Review of Inland Navigation Needs: Shipper and Carrier Perspectives

Mark E. Stevens
Ingram Barge Company
United States Navigable Waterways System is an essential part of the nation’s transportation infrastructure

Serving this market is reserved to U.S. operators (owned, operated and built) by the Jones Act
Coal-fired power plants in River States generate 75 percent of the nation’s total electricity while consuming 72 percent of coal volume received by utilities.
Transportation is Big Business and an Integral Part of U.S. Economic Activity

Transportation Bill Share of the GNP

By any measure, the U.S. has the most well-developed Freight Transport Infra-Structure in the World and it is a global competitive advantage
While water carriage requires just 5% of freight costs, it accounts for 15% of the ton-miles produced.

**Annual Freight Bill**

- Highway: 78%
- Railroad: 8%
- Water: 5%
- Air: 4%
- Oil Pipeline: 3%
- Misc.: 2%
- Truck: 29%
- Rail: 37%
- Oil Pipeline: 18%
- Water: 15%
Physics and geometry determine where barge service is competitive

<table>
<thead>
<tr>
<th></th>
<th>Barge</th>
<th>Rail</th>
<th>Pipeline</th>
<th>Truck</th>
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<tbody>
<tr>
<td>Geographic Coverage</td>
<td>Limited to Navigable Channels</td>
<td>Limits Shipper Options</td>
<td>Limited to Built Network</td>
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Navigation saves $7M per million tons shipped
Primary steel production facilities are dependent on iron ore vessels.
Inland water arteries are vital to assuring energy production.
Navigation Modernization

FY01 Actual $181M

FY02 Potential $249 M

Olmsted
<table>
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<tr>
<th>Project</th>
<th>FY01</th>
<th>FY02 Efficient Funding</th>
<th>House/Senate Marks</th>
<th>FY02 Add Capability</th>
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<td>Olmsted</td>
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Inland Navigation Construction Priorities FY 02

Lower Monongahela River Locks and Dams 2, 3 and 4

Lock and Dam 3
Lock and Dam 11
Lock and Dam 12
Lock and Dam 24
Olmsted Locks and Dam
McAlpine
Kentucky Lock Addition
Inner Harbor Locks

Robert C. Byrd
Winfield
London
Marmet

Inland Navigation Construction Priorities FY 02
Olmsted Locks and Dam
Ohio River

- Twin 110’ x 1,200’ locks and moveable dam replace L/Ds 52 and 53 (c. 1929); locks scheduled for completion Winter 2001; phased in-the-wet construction of dam
- 87.2 million tons in 1999; $15.2 million delay costs
- Located at hub of system, Ohio River, Mississippi, Upper Miss, Tennessee and Cumberland Rivers
- Nation’s two largest electric utilities rely upon locks for transiting coal tows; pathway for iron ore, bauxite ores, steel products and petroleum from Gulf; grains and feeds from Interior to the Gulf

- Total cost: $1 billion; operational, 2008
- Funding Status:
  - Thru 2001: $511 million
  - ’02 Budget Request: $34 million
  - ’02 House/Senate: $40/$41 million
  - Efficient Funding: $75 million
  - ’02 Additional capability: $35 million
Inner Harbor Lock Replacement

Gulf Intracoastal Waterway, New Orleans

- Replace 75' x 640' lock (31.5' deep), built in 1923, with new 110' x 1,200' deep draft lock (36' deep) further up Inner Harbor Canal; meets needs of shallow draft and deep draft interests over 50 year economic life
- One of the worst bottlenecks on the system, delays average 11 hours, but can range up to 24 – 36 hours
- Critical location connects Mississippi, Gulf Intracoastal Waterway West, Lake Pontchartain
- $35 million Community Impact Mitigation Plan, preserves historic neighborhood
- Total cost: $603 million
- Funding Status:
  - Thru 2001: $71 million
  - 02 Request: $10 million
  - 02 House/Senate: $13/$15 million
  - Efficient Funding: $42 million
  - '02 Additional Capability: $29 million
Mon River Locks and Dam 2, 3 & 4
Monongahela River

