

**INLAND WATERWAYS USERS BOARD  
TWELFTH ANNUAL REPORT  
TO THE  
SECRETARY OF THE ARMY  
AND THE  
UNITED STATES CONGRESS**

**WITH APPENDIXES**

**JULY 1998**



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**INLAND WATERWAYS USERS BOARD  
TWELFTH ANNUAL REPORT  
JULY 1998**

**EXECUTIVE SUMMARY**

The role of the Inland Waterways Users Board (the Board), established by the Water Resources Development Act of 1986 as an advisory committee to Federal policy makers on inland waterways policy, is even more important today than in past years as the Board, the industry, and the government confront drastic reductions in federal dollars for infrastructure investment due to efforts to balance the federal budget. Our ability to compete in the global economy is contingent upon our ability to efficiently transport raw and finished products and commodities. We have the best, most efficient waterways system in the world. However, we cannot maintain our world-class system without proper rehabilitation, small scale improvements, scheduled construction of replacement projects, and the allocation of adequate funds for this purpose.

The Board understands that the Congress is considering a repeal of the 4.3 cents per gallon fuels tax, enacted in 1993 as a deficit reduction tax. If this deficit reduction fuel tax is not repealed by the Congress, the Board recommends that the 4.3 cents per gallon fuels tax associated with and paid by the inland navigation industry be reallocated to the Inland Waterways Trust Fund from revenues to the General Treasury.

The user fee revenues paid by the inland navigation industry will require the Federal Government to meet its obligation to fund 50% of the navigation projects, and the continued implementation of significant construction cost reductions and innovative construction techniques by the Army Corps of Engineers, with Board and industry cooperation. This is consistent with the expected severe financial pressures that will continue into Fiscal Year (FY) 1999 and beyond.

The Board strongly believes that funds spent to maintain and improve our Nation's infrastructure yield benefits for decades and generations to come. While the Congress supports the inland navigation system, at this time it appears that adequate federal funding may not be available to start new projects or to complete continuing construction projects on time or on budget. This could prove to be an extraordinarily expensive short-term solution to help balance the budget. The Board believes that future balanced budgets and our future economic competitiveness will be built upon our national infrastructure, of which the inland waterways are a key component.

A principal responsibility of the Board is to recommend the prioritization of navigation replacement construction and major rehabilitation projects. The Board uses a prioritization format to objectively identify differences between proposed projects. This ranking tool examines eight project factors; condition, capacity and future demand, costs, operating and safety considerations, traffic delays, environmental concerns, timing, and public and political support for projects.

The spending limitations the Corps' Civil Works program is expected to receive will affect all projects and studies. As a result the Board has ranked New and Replacement Construction Projects, Continuing Construction Projects, Major Rehabilitation Projects, and Studies and Future Projects. A summary of our prioritization of the projects and studies for FY 1999 follows:

**NEW AND REPLACEMENT CONSTRUCTION PROJECTS**

**PRIORITY PROJECT DESCRIPTION**

- No. 1 Inner Harbor Navigation Canal (IHNC) Lock, Louisiana.  
A larger lock between the Mississippi River and the Industrial Canal is needed to eliminate huge delays that are consistently higher than at any other lock on the inland navigation system. The Board has ranked the IHNC Lock higher than most other inland navigation projects recently prioritized for construction. The Board strongly recommends that funds be appropriated to initiate construction of the IHNC Lock in FY 1999, and construction proceed at the Corps' full capability.

**CONTINUING CONSTRUCTION PROJECTS**

The Board recommends the continuation and completion of the following Continuing Construction Projects by the rankings recommended below. Note that two projects included in previous Board recommendations, Grays Landing Lock and Dam (old Lock and Dam 7), Monongahela River, Pennsylvania and Gulf Intracoastal Waterway (GIWW), Sargent Beach, Texas, were funded in FY 1998 to complete construction and so are not included below.

**PRIORITY PROJECT DESCRIPTION**

- No. 1 Olmsted Locks and Dam, Illinois and Kentucky consists of new locks and a dam to replace the Ohio River Locks and Dams No.s 52 and 53. Virtually all traffic moving between the Ohio River and the Mississippi River and their tributaries moves through Olmsted. The Board recommends completion of this project as soon as possible.

- No. 2 Robert C. Byrd (formerly Gallipolis) Locks and Dam, West Virginia and Ohio. The rehabilitation of the existing dam should be completed as soon as possible.
- No. 3 Monongahela River Locks and Dams 2, 3 and 4, Pennsylvania are the last of the old and undersized locks and dams on the Monongahela River and have been in service for almost 100 years. The Dam at Lock 2 and the Locks and Dam at Lock 3 are badly deteriorated and subject to failure.
- No. 4 Winfield Lock and Dam, West Virginia. The new lock became operational in November 1997. The Board recommends completion of the entire project as soon as possible.
- No. 5 McAlpine Locks and Dam, Kentucky and Indiana. Congestion, navigation complexities and obsolescence are expected to result in significant delays by the year 2000. The Board recognizes the need for a new chamber, but with constrained funding this project can be delayed. Funds to initiate construction were appropriated in FY 1996.
- No. 6 Marmet Locks and Dam, Kanawha River, West Virginia. Funds to initiate the construction phase of this project were appropriated in FY 1998. Upon the opening of the new Winfield lock to traffic in November 1997, the excessive delays previously experienced there migrated to Marmet making it the busiest project in terms of lockages. These two locks should be viewed as an integrated system and this project should have been considered integral to the Winfield project and constructed concurrently using a systems approach. The Board strongly endorses the use of innovative design and construction techniques to reduce project costs.
- No. 7 Kentucky Lock, Kentucky. Funds to initiate the construction phase of this project were appropriated in FY 1998. Recognizing the future need for increased capacity at Kentucky Lock due to strong tonnage demand on the Tennessee River, the Board wants the Corps to evaluate improving Barkley Lock and the Cumberland River corridor to see if a more satisfactory alternative exists. Also, traffic control measures can be utilized to help alleviate traffic congestion.

**SPECIAL CONSIDERATION OF TWO FEDERALLY FUNDED PROJECTS**

Construction was initiated at the Montgomery Point Lock and Dam, Arkansas, project in 1996. The Board recognizes a need at Montgomery Point and fully supports the decision by the Congress to build this project using 100% federal funds as it was included in the original authorization for the McClellan-Kerr Arkansas River System.

