all three projects are completed, the total cost remaining today to complete the three projects increases by more than \$600 million, and the last project is not completed until well into the 2040’s, more than 30 years from today - for projects whose construction began in 1995 (Monongahela River Locks and Dams 2, 3 and 4 Replacements), 1998 (Kentucky Lock Addition), and 2004 (Chickamauga Lock Replacement).

In correctly concluding that “the system is not sustainable”, the Regional Business Director of the Corps Great Lakes and Ohio River Division reported to the Board at Meeting No. 66 in Pittsburgh that “At the current funding level of \$150 million per year, it will take until 2024 to finish Olmsted, 2033 to finish Lower Mon locks and dams, and 2040 to finish Kentucky Lock.” Chickamauga Lock wasn’t even mentioned in that completely unsatisfactory projection.

To make matters worse, during this 30 plus-year period, no other new lock and dam modernization project will be able to be constructed under the current program because of insufficient funds in the Inland Waterways Trust Fund.

A solution must be found for the project-specific and programmatic problems being posed by the Olmsted project.

As to the project-specific challenge, the following chart, taken from the Executive Summary of the April 2012 Post Authorization Change Report (PACR) for the Olmsted project, helps tell the Olmsted cost escalation and completion delay story.

Table 2. Olmsted Project Costs by Feature (\$ in thousands)

<u>Feature</u>	<u>Authorized</u> 1-Oct-87	<u>Authorized</u> 1-Oct-11	<u>Current</u> 1-Oct-11	<u>Difference</u>
Lands & Damages	\$357	\$690	\$6,059	\$5,369
Relocations	\$3,172	\$6,127	\$1,594	(\$4,533)
Reservoirs	\$3,361	\$6,492	\$0	(\$6,492)
<b>Dam</b>	<b>\$326,733</b>	<b>\$631,122</b>	<b>\$1,722,952</b>	<b>\$1,091,830</b>
Locks	\$355,676	\$687,028	\$486,948	(\$200,080)
Fish & Wildlife Facilities	\$0	\$0	\$12,785	\$12,785
Roads, Railroads, & Bridges	\$700	\$1,352	\$3,643	\$2,291
Channels & Canals	\$6,166	\$11,910	\$50,402	\$38,492
Bank Stabilization	\$0	\$0	\$7,722	\$7,722
Cultural Resources Preservation	\$0	\$0	\$33,126	\$3,126
Buildings, Grounds, & Utilities	\$1,624	\$3,137	\$45,610	\$42,473
Permanent Operating Equipment	\$6,803	\$13,141	\$43,509	\$30,368
Engineering and Design	\$42,245	\$81,601	\$150,374	\$68,773
Supervision & Administration	\$28,163	\$54,400	\$128,460	\$74,060
Operations & Maintenance	\$0	\$0	\$10,616	\$10,616
Contingencies	\$0	\$0	\$244,200	\$244,200
<b>Project Total</b>	<b>\$775,000</b>	<b>\$1,497,000</b>	<b>\$2,918,000</b>	<b>\$1,421,000</b>

The vast majority of Olmsted’s problems -- almost 77% based on the Table’s figures -- can be attributed to the dam feature of the project.

Both the June 6<sup>th</sup> Board Meeting No. 66 held in Pittsburgh and the August 29<sup>th</sup> Board Meeting No.67 held in St. Louis devoted significant attention to the question of how best from an engineering and technical perspective to complete construction of the project. The main point of discussion at both Board meetings, but particularly at the Pittsburgh meeting, was whether completing the dam feature of the project using the currently-employed “In-the-Wet” (ITW) construction method was the best going-forward strategy or, alternatively, whether the Olmsted project should be completed using traditional cofferdam-based “In-the-Dry” (ITD) construction method.

The Board’s understanding of the two different options was informed by the May 31, 2012 assessment of the Olmsted “In-The-Wet” compared to “In-The-Dry” construction methodologies that the Corps Great Lakes and Ohio River Division conducted to explore the matter. Board members had and, in some cases continue to have, questions about some of the assumptions that were made and conclusions reached in the ITW versus ITD assessment. Nonetheless, after much discussion and deliberation, the Board did not feel that it was in a position from a technical perspective to reject the Corps recommendation to support continued construction of the Olmsted dam using the ITW approach. We understand the Corps reached the

critical time for a decision and decided to continue ITW. The Board wonders if a better decision could have been reached if there had been a period of sustained and frank interaction between the Board and the Corps on this pending decision during the time the Board was in hiatus.

### **Growing Congressional Recognition**

While Congress has been aware for a number of years of the looming modernization investment challenges facing our nation's inland waterways system, this awareness is increasingly being described in terms that demand immediate action.