- First use of innovative “in-the-wet” construction techniques; Complete dam in 2002; future – remove old L/D 3, new larger locks at Charleroi (L/D 4)
- Nation’s largest steel maker relies on coal transiting locks for making coke
- 24.6 million tons; $1.1 million delay costs
- Dam 2 is 100 years old; L/D 3 100 years old
  Structural reliability at L/Ds 2 & 3 real issue
- New gated dam to replace old Dam 2, $107.4 million contract awarded Jul ’99
- Total cost: $705 million
- Funding Status:
  Thru 2001: $185 million
  ’02 Budget Request: $34.5 million
  ’02 House/Senate: $39.5/$40.5 million
- Efficient Funding: $60 million
- ’02 Additional Capability: $21 million
McAlpine Locks and Dam
Ohio River

• Groundbreaking June 1999
• Replace second 110’ x 600’ lock and inactive 56’ x 360’ third chamber with additional 110’ x 1,200’ chamber
• 55 million tons 1999; $4.9 million delay costs
• Only one lock (main) available during construction; only lock on Ohio River with no auxiliary chamber; could be operational by 2006 with efficient funding
• Nation’s two largest electric utilities rely on lock to transit coal; also pathway for iron ore, bauxite ores, steel products, petroleum and grain
• Total cost: $278 million

Funding Status:
Thru 2001: $60.3 million
’02 Budget Request: $13.6 million
’02 House/Senate: $18.6/$19 million
Efficient Funding: $25 million
’02 Additional Capability: $6 million
Marmet Locks and Dam
Kanawha River

• Construction of new 110’ x 800’ lock could begin in 2002 and be operational by 2006
• 15.1 million tons in 1999; $1.1 million delay costs
• Busiest lock on America’s system; old twin 86’ x 360’ locks obsolete, jumbo barges (35’ x 195’) require 5 cuts with tow configuration
• Nation’s second largest utility relies on lock to transport coal; nation’s largest steel maker relies on coal (used for making coke) transported thru this lock

• Total Cost: $313 million

Funding Status:
Thru 2002: $46 million
‘02 Budget Request: $6.2 million
‘02 House/Senate: $6.2/$28.1 million
Efficient Funding: $28 million
‘02 Additional Capability $0 - $22 million
Kentucky Lock and Dam
Tennessee River

- Groundbreaking October 1999
- New 110’ x 1,200’ lock addition, could be operational by 2008 with efficient funding
- Kentucky/Barkley System, 40.6 million tons, $5.3 million in delay costs in 1999
- Nation’s largest electric utility (TVA) supported by these locks; TVA power production key to aluminum production

Total Cost: $533 million

Thru 2002: $69 million

'02 Budget Request $14.4 million

'02 House/Senate $20.4/$23 million

Efficient Funding $45 million

'02 Additional Capability $22 - $24.6 million
Robert C. Byrd Locks and Dam

Ohio River

- New 110’ x 1,200’ main lock and 110’ x 600’ auxiliary chamber operational in 1992
- 60 million tons, mostly coal transited this section of the river; pathway of commodities from the Gulf, including iron ore, bauxite ores, petroleum and chemical feedstocks and products
- Locks critical to movement of coal to 50 power plants on the Ohio River System; also gasoline, diesel fuel, jet fuels
- Major rehabilitation of dam awaits completion
- Total cost: $379 million
- Funding Status
  - Thru 2001: $352.7 million
  - ’02 Budget Request: $1.3 million
  - ’02 House/Senate: $1.3/$3.5
  - Efficient Funding: $4 million
  - ’02 Additional Capability: $0.5 - $2.7 million
Winfield Locks and Dam

Kanawha River

• New 110’ x 800’ lock operational in 1997, ending the largest bottleneck on the Ohio River System

• 19.5 million tons in 1999, mostly coal moving to nation’s power plants; chemical feedstocks enter the Kanawha River upbound from the Gulf and move to markets throughout the United States after reprocessing