The Gulf Intracoastal Waterway (GIWW) - Aransas National Wildlife Refuge (ANWR), Texas, project will address erosion caused by waterway traffic and natural wave action along a 31 mile stretch of the GIWW, 13 miles of which traverse the ANWR. The Board strongly supports a balance of economic and environmental values, and is working closely with all interests to preserve environmental interests and continue vital navigation. The Board supports the decision to construct this project using 100% federal funds.

### **MAJOR REHABILITATION PROJECTS**

The Board believes that cost sharing for Major Rehabilitation Projects is a prudent and wise investment of scarce resources, although the inland navigation industry agreed to compromise on funding such projects despite the lack of statutory support. The use of Inland Waterways Trust Fund and matching federal funds for rehabilitation will delay spending far larger sums on capital replacement projects. The Board strongly recommends that roughly \$40 million a year be programmed for the major rehabilitation program.

#### **PRIORITY PROJECT DESCRIPTION**

- |       |   |
|-------|---|
| No. 1 | <u>Lock and Dam 24 Part 1, Mississippi River, Illinois and Iowa.</u> This is the first of a two part rehabilitation effort for this facility. The major rehabilitation work on the miter gates, miter gate machinery, power distribution system, lock motors and control system, debris openings in the dam guardwall, and repairs to the dam bridge columns is necessary for continued operations. The Board strongly objects to the rehabilitation work for this facility costing about \$70 million (see Priority 5) and recommends that the funds be utilized for construction of a new 1200 foot lock with only minimal rehabilitation work to ensure adequate short term lock serviceability. |
| No. 2 | <u>Lock and Dam 25, Mississippi River, Illinois and Iowa.</u> The major rehabilitation work on the miter gates and miter gate machinery, culvert valves, bridge, power distribution system, lock motors and control system, and abutment is necessary for continued operations.   |

- No. 3     Lock and Dam 3, Mississippi River, Minnesota. Funds to initiate rehabilitation work at this project were appropriated in FY 1998. The major rehabilitation work includes repairs and modifications of the spot dikes and the main embankment to protect the dikes and prevent probable failure of the embankment system and loss of pool which would stop navigation.
  
- No. 4     Lock and Dam 14, Mississippi River, Illinois and Iowa. The major rehabilitation work on the lock chamber, dam piers, operating machinery, and electrical system is necessary for continued operations.
  
- No. 5     Lock and Dam 24 Part 2, Mississippi River, Illinois and Iowa. This the second part of the major rehabilitation work identified for this facility. This effort includes rehabilitation of the existing lock landwall, intermediate wall, upstream and downstream guidewalls, and the Illinois Abutment. The Board strongly objects to the rehabilitation work for this facility costing about \$70 million (see Priority 1) and recommends that the funds be utilized for construction of a new 1200 foot lock with only minimal rehabilitation work to ensure adequate short term lock serviceability.
  
- No. 6     London Locks and Dam, Kanawha River, West Virginia, is over 60 years old and the size of the chambers restrict the use of modern, efficient towing equipment. The Board agrees only a major rehabilitation is necessary at London and is unaware of additional investment needs eligible for cost sharing with the Inland Waterways Trust Fund. The rehabilitation work is necessary for continued operations.

**STUDIES AND FUTURE PROJECTS**

The Board has ranked Studies and Future Projects because they will identify future navigation projects necessary to continue a viable waterways system.

**PRIORITY   STUDY DESCRIPTION**

- No. 1     Upper Mississippi and Illinois Navigation, Illinois, Iowa, Minnesota, Missouri, and Wisconsin is using a systems approach to address the need for navigation capacity expansion along the Mississippi River between Minneapolis-St. Paul and the Ohio River, and along the Illinois Waterway. The principal problems are, (1) delays to commercial traffic at locks upstream of Melvin Price Locks and Dam, and (2) system congestion resulting in competition and conflict between

recreational and commercial users. The Board strongly recommends adequate funding should be appropriated to complete this study as soon as possible. The future navigation needs of this waterway segment must be determined to initiate construction of needed replacement facilities. Furthermore, the Board recommends that the Corps pursue authorization for the construction of new 1200 foot locks at Locks and Dams 25, 24, 22, 21 and 20 on the Mississippi River.

- No. 2 Intracoastal Waterway Locks, Louisiana - Seven Intracoastal Waterway Locks in southern Louisiana, between the Mississippi River and the Sabine River, are being studied to determine the best way to relieve capacity constraints.
- No. 3 Ohio River Mainstem Study, Illinois, Indiana, Kentucky, Ohio, Pennsylvania and West Virginia is addressing the economic, social and environmental impacts of both large scale investments and small scale improvements for additional lock capacity at the Ohio River Mainstem navigation facilities.
- No. 4 Gulf Intracoastal Waterway - High Island to Brazos River, Texas is addressing problems affecting commercial navigation including two 90 degree bends, a double "S" curve and a lack of mooring facilities and navigational aids, traffic congestion, dredged material disposal needs, and environmental resources and impacts. The Board is concerned with dredged material management and maintaining navigation.
- No. 5 Gulf Intracoastal Waterway - Brazos River to Port O'Connor, Texas is addressing problems affecting commercial navigation, shoaling, bank erosion and loss of wetlands, deficiencies in mooring facilities and navigational aids, dredged material disposal needs, and environmental resources and impacts. The Board is concerned with dredged material management and maintaining navigation.
- No. 6 Gulf Intracoastal Waterway - Port O'Connor to Corpus Christi Bay, Texas is addressing problems affecting commercial navigation and hazards caused by curves in the channel and a swing bridge, dredged material disposal needs, and environmental resources and impacts. The Board is concerned with dredged material management and maintaining navigation.
- No. 7 Kanawha River Navigation, West Virginia is examining the navigation facilities on the Kanawha River. The

recently opened locks at Winfield and a new lock authorized at Marmet will address navigation capacity constraints. The study examining the navigation facilities on the Kanawha River at London has recommended that this facility undergo a major rehabilitation.

- No. 8 Green and Barren Rivers Navigation Disposition Study, Kentucky will recommend whether the current caretaker status is warranted or whether the projects should be de-authorized. A Feasibility report completed in 1993 concluded modernization and improvement of the system for commercial navigation was not economically justified, but the upper portion of the system still provides recreation opportunities and serve as a source of water supply for the region.