#### **First Session, 112<sup>th</sup> Congress**

In June of 2011, the U.S. House of Representatives Committee Report accompanying the Energy and Water Development Appropriations Act for Fiscal Year 2012 “encourages the Administration to work with industry and the appropriate committees of the Congress to develop an equitable solution to this problem as soon as possible.” The House Appropriations Committee Report correctly, but ominously, emphasized that

“With each fiscal year that passes with no legislative changes to provide additional funding, costs go up for projects delayed or deferred and the chance of one or more significant failures of the aging infrastructure increases.”

In early September 2011, a little more than two months after publication of the House Committee Report, the Senate Appropriations Committee wrote in their version of the Fiscal Year 2012 Energy and Water Development Appropriations Committee Report that “The Committee is deeply troubled by the lack of progress on finding a solution to the funding shortfalls in the Inland Waterways Trust Fund.”

Noting the work that had been done for the Inland Marine Transportation System Capital Projects Business Model Report (referred to as the Capital Development Plan hereafter) to develop the Capital Development Plan recommendations, the Senate appropriators went on to write that “...the Committee believes that the (Capital Development Plan) strategy could have been further modified to develop a plan that was acceptable to all parties.” The Senate Committee Report expressed disappointment in the Administration's response to the Capital Development Plan recommendations and, while expressing a willingness to wait a while longer for the necessary parties to work together to find a solution to the funding issue, declared that “The Inland Waterways System is far too important to allow it to continue to languish with inadequate funding and crumbling infrastructure.”

Shortly after publication of the Senate Appropriations Committee Report, the Subcommittee on Water Resources and Environment of the House of Representatives'

Committee on Transportation and Infrastructure held a hearing on the subject of the “Economic Importance and Financial Challenges of Recapitalizing the Inland Waterways Transportation System”. Inland Waterways Industry witnesses, including Mr. Stephen D. Little (President and CEO of Crouse Corporation and former Chairman of the Inland Waterways Users Board), Mr. Michael J. Toohey (President and CEO of Waterways Council, Inc.), and others testified in strong support of the Capital Development Plan and its recommendations.

### **Second Session, 112<sup>th</sup> Congress**

Congressional awareness of and interest in the inland waterways system continued to build during 2012. In both the House and Senate, hearings were held on the modernization needs of the system.

In the House, the Water Resources and Environment Subcommittee held a hearing on April 18, 2012, on the relationship between reliability of the inland waterways system and economic competitiveness. Mr. Mark Knoy (President and CEO of American Commercial Lines LLC and Jeffboat, Inc.) and Mr. Martin Hettel (Senior Manager, Bulk Sales of American Electric Power (AEP), River Operations) and representatives from the U.S. Army Corps of Engineers, agriculture sector, energy sector, economics profession, and engineering services sector provided testimony about the economic importance of a reliable inland waterways system. Messrs. Knoy and Hettel were particularly strong in their support for adoption of the Capital Development Plan and its recommendations.

In the Senate, the Environment and Public Works Committee held two hearings during 2012 on inland waterways system modernization and other water resources development issues. On September 20, Mr. Richard R. Calhoun (President of Cargo Carriers) testified at the Committee’s request in support of the Capital Development Plan at the Committee’s hearing on “Water Resources Development Act: Growing the Economy and Protecting Public Safety.” On November 15, 2012, the Senate Environment and Public Works Committee held a second hearing on draft legislation developed by the Committee’s Chairwoman, Senator Barbara Boxer of California. The legislative draft contained many of the project delivery reform recommendations in the Capital Development Plan.

Both the Senate and House Appropriations Committees also again addressed the Inland Waterways Trust Fund financing challenge in their respective versions of the Fiscal Year 2013 Energy and Water Development Appropriations Act. The Senate Committee, while noting that it “has been patiently waiting for six budget cycles for a solution to the problems from the administration and the appropriate committees,” decided to “take action on its own” and included statutory language in its bill making a one-year change in the cost sharing for the Olmsted Locks and Dam project in order to make Inland Waterways Trust Fund resources available to continue on-going construction of other inland projects. One week later, the House Appropriations Committee published its comparable Committee Report raising questions about the Olmsted project and “continue(ing) to encourage the Administration to work with industry and the

appropriate committees of the Congress to develop an equitable solution to this problem as soon as possible.”

### **Congressional Action**

A group of leaders in the House of Representatives, led by Congressman Ed Whitfield of Kentucky, has recognized the need to move forward with the Capital Development Plan. Congressman Whitfield introduced the “Waterways are Vital for the Economy, Energy, Efficiency, and Environment Act of 2012” (H.R. 4342), often referred to as the “WAVE4” Bill, which would enact into law many of the provisions of the Capital Development Plan. As of this writing, there are 26 bipartisan co-sponsors to that proposed legislation. In the Senate, Senator Alexander of Tennessee has announced his intention to introduce the American Waterways Act of 2012, which will also bring forward concepts from the Capital Development Plan. The Board notes with interest statements by the Senate Environment and Public Works Committee regarding that committee’s intention to focus on a Water Resources Development Act in the near future.

