Future of the Upper Mississippi Waterway in Minneapolis

Case Study #5

By Paul Morris, Ed Sanderson, Patricia Hemquist
Upper St. Anthony Lock and Dam is uppermost lock and dam on the Mississippi River

Minnesota barge economy originally moved large quantities of corn and grains

Today, barges generally used to ship cement, aggregate, and scrap metal to ports in Minneapolis and St. Paul

Commercial traffic remains the river's biggest user, however more and more pleasure boats are passing through the locks
Land Use Timeline

- **1st Era** – Sawmills, lumberyards, breweries, and foundries

- **2nd Era** – Railroad yards and barge terminal

- **3rd Era** – Light industry and open space

- **4th Era** – Riverfront communities and housing and park and recreation?
Amenity vs. Working River
Transportation Affects

3 Riverfront Options

- **Heavy Industry and Parks**
  - Barging continued
  - Rail service continued
  - BN Bridge converted to pedestrian

- **Light Industry and Parks**
  - Barging discontinued
  - Rail service continued on west bank, not on east bank
  - BN Bridge converted to pedestrian

- **Parks and Residential**
  - Barging discontinued
  - Rail service continued on east bank, BN Bridge remains in use
Preferred Plan

- Create public access to river
- System of Riverway streets
- Link parkways
- Economic development
- Ecological functions
Plan Benefits

- 90 acres of new park
- 15 miles of recreational trails
- Restored riverbank
- Approximately 5 miles of parkway and boulevard
- 2,500 housing units
- 2,000 jobs
- Over $10 million additional tax revenue
Preferred Plan: Transportation

Changes

- BN Railroad Bridge converted to pedestrian and bicycle bridge
- Close Upper Harbor Terminal
- Barging eliminated - phase out heavy industry
- Intermodal phase-out
  - Fewer trucks
  - Fewer rail cars
Preferred Plan: Transportation

Changes

- Marshall Street
  - Possibility of utilizing BNSF Railroad Corridor to relieve traffic on Marshall Street – rejected by residents
  - Reconstruct as boulevard
  - Remain 4 lanes

- Establish Riverway street system

- Railroads
  - East bank eliminated, west bank remains
Eliminating Barging

- **Upper Harbor Terminal on Riverfront**
  - 48 acre site
  - Tax exempt
  - Investments have not returned benefits

- **Too Few Industries to Justify Locks**
  - Local taxes subsidized for 30 years
  - Only 4 private industries
Upper Harbor Terminal
Current Barge Traffic...Onto Trucks

- 81,357 tons by water daily
- Approximately 1,500 tons per barge

Total annual increases
- 1,543,500 truck ton-miles
- 66,123 truckloads

Daily Increases
- Generate 648 new truck trips in Minneapolis each weekday
- 512 of these to St. Paul on I-94/I-35W & I-35E interchanges

*Transitional scenario gives higher estimates
Heavier Highway Traffic

Figure 5.1: Truck Trip Increases as a % of Current Traffic

### Table: Expected Peak Daily Truck Trips

<table>
<thead>
<tr>
<th># road</th>
<th>AADT</th>
<th>5axle trucks</th>
<th>% incrs</th>
<th>5axle trucks</th>
<th>% incrs</th>
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<td>1 I94</td>
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<td>1,441</td>
<td>512</td>
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<td>417</td>
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<tr>
<td>2 I694</td>
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<td>3,386</td>
<td>130</td>
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<tr>
<td>3 I35E</td>
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<td>2,020</td>
<td>130</td>
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<td>4 3rd St.</td>
<td>7,150</td>
<td>101</td>
<td>-</td>
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<td>417</td>
</tr>
</tbody>
</table>

- Facilities
- Rivers (MS & MN)
- River locks
- Interstates
- Arterial roads
- Other roads

Map showing locations and expected peak daily truck trips.
Costs of New Truck Traffic

Private Costs

- 406,000 gallons of diesel fuel per year
- Total: $4.9 million in trucking costs
- Net Cost: Total - Barge savings = $4.084 million

* Transitional scenario gives higher estimates
External Costs

FHWA explains costs are borne by affected individuals.