The long-term objective of the Board that is now submitted to the Congress and the Executive Branch involves rehabilitating and extending the life of the existing system to preserve its efficiency, coupled with a program for constructing needed replacement navigation facilities. The ultimate consequence is an efficient, competitive and safe waterways system without the imposition of higher fuel taxes. The timely completion of required navigation projects is critical to a viable and reliable waterways system and is a key component of the Nation's infrastructure.

By carefully scheduling replacement construction starts, the Board is convinced that necessary major rehabilitation and the replacement projects discussed above can be accomplished in the next 10 years based on current Inland Waterways Trust Fund revenue projections and assuming matching federal funds by the Corps of Engineers.

**INLAND WATERWAYS USERS BOARD  
TWELFTH ANNUAL REPORT  
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**ANNUAL RECOMMENDATIONS AND PRIORITIES**

**I. INTRODUCTION AND BACKGROUND**

The Inland Waterways Users Board (the Board) is composed of 11 members that represent different geographical sections of the nation and different cargos such as farm products, coal, and petroleum products and petrochemicals. The Board meets three times each year to develop and make recommendations to the Secretary of the Army and the Congress regarding construction and major rehabilitation priorities, and spending levels on the commercial navigation features of the inland waterways system. In exercising this responsibility, the Board must carefully balance fuel tax revenues flowing into the Inland Waterways Trust Fund against the navigation project construction and major rehabilitation expenditures proposed and advocated by waterways users, exporters, the Administration, Congress, and others. Under the provisions of the Water Resources Development Act (WRDA) of 1986, the barge industry pays a 20-cent-per-gallon fuel tax as of January 1, 1995. It should be noted that the commercial barge industry is the only beneficiary of the inland waterways system which pays a users fee/diesel tax. These revenues are deposited in the Inland Waterways Trust Fund which pays 50% of the cost of replacement construction and major rehabilitation projects with the Federal Government paying the other 50%. Maintenance of the existing fuel-taxed system is and has always been a 100% Federal responsibility.

The Board understands that the Congress is considering a repeal of the 4.3 cents per gallon fuels tax, enacted in 1993 as part of the tax package for deficit reduction. The Board fully supports this initiative. If not repealed, the Board recommends that legislation be enacted that reallocates the 4.3 cents per gallon fuels tax associated with and paid by the inland navigation industry to the Inland Waterways Trust Fund from the General Treasury.

The Board's advisory role will be critical during the next decade because of federal financial limitations, and apparent changing attitudes in the Administration relative to the desirability of continued waterways infrastructure promotion and development which the Board believes are based on a misunderstanding of the national importance and global market significance of a viable inland waterways system.

The Board recognizes these changing circumstances and assumes an appropriate level of responsibility for recommending to the Administration and the Congress a program for spending Inland Waterways Trust Fund revenues that will first attempt to keep in good working order the system we already have, and second, enhance the efficiency of the system where those commitments can be made without increases in the fuel taxes, and then only on those projects which must be replaced.

The Board and the industry believe that the efficiency of the inland waterways system can be maintained and enhanced without spending money at levels which would deplete the Inland Waterways Trust Fund to a point which might cause some to impose additional fuel taxes. However, the Federal Government must meet its obligation to fund its share of projects to insure a viable system. Board members, as active daily participants in the business of producing and transporting a wide variety of agricultural commodities, coal, petroleum products and chemicals, see how world markets are changing to reflect new low cost producers' efforts to capture overseas markets.

For your benefit, a summary of **Inland Waterways Users Board Meeting No. 31**, held in Charleston, West Virginia, on November 21, 1997, is included as Appendixes C.

Inland Waterways Users Board Meeting No. 32 was held in Paducah, Kentucky, on July 16, 1998, and the Board's next meeting is tentatively scheduled to be held in New Orleans, Louisiana, during November 1998.

## **II. RECOMMENDATIONS AND PRIORITIES**

### **THE BOARD'S PERSPECTIVE ON NEW INFRASTRUCTURE CONSTRUCTION**

The Board supports a balanced program including replacement construction, major rehabilitation and small scale improvements of navigation facilities without the imposition of additional fuel taxes. The Board is very concerned with the strong possibility of reduced federal funding to match the funds currently being generated by the fuel taxes. With matching federal funds, the primary goal must be to cut costs and spending before entertaining the question of raising taxes.

The Board is unequivocally opposed to any increase in user fees be they fuel taxes, lockage or congestion fees, or ton-mile fees. The Board strongly believes maintenance of the existing system is a 100% Federal responsibility and hopes several measures aimed towards project and operating cost reductions will preclude any other proposals for fuel tax increases.

The Board applauds the efforts of the Corps to re-engineer many of its business and engineering processes and for taking the difficult steps to reorganize its divisional offices, restructure divisions and districts and consolidate functions into more efficient work groups to achieve some efficiencies that produce cost savings and better utilization of Corps resources. The Board supports these efforts and encourages the Corps and Congress to continue to review restructuring with the goal of making the best use of the existing Corps resources. Additionally, the Board is aware of and supports suggestions for outsourcing selected activities to gain operating efficiencies. As the Corps continues to refine its role and mission, the Board requests that proposals for achieving these kinds of efficiencies and savings be supported. The Board also requests that it be kept abreast of such activities.

The Board also applauds the Corps' decision to adopt innovative design and construction techniques and other cost saving concepts, and their partnering work groups with industry to reduce project costs.

The Board strongly supports navigation construction and rehabilitation projects that are affordable within the existing fuel tax rate structure, income of the Inland Waterways Trust Fund and matching federal funds. The Board is convinced that project costs can be reduced through innovative design and construction techniques like those discussed above. It is a much better bargain to build the projects awaiting construction, at significantly reduced costs, than to realize only one or two of these new starts each decade at inflated costs of yesteryear. Alternatively, should the Congress approve projects absent cost reductions, additional scarce federal resources will be spent and increased pressure will be exerted to impose additional fuel taxes which could render our inland and coastal shallow draft system largely uncompetitive and obsolete. The recommended investment program should reflect these cost reduction targets. Finally, investments must be prioritized within the constraint imposed by the Inland Waterways Trust Fund and availability of matching federal funds.

