



Above the Falls

Policy Review and Implementation Study (ATF-PRIS)

Project Memo: Barging Notes

February 10, 2011

Conversation with Dick Lambert, Ports & Waterways, MNDOT January 4, 2011

Dick Lambert works in the Port Development area of the State Department of Employment and Economic Development. He's been involved in barging for a long time. In the 1910's and 1920's, his grandfather was involved in breaking the monopoly of rail on moving grain in the Upper Midwest by getting the Army Corps to dredge the 6 (and later 9) foot channel to allow barging through Minneapolis. He was involved in the barging industry before he got hired w/ DEED in the Port Development area. He runs the Port Development Assistance program at DEED, which started in 1996. The program declined to fund a Minneapolis application for an improvement grant to support salt storage at the Minneapolis port a few years back because the long-range plan calls for the terminal to go away.

He talks about Hubert Humphrey as Mayor pushing for the development of the upper harbor terminal, in part to be competitive with the City of St Paul's port operations, although he notes that the lengthy process required for funding and developing the port means it did not actually happen until years later. The locks opened in 1963. For a while coal went downriver from the Riverside plant to other power plants situated on the river, providing necessary barging volume to justify the port's existence. However they later got their own rail service, usage shifted in the 1970's to low sulfur coal no longer sourced upriver, and coal shipment eventually went entirely to rail. For a time grain was brought in by rail by TC&W railroad, and went out by barge. This operation relocated to Savage after Continental Grain wanted to expand but was unable to at that location. . 85% - 90% of grain going to Savage goes by truck rather than rail, and this has increased as farmers increasingly bring grain themselves, cutting out the middleman.

Minneapolis Harbor was previously located at the Bohemian Flats (where 35W bridge pieces were stored for study). It was moved to its current location (Upper Harbor Terminal) because it offered more space. While closing the UHT would be a city business decision; it would affect the whole system of barging for upper private terminals.

One of the early barging operations was JL Shiely -- now known as Aggregate Industries and still operating from their own terminal. This was located on the river with the assistance of the City in the 1960's. They barged sand and gravel mined from Grey Cloud Island for use in the construction industry, particularly concrete manufacturing. He thought there may be 15 to 20 years of aggregate left on Gray Cloud Island, as he was told 5 years ago that there may be a 20

year supply left. It could be that more supply could be identified, or a new technique for extraction developed. He noted that as sources are depleted, quarries will have to be found farther out and costs will rise.

The City lost Holsum Cement to the suburbs about 10 years ago because we were unable to accommodate their need to expand, resulting in a drop in tonnage.

The port has seen a series of operators since its opening - like many cities, Minneapolis has always hired a private sector operator to run the terminal facility. River Services has been that operator for around the past 20 years. Approximately 5 years ago River Services stopped loading barges out of Minneapolis; now only unload freight. This decision was made to reduce costs. No longer unload salt because of MPCA runoff issue - most salt now handled through South St Paul terminal.

Minneapolis' terminal is limited by the size of the lock and dam system. The locks can accommodate only 2 barges at a time, though they commonly are moved along lower parts of the Mississippi in groups of 12-15. Breaking them up to fit them through the locks means added time and expense in a trip upriver. However, for some commodities it is still worth it, as evidenced by the current users of the system. Barging can be a very economical way to move some goods.

He was optimistic about the future of barging on the Mississippi, and particularly the new freight traffic related to container ships being able to get through the newly expanded Panama Canal and load their containers on barges, allowing some traffic from SE Asia to bypass US West Coast ports and go directly up the Mississippi or to East Coast locations. MnDOT is conducting a study on potential for container barging. Target and Walmart are the largest container shippers. There are currently no immediate plans for container shipment on the "upper Mississippi" (i.e. north of St Louis) but this could likely change in the future. This could be reciprocated with exports of grain to other countries, but would require their acceptance of our fertilizer standards.

1 barge = 15 rail cars = 60 trucks. "Jumbo barge" = standard barge size (35' wide by 195' to 200' long).

The river is for low value, high volume commodities, where speed of delivery is not important. However, barging can move more fragile commodities safer than freight rail because travel is smoother, resulting in less "spoilage" in shipments.