### **Our Recommendation**

This Board believes that a reliable and efficient system of inland waterways remains as important to the nation today as it was in the Eighteenth Century. We hope that our elected leaders of today will follow the example of our founding fathers, embrace the importance of our inland waterways system, and provide stability for its future. In order to best do so, we should enact a capital development plan, accompany it with appropriations adequate to complete construction on critical projects in a timely manner and ensure the maintenance of the balance of the system. In our 24<sup>th</sup> Annual Report, the Board endorsed and recommended enactment of the Capital Development Plan described in that and prior reports. We reaffirm that recommendation today. Without detracting from any of the other concepts embodied in that recommendation, we especially wish to emphasize the following:

- The Olmsted project needs to be completed as soon as practicable, but further funding of that project should not be cost shared with the Inland Waterways Trust Fund. Industry should not be forced to bear any additional cost over-runs associated with that project. To this point, at the last Board Meeting No. 68 held on December 19, 2012, the Board unanimously endorsed a resolution to not support an increase in the 902 limitation (for Olmsted) if such an increase would involve additional funds being expended toward the project from the Inland Waterways Trust Fund.
- We must increase the overall spending level on our capital projects so that these projects can be completed on a reasonable timeline that does not put the system at risk of failure.

- Many of the project delivery and other reforms can be undertaken today. We are grateful to the Corps for those that have been implemented already and look forward to the implementation of all of our recommendations.

We call on the House of Representatives to pass the “Waterways are Vital for the Economy, Energy, Efficiency, and Environment Act of 2012” (H.R. 4342) and make the Capital Development Plan a reality. We encourage the Senate to consider the American Waterways Act either separately or as a part of its plan to produce a Water Resources Development Act. We are grateful for the steps taken to date and think they must be brought to fruition as soon as practicable.

The Board is mindful that this remains a time of transition, with the terms of all current Board members set to expire shortly and a new Board scheduled to be appointed for the new year. We are grateful to those in Congress who supported the Board during the hiatus and urge your continued oversight over the process of managing the Board to ensure that the Board remains a viable independent voice of the taxpayers who fund half the cost of the current capital investment program.

### **Acknowledgements**

The Inland Waterways Users Board wishes to express its sincere appreciation to Major General Michael J. Walsh, the U.S. Army Corps of Engineers Deputy Commanding General for Civil and Emergency Operations and Executive Director to the Board, Mr. Mark Mazzanti, the Chief of the Corps Civil Works Programs Integration Division, Mr. Mark R. Pointon from the Corps Directorate of Civil Works, the Executive Secretary to the Board, and Messrs. Kenneth E. Lichtman and David V. Grier from the Corps Institute for Water Resources for all the support they provide. Also, the Corps’ division and district staffs and the staffs at Corps Headquarters and the Institute for Water Resources have provided thorough and timely information for the Board’s use. The Board would also like to recognize the professionalism and service of Mr. James E. Walker, Navigation Branch Chief in the Corps Civil Works Operations and Regulatory Division, upon his pending retirement following some 30 years of distinguished service to our nation. We thank him for his advice and partnership and wish him fair winds and following seas.





## **Appendix A**

### **History**

The Inland Waterways Fuel Tax was established to support inland waterways infrastructure development and rehabilitation. Commercial users are required to pay this tax on fuel consumed in inland waterways transportation. Revenues from the tax are deposited in the Inland Waterways Trust Fund and fund 50% of the cost of inland navigation projects each year as authorized. The amount of tax paid by commercial users is \$.20 per gallon of fuel. This tax rate generates approximately \$85 million in contributions annually to the Inland Waterways Trust Fund.

Reflecting the concept of “Users Pay, Users Say”, the Water Resources Development Act of 1986 (Public Law 99-662) (“WRDA ‘86”) established the Inland Waterways Users Board (the “Board”), a Federal advisory committee, to give commercial users a strong voice in the investment decision-making they were supporting with their cost-sharing tax payments. The principal responsibility of the Board is to recommend to the Congress, the Secretary of the Army and the U.S. Army Corps of Engineers the prioritization of new and replacement inland navigation construction and major rehabilitation projects.



## **Appendix B**

### **List of the Fuel Taxed Inland and Intracoastal Waterways and System Map**

Statutory Definitions of Inland and Intracoastal Fuel Taxed Waterways of the United States

SOURCES: Public Law 95-502, October 21, 1978, and Public Law 99-662, November 17, 1986.