#### **OVERVIEW OF THE BOARD'S RECOMMENDED NAVIGATION INVESTMENT PROGRAM**

The Board has formulated a recommended navigation investment program with the following components:

Continuing Construction Projects. The Board's recommended program includes ongoing navigation construction and major rehabilitation projects. Two high priority projects recommended by the Board in previous annual reports, the Marmet Locks and Dams Replacement, and the Kentucky Lock Addition, migrated to the

Continuing Construction Projects category in 1998 as construction was initiated at these sites.

Major Rehabilitation Projects. The Board-recommended program includes adequate resources for project rehabilitation. Any navigation investment program should include a major rehabilitation element. These expenditures support and extend the existing waterways assets.

New and Replacement Construction Projects. The Board has prioritized investment in navigation projects where construction can be initiated in the near future. Federal funds for these projects must be available to match the 50% share from the Inland Waterways Trust Fund. The Board's program assumes scheduling of these projects in priority order and at a pace that maintains a positive Inland Waterways Trust Fund balance.

Studies and Future Projects. While not representing capital expenditures, planning studies are currently underway to identify the future navigation investment needs. The Board recognizes that as potential projects are identified by these studies, investment priorities will have to be revisited. The Board has provided their perspective and recommendations on the studies.

#### **CONTINUING CONSTRUCTION PROJECTS**

The Board recommends continuation and completion of the following navigation projects under currently approved schedules, but with special emphasis on project management, cost control, and innovative cost reduction techniques to complete the project within budget.

Two projects included in previous Board recommendations are not included below. Grays Landing Lock and Dam (old Lock and Dam 7), Monongahela River, Pennsylvania Priority 5 in the Board's 1997 annual report, was appropriated \$2.9 million for FY 1998 to complete construction, and Gulf Intracoastal Waterway (GIWW), Sargent Beach, Texas, Priority 6 in the 1997 annual report, was appropriated \$3.0 million for FY 1998 to complete construction.

**PRIORITY 1:** Olmsted Locks and Dam, Illinois and Kentucky. Olmsted, authorized in the Water Resources Development Act of 1988, will replace the Ohio River Locks and Dams 52 and 53 and is located in Pulaski County, Illinois and Ballard County, Kentucky on the Ohio River near Olmsted, Illinois. It will consist of twin 110 by 1200-foot locks and a dam comprised of a 2,200-foot navigable pass and a fixed weir. Temporary 110 by 1200-foot locks were completed at Locks and Dams 52 and 53 in 1969 and 1980, respectively, to permit transit of 15 barge tows with one lockage. Virtually all traffic moving between the Ohio River and tributaries and the Mississippi River and tributaries moves through the project area.

1999 Total Estimated Project Cost: \$1.02 billion with \$54.5 million requested for FY 1999 to continue lock construction, and \$632.53 necessary after FY 1999.

**PRIORITY 2:** Robert C. Byrd Locks and Dam, West Virginia and Ohio. The project (formerly Gallipolis), authorized in the Water Resources Development Act of 1986, is located at Ohio River mile 279.2 in the Middle Ohio Valley, about 30 miles upstream from Huntington, West Virginia. The newly completed 110 by 1200-foot main chamber and 110 by 600-foot auxiliary chamber provides better lock approach conditions. The project also includes rehabilitation of the existing dam, replacing the roller gates and strengthening its foundation. The project eliminates a major congestion problem, a severe navigation hazard, and increasingly difficult O&M problems due to old age. The locks became operational in 1993 and the dam rehabilitation is continuing.

1999 Total Estimated Project Cost: \$373 million with \$7.0 million requested for FY 1999 to continue the existing dam rehabilitation and mitigation activities, and \$22.08 million necessary after FY 1999.

**PRIORITY 3:** Monongahela River Locks and Dams 2, 3 and 4, Pennsylvania. The project is located on the lower portion of the Monongahela River near Pittsburgh, Pennsylvania, and was authorized by the Water Resources Development Act of 1992. These three facilities are the last of the old and undersized locks on the Monongahela River and have been in service for almost 100 years. The Dam at Lock 2 and the Locks and Dam at Lock 3 are badly deteriorated and subject to failure. The condition and size of these locks are a major impediment to low cost water transportation on the Monongahela River and the Upper Ohio River. Construction was initiated in 1995. The project consists of a new gated dam to be installed at Lock and Dam 2, and new twin 84 by 720-foot chambers at Lock and Dam 4, which will provide adequate capacity to meet the needs of navigation on the Lower Monongahela River for the next 50 years.

1999 Total Estimated Project Cost: \$705 million with \$4.5 million requested for FY 1999 for Engineering and Design (E&D), real estate and relocation activities, and \$646.3 million necessary after FY 1999.

**PRIORITY 4:** Winfield Lock and Dam, West Virginia. The Winfield Locks and Dam project, authorized for construction in the Water Resources Development Act of 1986, is located on the Kanawha River near Eleanor, West Virginia, about 31 miles above the confluence with the Ohio River. Winfield was the busiest project in the inland navigation system in terms of lockages

until the new 110 by 800-foot lock became operational in November 1997. The existing 56 year old, twin 56 by 360-foot chambers are being used as auxiliary locks. The project, including a 110-foot wide non-navigable gate bay, is scheduled for completion in 2002.

1999 Total Estimated Project Cost: \$221.6 million with \$4.5 million requested for FY 1999 to continue construction, and \$4.75 million necessary after FY 1999.

**PRIORITY 5: McAlpine Locks and Dam, Kentucky and Indiana.**

The project is located in Louisville, Kentucky, on the Lower Ohio River. Funds to initiate construction were appropriated in FY 1996. The project was authorized in 1990 and calls for a new 110 by 1200-foot lock chamber to replace an old chamber. Congestion, navigation complexities and obsolescence are expected to cause major delays by the year 2000. The project consists of a new 1200-foot lock to be constructed to replace the old 600-foot auxiliary lock using innovative design and construction methods to achieve reduced costs, and the construction of a new bridge to access Shippingport Island.

1999 Total Estimated Project Cost: \$268 million with \$1.0 million requested for FY 1999 for planning and E&D, and \$246.9 million necessary after FY 1999.