A barge line could give rates from St Louis to St. Paul, and St Louis to Minneapolis so that those rates could be compared.

St Paul has the capacity to absorb the barge traffic that currently goes to the Minneapolis port (except aggregate) if barging were phased out in Minneapolis. There may be some added costs.

He was unable to provide details regarding what types of companies or commodities would generally see an advantage to going to Minneapolis as compared with St Paul. It appears to rely on the specific economics associated with the cost of freight for a particular business, the distribution of their market, and other factors.

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### Upper Harbor Terminal

The City of Minneapolis owns the Upper Harbor Terminal located on the west bank of the Mississippi River just north of Lowry Avenue. The City has a contract with River Services, Inc. for operation of the terminal. The current contract runs through 2014.

A variety of commodities are shipped through the Upper Harbor Terminal (UHT) which is served by a Canadian Pacific spur rail line that is also used by Twin City & Western Railroad (TC&W). However, most of the commodities that arrive by barge at the UHT are shipped out on trucks. In 2009, 91% (by tonnage) of all commodities shipped out of the UHT went via trucks with only 5% using the rail spur. There was also slightly over 3% of the total tonnage that was shipped out on barges, all scrap materials.

The following table shows the total tonnage and types of materials that were shipped into and out of the UHT in 2009.

| Material         | Tons In           |                 | Tons Out          |                  |                 |
|------------------|-------------------|-----------------|-------------------|------------------|-----------------|
|                  | Barge             | Truck           | Truck             | Rail             | Barge           |
| Aggregate        | 10,517.36         | 0.00            | 13,302.64         | 0.00             | 0.00            |
| Coal             | 88,016.50         | 0.00            | 105,118.40        | 0.00             | 0.00            |
| WoodChips        | 0.00              | 0.00            | 533.12            | 0.00             | 0.00            |
| Dredge Sand      | 0.00              | 0.00            | 22,843.20         | 0.00             | 0.00            |
| DAP              | 17,000.74         | 0.00            | 16,270.78         | 499.80           | 0.00            |
| Granite Block    | 0.00              | 574.85          | 574.85            | 0.00             | 0.00            |
| MAP              | 1,467.89          | 0.00            | 1,454.17          | 0.00             | 0.00            |
| Pig Iron         | 7,665.85          | 0.00            | 13,996.16         | 0.00             | 0.00            |
| Pig Iron Nodules | 0.00              | 0.00            | 469.44            | 0.00             | 0.00            |
| Potash           | 2,967.13          | 0.00            | 2,957.32          | 0.00             | 0.00            |
| Prilled Urea     | 9,267.59          | 0.00            | 0.00              | 9,267.59         | 0.00            |
| Twine            | 3,340.00          | 4,335.45        | 7,675.45          | 0.00             | 0.00            |
| Sand             | 0.00              | 0.00            | 914.43            | 0.00             | 0.00            |
| Scrap Materials  | 0.00              | 0.00            | 0.00              | 0.00             | 7,613.90        |
| Urea             | 12,233.04         | 0.00            | 15,157.64         | 2,139.36         | 0.00            |
|                  | <b>152,476.09</b> | <b>4,910.30</b> | <b>201,267.60</b> | <b>11,906.75</b> | <b>7,613.90</b> |
| Total Tons In    | <b>157,386.39</b> |                 |                   |                  |                 |
| Total Tons Out   | <b>220,788.25</b> |                 |                   |                  |                 |
| Total Tons       | <b>378,174.64</b> |                 |                   |                  |                 |

Two private companies are also served by barge traffic in addition to the UHT. These are Aggregate Industries and American Iron & Steel.