• Completion of major rehabilitation of dam awaiting funding

• Total cost: $235.5 million

Funding Status:

Thru 2001: $227.3 million
’02 Budget Request: $0.6 million
’02 House/Senate: $0.6/$2.7 million
Efficient Funding: $3 million
’02 Addition Capability $0.3 - $2.4 million
Lock and Dam 24
Upper Mississippi River

- Major rehabilitation of project in operation more than 60 years; some components suffered wear and tear that cannot be improved by ordinary maintenance
- 39.2 million tons in 1999, mostly grain down bound; coal, petroleum, and fertilizers up bound
- Severe concrete deterioration at lock and dam; original limestone in concrete monolith not appropriate for application in project
- Total cost: $68.6 million, started in 1996

Funding Status:
- Thru 2001: $24.7 million
- ’02 Budget Request: $8 million
- ’02 House/Senate: $8/$8 million
- Efficient Funding: $8.5 million
- ’02 Addition Capability: $0.5 million
Lock and Dam 3
Upper Mississippi River

- Major rehabilitation of 110’ x 600’ lock in operation since 1938
- System of spot dikes that maintains navigation pool is deteriorating at accelerated rate; if high water erodes dikes, resulting loss of the navigation pool will curtail commercial traffic causing economic and environmental damage

- Total cost: $18.8 million
- Funding Status:
  - Thru 2001: $3.1 million
  - ’02 Budget Request: $800,000
  - ’02 House/Senate: $.8/$.8 million
  - Efficient Funding: $.8 million
  - Additional Capability: 0
London Locks and Dam
Kanawha River

• Major rehabilitation of the lock and dam includes stabilization of approach walls and stabilization and resurfacing of lock chamber; also extension of lock chamber an additional 40’

• Current twin locks are 56’ x 360’, allowing only one 35’ x 195’ jumbo barge to transit lock at a time; most tows include 5 jumbos and a towboat, requiring 5 cuts

• 6.5 million tons in 1999; mostly coal for making coke and generating electricity

• Total cost: $22.2 million

• Funding Status:
  Thru 2001: $3.5 million
  ’02 Budget Request: $4.3 Million
  ’02 House/Senate: $4.3/$8.7 Million
  Efficient Funding: $10 Million
  ’02 Addition Capability: $1.3 - 5.7 Million
Lock and Dam 12
Upper Mississippi River

- Major rehabilitation of 110’ x 600’ lock in operation since 1938
- 24.4 million tons of commodities transit lock; 7.3 million upbound; 17 million tons, mostly grain, downbound
- Replace miter gates, miter gate electrical system, and tainter valve machinery
- Total cost: $15 million

Funding Status:
Thru 2001: $5.4 million
’02 Budget Request: $4.9 million
’02 House/Senate: $4.9/$4.9 million
Efficient Funding: $5.5 million
’02 Addition Capability: $0.6
Lock and Dam 11
Upper Mississippi River

• Major rehabilitation of components of lock, to include replacement of miter gates, miter gate electrical system, and tainter valve machinery
• Lock and Dam is 64 years old; 20.8 million tons of commodities, mostly grain, transit this portion of the river
• Total cost: $24.6 million
• Funding Status:
  ’02 Budget Request: $0
  ’02 House/Senate: $0
New Construction Start Needed
Efficient Funding/Available Capability: $3.4 million
The Need for Real Time Data

Up to 48 Barges
9,200 Horsepower
80,000+ Tons
Moving downstream

That is Inertia !!!!
Technology with Real Time Information

- Updated (standardized) ENC / supporting AIS
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- GPS barge tracking systems
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• Enhanced fog vision systems
• Early warning crew fatigue systems
• GPS barge tracking systems
• Improved crew safety systems
• Severe weather alerting systems
In Conclusion

If navigation modernization of the Inland Waterways is good for the carrier, then the shipper and ultimately the consumer will reap the benefits.
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