**PRIORITY 6: Marmet Locks and Dam, Kanawha River, West**

Virginia. The project is located in Kanawha County near Belle, West Virginia, on the Kanawha River about 68 miles above the confluence with the Ohio River. Funds to initiate construction were appropriated in FY 1998. The project was authorized in the Water Resources Development Act of 1996 and calls for the addition of an 110 by 800-foot lock on the landward side of the existing chambers. With the new lock now operational at Winfield, this facility is the busiest lock in the inland navigation system due to its small twin 56 by 360-foot chambers, which can only process one modern 35 by 195-foot barge at a time, and excessive navigation delays have increased significantly causing serious congestion problems. This project is over 60 years old and the size of the chambers severely restrict the use of modern, efficient towing equipment. The Marmet and Winfield locks must be viewed as an integrated system and the Board strongly believes this project should have been integral to the Winfield project and constructed concurrently.

1999 Total Estimated Project Cost: \$286.7 million with \$1.5 million requested for FY 1999 to initiate land acquisition, and \$273.43 necessary after FY 1999.

**PRIORITY 7: Kentucky Lock, Kentucky.** The Kentucky Lock and Dam project is located in Livingston County, Kentucky on the

Tennessee River, 22.4 miles above the confluence with the Ohio River. The project was authorized for construction in the Water Resources Development Act of 1996, and calls for an additional lock measuring 110 by 1200-feet landward of the existing lock. Funds to initiate construction were appropriated in FY 1998. The facility faces potential increased traffic stemming from: (1) increasing Cumberland River traffic using Barkley Canal and Kentucky Lock rather than the Lower Cumberland River; (2) increasing Tennessee River traffic; and (3) new traffic using the Tennessee-Tombigbee Waterway. Lock delays average 5 hours and occasionally some are as much as 19 hours. While recognizing projected traffic growth and the need for increased capacity at Kentucky Lock in the future, the Board would like the Corps to evaluate improving Barkley Lock and the Cumberland River corridor to make it a more satisfactory alternative to Kentucky Lock as an interim measure. Currently, Barkley is only utilizing eight to ten percent of capacity. The Board believes a non-structural traffic control system can be employed to delay the construction of a replacement chamber at Kentucky Lock.

1999 Total Estimated Project Cost: \$395 million with no funds requested for FY 1999 to continue construction.

#### **MAJOR REHABILITATION PROJECTS**

The Board continues to believe that appropriately timed use of Inland Waterways Trust Fund monies for major rehabilitation of projects is a fiscally sound and wise investment of scarce dollars. The inland navigation industry agreed to compromise on funding such projects despite the lack of statutory support. The use of these funds for rehabilitation will delay the spending of far larger sums on capital replacement projects.

The Board wishes to make special mention of future infrastructure needs as related to the major rehabilitation program. The key factor in assessing future needs is costs, especially in light of the level of traffic growth on the system.

As part of the Water Resources Development Act of 1992, the Inland Waterways Trust Fund pays 50% of the cost of major rehabilitation which is work designed to extend the life of a project without having to completely replace it. Over the next few decades there will be roughly \$40 million a year of additional major rehabilitation required, half of which will be paid from the Inland Waterways Trust Fund. This will constitute a major future obligation for the inland navigation industry. Many parts of the system are in need of major repairs, and the magnitude of expenditures required, plus the number of eligible projects, means that major rehabilitation is equivalent to about two replacement construction project starts every decade. If actual needs exceed or fall short of \$40 million annually, the

scheduling and pace of replacement construction projects would be affected accordingly.

Unfortunately, the major rehabilitation projects currently underway or expected soon for the Upper Mississippi River are needed to ensure continued operation of that waterway segment because construction of necessary replacement facilities cannot be advanced in the proper time frame. This is of major concern to the Board because these major rehabilitation projects do not address the significant capacity constraints on the Upper Mississippi River.

#### **PRIORITIZATION OF MAJOR REHABILITATION PROJECTS**

**PRIORITY 1:** Lock and Dam 24 Part 1, Mississippi River, Illinois and Iowa. This is the first part of a two part rehabilitation effort for this facility. The project is located at Mississippi River Mile 273.5 above the mouth of the Ohio River, in the vicinity of Clarksville, Missouri. Rehabilitation work includes the replacement of miter gates and miter gate machinery, the auxiliary lock closure structure, power distribution system, lock motors and controllers, and control system; addition of a protection cell, bendway weirs, and debris openings in the dam guardwall; and repairs to the dam bridge columns. The Board strongly objects to the rehabilitation work for this facility, cumulatively costing approximately \$70 million (see Priority 5). The Board recommends that the funds be utilized for construction of a new 1200 foot lock with only minimal rehabilitation work to ensure adequate lock serviceability during the construction of the new 1200 foot lock.

1999 Total Estimated Project Cost: \$24.99 million with \$7.1 million requested for FY 1999 and \$9.97 million necessary after FY 1999.

**PRIORITY 2:** Lock and Dam 25, Mississippi River, Illinois and Iowa. The project is located at Mississippi River Mile 241.1 above the mouth of the Ohio River, in the vicinity of Winfield, Missouri. Major work includes the rehabilitation or replacement of miter gates and miter gate machinery, culvert valves, the auxiliary lock closure structure, Sandy Slough bridge, power distribution system, lock motors and controllers and control system; repairing the Illinois abutment; and installing a lock dewatering system.

1999 Total Estimated Project Cost: \$22.4 million with \$4.9 million requested for FY 1999 and \$4.46 million necessary after FY 1999.

**PRIORITY 3: Lock and Dam 3, Mississippi River, Minnesota.**

The project is located on the Mississippi River 56 miles downstream from Minneapolis and six miles upstream of Red Wing, Minnesota. The facility has a main embankment that is subject to overtopping and severe damage during major flood events, and an extensive system of spot dikes that are deteriorating at an accelerated rate. Major rehabilitation work includes repairs and modifications of the system of spot dikes and the main embankment to protect the dikes and prevent probable failure of the embankment system and loss of pool which would curtail navigation if left in the current condition.

1999 Total Estimated Project Cost: \$12.4 million with \$6.2 million requested for FY 1999 and \$5.45 million necessary after FY 1999.

**PRIORITY 4: Lock and Dam 14, Mississippi River, Illinois and Iowa.** The project is located at Mississippi River Mile 493.3, near the city of LeClaire, Iowa. Major rehabilitation work includes resurfacing of concrete in the lock chamber and on dam piers, replacement of operating machinery and the electrical system, installation of a bubbler system in the lock chamber and replacement of roller and tainter gate chain hoisting equipment.