Costs per 1000 VMT of 5-axle truck traffic:

- Emissions: $44.90
- Congestion: $200.60
- Noise: $30.40
- Accidents: $11.50
- Road wear and tear: $409.00

Totals:

- Public Sector (Road Maintenance): $600,500
- Externalities: $488,200
- Total: $1,088,700

* Transitional scenario gives higher estimates.
Policy Issues

- American Iron & Steel (AIS) unlikely to move due to high levels of investment
- Upper Harbor Terminal would close and trucks and trains would be diverted
- Added transport costs will increase the cost of concrete and reduce profitability of AIS
- Difficult to re-establish service (for containers) once it has been discontinued
US Army Corps of Engineers

- Federal government organization providing a variety of services related to inland waterways and ports
- Flood control, environmental protection, navigation, military construction
- Flood control work – building dams to augment low summer river flows constructing and levees to improve channels and control floods
- Environmental quality work – river improvements to support Upper Mississippi as a scenic and bird flyway route
- Navigation - maintains a 9-foot channel in the Upper Mississippi River using a series of locks and dams; creates a predictable flow keeping river reliable for transportation.
**Army Corps Navigation Study**

- Started in the early 1990s
- Upper Mississippi is that portion of the river stretching from Minneapolis south through portions Wisconsin, Iowa, Illinois, and Missouri
- Consists of 29 locks and dams
- Evaluate whether or not future economic activity justified modernization of existing lock and dam system
- Original lock and dams built in the early to mid 1900s
- Existing lock and dam systems are quite inefficient, causing traffic backups.
In 2000, study’s lead economist accused Corps of inflating river transport growth projections to justify lock and dam expansion and boost the Corps’ stagnant budget.

Congress halted original study.

New study commissioned combined goal of sustainable navigation and ecosystem restoration.

Environmental Impact Statement:
- Dated September 2004
- Recommended plan proposes $2.4 billion for modernizing locks and dams and $5.3 billion for the environmental ecosystem management.
The Numbers

- Estimated that barge industry will move 20 million tons of cargo on the Upper Mississippi this year.
- Traffic on the Upper Mississippi peaked in the 1990s and has been flat to lower in recent years.
- Many existing locks are only 600 feet in length, too short to handle typical 1,100-foot-long barge tow; towboats have to go through twice, disassembling the barges on one side and reassembling them on the other.
Barge Supporter Claims

- Existing lock and dam system can result in waits of more than three hours
- Updated infrastructure gives the US competitive advantage to deliver its product more reliably than foreign competitors
- Lock and dam improvements would benefit many other industries besides farming, allowing building materials, for example, to move more quickly to and from Chicago
Barge Supporter Claims

- Midwest Area River Coalition 2000 argues river traffic forecasts are hardly relevant, pointing out that the project would create 3,000 construction jobs and thousands more indirectly.

- Mississippi River supports some 1.6 million jobs and $284 billion in annual economic activity, according to a study prepared for the U.S. Fish and Wildlife Service.
Barge Opponent Claims

- Taxpayers for Common Sense and the National Wildlife Federation claim 7.8-mile stretch of the Mississippi River between Minneapolis and St. Paul “is among the most highly subsidized sections of waterway in America.”

- Corps spends $3 million to maintain three locks and dams to lift and lower a trickle of barges on this short reach
Barge Opponent Claims

- Question whether there will be significant increases in barge traffic to justify extensive investment in lock and dam upgrades
- National Academy of Sciences claim the Corps’ projections of rising grain exports were “inconsistent with the past 20 years of relatively steady export levels.”
- It’s a pork barrel project
Conclusion

- Urban riverfront development
- The impact of closing the harbors
- The Corps study
Discussion Questions

- Should the Upper Mississippi River be used for industrial barge traffic, parks and recreational boating, or both?
- Who will pay the costs of increased truck traffic? Safety?
- What lessons can we learn from previous intermodal shifts?
- What is the value of barge traffic vs. parks and open spaces?
- What issues surround barges vs. trucks?
- What are the costs and benefits, in economic, ecological and aesthetic terms?
- What markets can be captured by increased barge traffic? Local? Regional?

There is only one Mississippi.