1. Alabama-Coosa Rivers: From junction with the Tombigbee River at river mile (hereinafter referred to as RM) 0 to junction with Coosa River at RM 314.
2. Allegheny River: From confluence with the Monongahela River to form the Ohio River at RM 0 to the head of the existing project at East Brady, Pennsylvania, RM 72.
3. Apalachicola-Chattahoochee and Flint Rivers (ACF): Apalachicola River from mouth at Apalachicola Bay (intersection with the Gulf Intracoastal Waterway) RM 0 to junction with Chattahoochee and Flint Rivers at RM 107.8. Chattahoochee River from junction with Apalachicola and Flint Rivers at RM 0 to Columbus, Georgia at RM 155 and Flint River, from junction with Apalachicola and Chattahoochee Rivers at RM 0 to Bainbridge, Georgia, at RM 28.
4. Arkansas River (McClellan-Kerr Arkansas River Navigation System): From junction with Mississippi River at RM 0 to Port of Catoosa, Oklahoma, at RM 448.2.
5. Atchafalaya River: From RM 0 at its intersection with the Gulf Intracoastal Waterway at Morgan City, Louisiana, upstream to junction with Red River at RM 116.8.
6. Atlantic Intracoastal Waterway: Two inland waterway routes approximately paralleling the Atlantic coast between Norfolk, Virginia, and Miami, Florida, for 1,192 miles via both the Albemarle and Chesapeake Canal and Great Dismal Swamp Canal routes.
7. Black Warrior-Tombigbee-Mobile Rivers: Black Warrior River System from RM 2.9, Mobile River (at Chickasaw Creek) to confluence with Tombigbee River at RM 45. Tombigbee River (to Demopolis at RM 215.4) to port of Birmingham, RM's 374-411 and upstream to head of navigation on Mulberry Fork (RM 429.6), Locust Fork (RM 407.8), and Sipsey Fork (RM 430.4).
8. Columbia River (Columbia-Snake Rivers Inland Waterways): From the Dalles at RM 191.5 to Pasco, Washington (McNary Pool), at RM 330, Snake River from RM 0 at the mouth to RM 231.5 at Johnson Bar Landing, Idaho.

9. Cumberland River: Junction with Ohio River at RM 0 to head of navigation, upstream to Carthage, Tennessee, at RM 313.5.
10. Green and Barren Rivers: Green River from junction with the Ohio River at RM 0 to head of navigation at RM 149.1.
11. Gulf Intracoastal Waterway: From St. Mark's River, Florida, to Brownsville, Texas, 1,134.5 miles.
12. Illinois Waterway (Calumet-Sag Channel): From the junction of the Illinois River with the Mississippi River RM 0 to Chicago Harbor at Lake Michigan, approximately RM 350.
13. Kanawha River: From junction with Ohio River at RM 0 to RM 90.6 at Deepwater, West Virginia.
14. Kaskaskia River: From junction with Mississippi River at RM 0 to RM 36.2 at Fayetteville, Illinois.
15. Kentucky River: From junction with Ohio River at RM 0 to confluence of Middle and North Forks at RM 258.6.
16. Lower Mississippi River: From Baton Rouge, Louisiana, RM 233.9 to Cairo, Illinois, RM 953.8.
17. Upper Mississippi River: From Cairo, Illinois, RM 953.8 to Minneapolis, Minnesota, RM 1,811.4.
18. Missouri River: From junction with Mississippi River at RM 0 to Sioux City, Iowa, at RM 734.8.
19. Monongahela River: From junction with Allegheny River to form the Ohio River at RM 0 to junction of the Tygart and West Fork Rivers, Fairmont, West Virginia, at RM 128.7.
20. Ohio River: From junction with the Mississippi River at RM 0 to junction of the Allegheny and Monongahela Rivers at Pittsburgh, Pennsylvania, at RM 981.
21. Ouachita-Black Rivers: From the mouth of the Black River at its junction with the Red River at RM 0 to RM 351 at Camden, Arkansas.
22. Pearl River: From junction of West Pearl River with the Rigolets at RM 0 to Bogalusa, Louisiana, RM 58.
23. Red River: From RM 0 to the mouth of Cypress Bayou at RM 236.
24. Tennessee River: From junction with Ohio River at RM 0 to confluence with Holstein and French Rivers at RM 652.

25. White River: From RM 9.8 to RM 255 at Newport, Arkansas.
26. Willamette River: From RM 21 upstream of Portland, Oregon, to Harrisburg, Oregon, at RM 194.
27. Tennessee-Tombigbee Waterway: From its confluence with the Tennessee River to the Warrior River at Demopolis, Alabama.

# The Fuel-Taxed Inland and Intracoastal Waterway System