1999 Total Estimated Project Cost: \$21.0 million with \$4.4 million requested for FY 1999 and \$4.22 million necessary after FY 1999.

**PRIORITY 5: Lock and Dam 24 Part 2, Mississippi River, Illinois and Iowa.** This is the second part of the major rehabilitation work identified for this facility. The project is located at Mississippi River Mile 273.5 above the mouth of the Ohio River, in the vicinity of Clarksville, Missouri. This effort includes rehabilitation of the existing lock landwall, intermediate wall, upstream and downstream guidewalls, and the Illinois Abutment. The Board strongly objects to the rehabilitation work for this facility, cumulatively costing approximately \$70 million (see Priority 1). The Board recommends that the funds be utilized for construction of a new 1200 foot lock with only minimal rehabilitation work to ensure adequate lock serviceability during the construction of the new lock. Furthermore, the Board recommends that the Corps accelerate completion of the Upper Mississippi River - Illinois Waterway study and pursue authorization for the construction of new 1200 foot locks at Locks and Dams 25, 24, 22, 21 and 20 on the Mississippi River.

1999 Total Estimated Project Cost: \$38.37 million with \$2.4 million requested for FY 1999 for E&D and initiation of work

on the Illinois Abutment, and \$35.97 million necessary after FY 1999.

**PRIORITY 6: London Locks and Dam, Kanawha River, West Virginia.** The project is located at mile 82.8 on the Kanawha River above the confluence with the Ohio River. The study examining the navigation facilities on the Kanawha River has recommended that the facility at London undergo a major rehabilitation. This project is over 60 years old and the size of the chambers severely restrict the use of modern, efficient towing equipment. Future delays will increase significantly with the completed construction of a new lock at Winfield and a new lock authorized at Marmet. The Board agrees that condition problems here warrant major rehabilitation, but is unaware of additional investment needs eligible for cost sharing with the Inland Waterways Trust Fund.

1999 Total Estimated Project Cost: \$20.2 million with \$1.7 million requested for FY 1999 for E&D and to initiate construction, and \$17.3 million necessary after FY 1999.

#### **NEW AND REPLACEMENT CONSTRUCTION PROJECTS**

The Board developed a prioritization process for ranking projects pending construction approval. In order to arrive at a national prioritization ranking, the following factors were considered:

- X Structural condition of project;
- X Capacity and forecasted demand;
- X Benefit-to-cost (B/C) ratio;
- X Operational problems that affect navigation safety or efficiency;
- X Traffic delays;
- X Environmental issues;
- X Timing with respect to the Inland Waterways Trust Fund balance; and
- X Support or opposition for the project.

#### **PRIORITIZATION OF NEW AND REPLACEMENT CONSTRUCTION PROJECTS**

The Board's recommended new and replacement inland navigation project construction program includes projects eligible for 50% funding from the Inland Waterways Trust Fund. Using the eight prioritization factors previously discussed,

these projects are listed in priority order, along with Board recommendations and comments.

**PRIORITY 1: Inner Harbor Navigation Canal (IHNC) Lock, Louisiana.** The IHNC Lock is a part of the Mississippi River - Gulf Outlet, Louisiana (MRGO) project, a deep draft seaway canal extending from New Orleans to the Gulf of Mexico, east of the Mississippi River. One of the MRGO project's four basic items is a new lock with connecting channels at the IHNC. Construction of a replacement lock was authorized in 1956. The existing lock was completed in 1923 by non-federal interests and ultimately ended up being purchased by the Corps in 1986. The existing facility is a vital link between the Mississippi River and the GIWW, and is a connecting link for ship traffic between the MRGO and the Mississippi River at New Orleans. The IHNC Lock is located in a highly congested urban and commercial area and forecasted future traffic will significantly exceed the lock's capability. Based on Congressional guidance, an open planning process has been adopted in an attempt to build consensus among the major stakeholders. Also, the Water Resources Development Act of 1996 authorized a comprehensive community impact mitigation plan to be implemented in conjunction with the lock project.

1999 Total Estimated Project Cost: \$531 million including \$463 million for the shallow draft portion and \$68 million for the deep draft (estimated incremental cost). The requested amount for FY 1999 is \$2.0 million to continue planning and E&D. No amount has been requested for construction for FY 1999. The Port of New Orleans has stated they would fund the entire deep draft increment of the lock. The Water Resources Development Act of 1986 provided that the costs allocable to inland navigation (shallow draft) be cost shared with the Inland Waterways Trust Fund.

Recommendations and Comments: A strong need exists for this replacement lock to eliminate huge delays that are consistently higher than at any other lock on the inland navigation system. The Board has ranked the IHNC Lock higher than most other inland navigation projects recently prioritized for construction. The Board strongly recommends that \$13 million be appropriated in FY 1999 to initiate construction of the IHNC Lock and construction proceed at the Corps' full capability. Innovative construction methods are being utilized to achieve significant cost savings, such as cellular, pre-cast and float-in construction. The Board recommends that costs be allocated to the shallow and deep draft portions accordingly and concurs with cost sharing the shallow draft portion from the Inland Waterways Trust Fund. The Board reluctantly accepts the cost allocation formula

used by the Corps to assign project costs between the shallow and deep draft portions of this project.

### **SPECIAL CONSIDERATION OF TWO 100% FEDERALLY FUNDED PROJECTS**

The Board also wants to address two other projects included in previous annual reports which are now 100% federally funded.