An overview of the three current users of the barge traffic is as follows:

| <u>Company</u>                                                        | <u>Commodities</u>                                      | <u>Rail</u> |
|-----------------------------------------------------------------------|---------------------------------------------------------|-------------|
| Aggregate Industries<br>26 <sup>th</sup> Avenue North, Pacific Street | Sand, Aggregate, Crushed Stone                          | None        |
| American Iron & Steel<br>2800 Pacific Street North                    | Recycled Materials                                      | CP          |
| River Services, Inc.<br>3750 Washington Avenue North                  | Fertilizer, Salt, Coal, Aggregate, Steel<br>Twine, Pipe | CP<br>TC&W  |

Over the past five years, the amount of commodities that have passed through the Upper Locks at St Anthony Falls has declined by 47% based on overall tonnage. This compares to a 12% overall reduction for the entire Mississippi River Port System that includes 5 ports: Winona, Red Wing, Savage, St Paul, and Minneapolis.

In 2009, a total of 545,840 tons of commodities were shipped through the Upper Locks at St Anthony Falls.

### The Mississippi River System

The river navigational system serving Minnesota is maintained by the U.S. Corps of Engineers that dredges the navigation channels and operates the 29 locks on the Upper Mississippi River. The Locks serve both the commercial operators and recreational boaters. The commercial barge operators on the river pay for ½ of the cost of major Federal lock construction with a fuel user tax which is now 20 cents per gallon.

**Annual Minnesota River Port Tonnage**

| Port         | 2010              | 2009              | 2008             | 2007              | 2006              | 2005              |
|--------------|-------------------|-------------------|------------------|-------------------|-------------------|-------------------|
| Minneapolis  | 592,404           | 545,840           | 781,155          | 795,372           | 1,069,238         | 1,024,877         |
| St. Paul     | 5,160,120         | 5,071,864         | 3,469,383        | 5,126,732         | 5,511,445         | 5,462,801         |
| Savage       | 2,411,361         | 2,777,677         | 1,705,650        | 3,201,406         | 3,214,351         | 3,018,613         |
| Red Wing     | 807,021           | 735,417           | 631,870          | 851,692           | 920,610           | 787,883           |
| Winona       | 1,922,462         | 1,672,630         | 1,573,239        | 2,099,746         | 2,204,375         | 2,008,029         |
| <b>Total</b> | <b>10,893,368</b> | <b>10,803,428</b> | <b>8,160,297</b> | <b>12,074,948</b> | <b>12,920,019</b> | <b>12,302,203</b> |

(Source: Minnesota's River Terminals, MnDOT – 2009)

- Army Corps annual average operations costs: \$3.72 million (operational and maintenance costs for the 3 Twin Cities Lock and Dams, and the maintenance of the navigation channel from Pool 1 to the upper pool). Source: Kevin Bluhm, Army Corps
- What would be the impact (economic, traffic, etc.) of closing the terminal on our area?
  - See MNDOT mode-shift paper by UMN: [2004 BargeTrans paper long.pdf](#)
  - **Public sector economic impact:** \$601,000 annual road maintenance; \$488,000 annual externalities (congestion, emissions, crashes, noise). Note, however, that this is based on historic freight movements almost 3 times current annual tonnage. Scaled down to the most recent five year average, that is \$240,000 annual road maintenance, and \$195,000 public externalities. And this could be offset at some point by annual public sector savings of some or all of the \$3.7 million associated with maintaining the lock and river channel infrastructure.
  - **Private sector economic impact:** \$4.1 million for “haulage by truck rather than barge”; 7.8 times the fuel consumption of barges moving cargo. Note, however, that this is based on historic freight movements almost 3 times current annual tonnage. Scaled down to the most recent five year average, that is \$1.6 million. Also, it neglects all business adjustments (changes in supplier, freight transport modalities, relocations, storage locations, other business practices, etc) , assuming direct replacement of barge shipments by truck.
  - **Traffic impact:** An increase of 648 heavy truck trips per weekday during the 32 week barge season, with 512 of these trips on I94 between St. Paul and Minneapolis. Note, however, that this is based on historic freight movements almost 3 times current annual tonnage. Scaled appropriately, that translates to 215 per weekday, w/ 205 on I-94 between the cities.
  - **Alternative development/Opportunity costs.** Alternative development scenarios, particularly those that are higher density, are likely to generate public sector cost savings related to the efficiency of higher intensity development near the urban core. These may well outweigh the public costs related to the modal shifts.

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