Montgomery Point Lock and Dam, McClellan-Kerr Arkansas River Navigation System, Arkansas. The McClellan-Kerr Arkansas River Navigation System consists of 17 locks and dams stretching 445 miles across 15 counties in Arkansas and six counties in Oklahoma. The project, dedicated in 1971, begins at the confluence of the Mississippi and White Rivers and continues to the Port of Catoosa near Tulsa, Oklahoma, via the Arkansas Post Canal, Arkansas River, and Verdigris River. Tonnage on this waterway grew at a steady rate until the mid-eighties when the combination of low water, the degradation of the bottom, and the increased hydraulic efficiency of the Mississippi River caused a low-water problem in the entrance channel. During periods of low water, less than full navigable depths create problems for the entire system. The original authorization in Public Law 79-525, dated July 24, 1946, included a lock and dam near the confluence of the White and Mississippi Rivers, the approximate location of Montgomery Point, but the decision was made at that time to defer construction until need was demonstrated. The Corps recommended construction of Montgomery Point Lock and Dam to solve the problem and construction was initiated in 1996 and is now ongoing. The Board recognizes the need for Montgomery Point Lock and Dam, agrees with and fully supports the decision made by the Congress to construct it using 100% federal funds as the Board feels this project is INCLUDED in the original authorization for the McClellan-Kerr Arkansas River Navigation System and should be considered a 100% federal responsibility since it was deferred by the Federal Government during the initial construction phase. Further, the Board recommends that Montgomery Point, like all inland waterways construction projects, be thoroughly evaluated for cost savings, particularly since the low head and the projected utilization rate of less than 100% makes the project a candidate for innovative design and construction techniques.

1999 Total Estimated Project Cost: \$242 million with \$19 million requested for FY 1999 to continue lock and dam construction, and \$182.27 million necessary after FY 1999. The project is scheduled for completion in March 2007.

Gulf Intracoastal Waterway (GIWW) - Aransas National Wildlife Refuge, Texas. The project is located approximately 35 miles northeast of Corpus Christi, Texas. Erosion caused by waterway traffic and natural wave action is occurring along a 31

mile stretch of the GIWW, 13 miles of which traverse the refuge. The bank erosion of 1.5 to 3 feet per year damages the designated critical winter habitat of the rare and endangered whooping crane, as well as for many other birds and mammals. The Board strongly supports the harmonization of economic and environmental values and intends to work closely with all interests to preserve environmental interests while continuing vital navigation services. The Board wishes to draw attention, in this regard, to the study findings which cite natural causes, along with navigation, impacting the resources in question. The project, authorized in the Water Resources Development Act of 1996, will provide bank protection of the current channel alignment and incorporate beneficial uses of dredged material to protect and create habitat. The Board concurs with the decision to construct this project using 100% federal funds and it not be cost shared with the Inland Waterways Trust Fund. The Board recommends that construction of this project, initiated in FY 1998, continue and be completed as soon as possible to resolve these critical issues.

1999 Total Estimated Project Cost: \$18.3 million with \$2.8 requested for FY 1998 to initiate construction. No funds have been requested for FY 1999 to continue construction.

#### **STUDIES AND FUTURE PROJECTS**

The Board recognizes that additional investment needs will be identified by pre-authorization planning studies currently underway. Many of these studies are evaluating solutions to significant problems of capacity, condition, and environmental compliance. The Board also notes that as these studies are completed, integration of the resulting projects into design and construction priorities will be required. The Board's evaluation and comments related to individual studies follows:

**PRIORITY 1: Upper Mississippi and Illinois Navigation, Illinois, Iowa, Minnesota, Missouri, and Wisconsin.** The study began in 1990 with the Reconnaissance phase on each waterway that was completed in 1993. The Feasibility phase began in April 1993 and is scheduled for completion in December 1999. The system study is being jointly conducted by the Rock Island, St. Paul and St. Louis Districts of the Mississippi Valley Division. The Study addresses the need for navigation capacity expansion along the Mississippi River, including 29 locks and dams, between Minneapolis-St. Paul and the Ohio River and along the Illinois Waterway, including eight locks and dams, between Chicago and the Great Lakes and the Mississippi River above Melvin Price Locks and Dam. A systems approach has been adopted to examine existing engineering, economic, environmental and social parameters, and to determine system investment needs, including the mitigation of environmental impacts. The system's principal problems are, (1)

delays to commercial traffic at locks upstream of Melvin Price Locks and Dam due to limited lockage capacity and increasing traffic, and (2) system congestion resulting in competition and conflict between recreational and commercial users. The 600-foot locks on both waterways routinely handle 1200-foot tows in costly and time consuming lock operations.

1999 Estimated Cost: The total estimated study cost is \$53.43 million with \$5.7 million requested for FY 1999 to continue the Feasibility phase and general engineering work on the NED plan, and \$3.03 million remaining to be expended after FY 1999.

Recommendations: The Board strongly believes adequate funding should be appropriated to complete all necessary elements of this study as soon as possible. The future navigation needs of this waterway segment must be determined immediately so that design and construction of needed replacement facilities can be initiated. Furthermore, the Board recommends that the Corps pursue authorization for the construction of new 1200 foot locks at Locks and Dams 25, 24, 22, 21 and 20 on the Mississippi River.

**PRIORITY 2:** Intracoastal Waterway Locks, Louisiana. A study is being conducted of seven Intracoastal Waterway Locks in southern Louisiana, between the Mississippi River and the Sabine River. The purpose of this comprehensive system analysis is to determine if the seven GIWW locks should be replaced or if additional locks should be constructed. Results of the Reconnaissance phase completed in January 1993 indicate that there are immediate needs for capacity increases at Bayou Sorrel and Calcasieu Locks and determined that all the locks are structurally sound, but experience significant delays due to restrictive dimensions. The Feasibility phase began in June 1995 and is addressing capacity needs at Bayou Sorrel only. Bayou Sorrel is being expedited because it has the most immediate need for additional capacity and needs to be replaced for flood control purposes as well. The Board supports continuing the lock system evaluation. However, Bayou Sorrel represents a near-term opportunity for cost-effectively addressing both flood damage reduction and navigation needs.

1999 Estimated Cost: The total estimated study cost is \$4.88 million with \$550,000 requested for FY 1999 to continue the Feasibility phase and \$541,000 remaining to be expended after FY 1999. The Reconnaissance phase was completed in June 1995 and the Feasibility phase is scheduled for completion in September 2000.

Recommendations: The Feasibility phase of the study should continue. The Corps should also prepare an interim report and recommendation for Bayou Sorrel by the end of FY 1999.

**PRIORITY 3:** Ohio River Mainstem Systems Study, Illinois, Indiana, Kentucky, Ohio, Pennsylvania and West Virginia. The study is a navigation system analysis and the Feasibility phase will address the economic, social and environmental impacts of both large scale investments and small scale improvements for additional lock capacity at Ohio River navigation facilities such as J.T. Myers, Newburgh, and Cannelton Locks and Dams located downstream of McAlpine Locks and Dam and Elmsworth, Dashields and Montgomery Locks and Dams located on the Upper Ohio River. The emphasis will be on the Lower Ohio River where forecasted traffic growth is the greatest.

1999 Estimated Cost: The total estimated study cost is \$38.4 million with \$10.15 million requested for FY 1999 to continue the Feasibility phase and \$6.08 million remaining to be expended after FY 1999. The Feasibility phase is scheduled for completion in September 2000.

Recommendations: The Board recommends the study of this critical waterway segment continue as scheduled because additional capacity is anticipated for several Ohio River navigation facilities. Progressing project specific improvements simultaneously with this system study should seriously be considered because there is a small window of opportunity whereby innovative design and construction can achieve significant savings. If not done simultaneously the opportunity will be lost and costs will dramatically increase.

**PRIORITY 4:** Gulf Intracoastal Waterway - High Island to Brazos River, Texas. The study of 85 miles of the Texas section of the GIWW from High Island to the Brazos River (from near Galveston to near Freeport, Texas) is addressing problems affecting commercial shallow draft navigation, long-term dredged material disposal needs, and environmental resources and impacts of this reach of the GIWW. Specific navigation problems include two 90 degree bends near High Island, a double "S" curve near Freeport, poor access to the Houston and Texas City channels, traffic congestion, and a lack of mooring facilities and navigational aids. The Board also has concerns related to ensuring sufficient capacity and acceptable sites for disposal of dredged material.

1999 Estimated Cost: The estimated cost of this study funded from the General Investigations (GI) appropriation is \$4.6 million with \$1.1 million requested for FY 1999 to

continue the Feasibility phase, scheduled for completion in August 2000. The Reconnaissance phase was completed in February 1995. Of the total estimated study cost, \$828,000 is to be expended after FY 1999 to complete the Feasibility phase.

Recommendations: The Board recommends that the Feasibility phase of the study, initiated in April 1996, be continued.

**PRIORITY 5: Gulf Intracoastal Waterway - Brazos River to Port O'Connor, Texas.** The study of 72 miles of the Texas section of the GIWW, from the Brazos River near Freeport to Port O'Connor, Texas, is addressing problems affecting commercial shallow draft navigation, long term dredged material disposal needs, and environmental resources and impacts of this reach of the GIWW. Specific navigation problems include shoaling in the open bay, bank erosion and loss of wetlands, and deficiencies in mooring facilities and navigational aids.

1999 Estimated Cost: The total estimated study cost is \$3.9 million with \$935,000 requested for FY 1999 to continue the Feasibility phase. the Reconnaissance phase is scheduled to be completed in March 1998. Of the total estimated study cost, \$2.7 million remains to be expended after FY 1999 to complete the Feasibility phase, currently scheduled for March 2002.

Recommendations: The Board recommends that the Reconnaissance phase be completed and the Feasibility phase of the study be initiated, as scheduled.

**PRIORITY 6: Gulf Intracoastal Waterway - Port O'Connor to Corpus Christi Bay, Texas.** The study of 79 miles of the Texas section of the GIWW main channel from Port O'Connor to the Kennedy Causeway at Corpus Christi Bay is addressing problems affecting commercial shallow draft navigation, long-term dredged material disposal needs, and environmental resources and impacts of this reach of the GIWW. Specific navigation problems are traffic congestion, shoaling, and a lack of mooring facilities and navigation aids. Dredged material management and maintaining navigation are Board concerns.

1999 Estimated Cost: The estimated cost of this study is \$3.8 million from the General Investigations appropriation with \$400,000 requested for FY 1999 to initiate the Feasibility phase. The Reconnaissance phase is scheduled for completion in January 1998. Of the total estimated study cost, \$3.16 million remains to be expended after FY 1999 to complete the Feasibility phase.

Recommendations: The Board recommends that the Reconnaissance phase be completed and the Feasibility phase of the study be initiated, as scheduled.

**PRIORITY 7: Kanawha River Navigation, West Virginia.** The study is examining the navigation facilities on the Kanawha River at Winfield, Marmet and London. These projects are over 60 years old and the size of the chambers severely restrict the use of modern, efficient towing equipment. A new 110 by 800-foot lock chamber has been constructed at Winfield, and a similar 110 by 800-foot chamber has been authorized for construction at Marmet. An interim report for London Locks and Dam was completed in May 1997 and recommends a major rehabilitation of the London facility and extending the riverward lock chamber by 40 feet during the rehabilitation to improve efficiency. The Board agrees the condition problems at London warrant rehabilitation. The Board is unaware of additional investment needs eligible for cost sharing with the Inland Waterways Trust Fund.

1999 Estimated Cost: The total estimated study cost is \$13.0 million with \$800,000 requested for FY 1999 to continue the study, and \$530,000 remaining to be expended after FY 1999 to complete the Kanawha River System Final Report in September 2000.

Recommendations: The Board recommends a major rehabilitation at London and also recommends the entire study be completed on the current schedule.

**PRIORITY 8: Green and Barren Rivers Navigation Disposition Study, Kentucky.** The Green River, a tributary of the Ohio River, has approximately 9,230 square miles of drainage area in central and western Kentucky. Seven locks and dams were constructed to maintain a navigation channel on the Green River and the lower 20 miles of its Barren River tributary. Commercial navigation above the reach of the Green River serviced by Locks and Dams 1 and 2 ceased after the 1965 failure of Dam 4 and resulting loss of pool. The study is examining the status of the Green River Locks and Dams 3 through 6 and Barren River Lock and Dam 1 to recommend whether the current caretaker status is warranted or whether the projects should be de-authorized. Although a Feasibility report completed in 1993 concluded modernization and improvement of the Green and Barren Rivers Navigation System for commercial navigation was not economically justified, the upper portion of the system still provides recreation opportunities and serve as a source of water supply for a number of local communities, utilities and industries.

1999 Estimated Cost: The total estimated disposition study cost is \$830,000 with \$255,000 requested for FY 1999 to

complete the disposition study, currently scheduled for completion in March 2000. An interim report addressing tentative findings for Lock 6 was completed in September 1997. Of the total estimated study cost, \$45,000 remains to be expended after FY 1999.

Recommendations: The Board feels the projects on this waterway segment should be de-authorized and placed in discontinued operation status. Towards this outcome, the Board recommends that the disposition study be completed as scheduled.

### **III. ACKNOWLEDGMENTS**

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