2009

Missouri River Recovery Program: From Steamboats to Barges: Missouri River Navigation

Follow this and additional works at: http://digitalcommons.unl.edu/usarmyceomaha

Part of the Civil and Environmental Engineering Commons

http://digitalcommons.unl.edu/usarmyceomaha/53

This Article is brought to you for free and open access by the U.S. Department of Defense at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in US Army Corps of Engineers by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.
Since the early 1800s, the Missouri River has been a thoroughfare for the transportation of goods. The U.S. government began taking an active interest in Missouri River navigation in 1832, as steamboats became the preferred means of transporting goods and people. On July 3, 1832, Congress authorized channel improvements on the Missouri River. These early river improvements involved mainly addressing obstacles in the river.

Navigation History

The steamboat was introduced on the Missouri River in 1819, not long after it was invented and made the first long-distance trip from New Orleans, LA to Pittsburgh, PA. While the steamboat offered great potential for transportation and trade, the dynamic nature of the Missouri River posed obstacles for safe, efficient river travel. The river would change course frequently within the river valley, especially during icy conditions and flooding. The steamboat terminals in river communities such as Vermillion, SD and Westin, MO often were cut off from the river when it would change course and move several miles away. To be a successful transportation route, the Missouri River needed to be a reliable navigation highway, providing effective pricing competition with surface transportation while protecting infrastructure, land, farms and communities.

In pursuit of this goal, Congress authorized the Corps to build the Missouri River Bank Stabilization and Navigation Project in 1912. The original authorization was modified, culminating with the Rivers and Harbors Act of 1945, which authorized the current project. The Rivers and Harbors Act authorized the Corps to maintain a 9-foot-deep, 300-foot-wide navigation channel from Sioux City, IA to the mouth of the river near St. Louis, MO, a distance of 735 miles.

Missouri River Bank Stabilization and Navigation Project

The project was completed in 1980, though maintenance and corrective work will continue to adapt to ever-changing river conditions. The project is designed as a continuous open-river-type waterway, without locks or pooled areas that would cause sediment to build up. The channel uses the river’s natural forces to cause the water to flow smoothly along its banks, creating a self-scouring channel with minimal maintenance required.

A significant component of the project is stabilizing the river’s banks for erosion control. Preventing the river from changing course provides river communities access for thermal power plant and water supply intakes, terminals, recreation, marinas and green areas. Erosion protection also supports the integrity of the flood control levees along the waterway and protects the many acres of highly productive farmland adjacent to the river.

A river navigation system also needs a reliable supply of water. Six upstream reservoirs provide a controlled water supply for all of the river’s uses, including navigation. The Corps releases enough water from the Missouri River Mainstem Reservoir System to maintain at least an
8-to 9-foot depth within the channel during the navigation season each year, which is usually from April 1 to December 1. The season length and amount of water released during the season are based on the amount of water stored in the reservoir system. In years when more water is collected in the reservoirs, more water is released to benefit navigation and other river uses.

In years with lower water storage, such as during droughts, enough water may not be available to support a full navigation season, and the season may be shortened. During the nesting season of the threatened and endangered least tern and piping plover, May through August, navigation releases are managed to maximize the protection of these birds while maintaining the Navigation mission.

**Navigation Today**

The navigation project provides trade opportunities on the Missouri River. It is also an important link with the Mississippi River waterway system, since approximately 90 percent of Missouri River’s commercial goods are moved on the Mississippi River. Low-cost transportation, particularly for bulk products, is available at many locations in the Missouri River valley. Cities and commercial interests have provided facilities along the banks of the river for both handling and managing navigation traffic, including about 85 docks and terminals.

Major commodities transported on the Missouri River include the following:
- Agricultural products (farm and food products)
- Chemicals, including fertilizers
- Petroleum products, including asphalt
- Manufactured goods, including building products such as cement
- Crude materials such as sand, gravel and materials used to maintain the navigation project

The table below shows the changes in the amount of goods moved over time, from 1935 to 2006.

<table>
<thead>
<tr>
<th>Year</th>
<th>*Tons Moved on River</th>
</tr>
</thead>
<tbody>
<tr>
<td>1935</td>
<td>30,000</td>
</tr>
<tr>
<td>1950</td>
<td>200,000</td>
</tr>
<tr>
<td>1960</td>
<td>1,000,000</td>
</tr>
<tr>
<td>1977</td>
<td>3,340,000</td>
</tr>
<tr>
<td>2006</td>
<td>195,000</td>
</tr>
</tbody>
</table>

*Tonnages do not include sand, gravel or waterway materials.

---

**Many Uses, Ongoing Challenges**

Many factors affect the amount of navigation on the Missouri River, such as changes in the market, droughts, floods and the demands of other river uses. All these factors contributed to the decline in tons moved on the river between 1977 and 2006. However, tonnage or cargo capacity totals over recent years show signs of improvement (see chart below). Despite the reduction in goods moved on the Missouri River, navigation remains an authorized purpose and Corps responsibility.

One continuing challenge is balancing the river’s resources for navigation and for protecting native river species. In many ways, managing the river for navigation negatively impacts river wildlife, and vice versa. The Corps works closely with the navigation industry and wildlife protection agencies to develop the best methods for fulfilling both the needs of navigation and species protection, as mandated by Congress. The Missouri River Recovery Implementation Committee (MRRIC) is an especially valuable forum for stakeholders representing many river interests to collaboratively work toward solutions for balancing the many demands on the Missouri River. As the Corps’ Missouri River Recovery Program continues to recover river species and the Missouri River ecosystem, the MRRIC and other venues for cooperation will be crucial in the Corps’ ongoing effort to balance the varied and sometimes conflicting uses of the Missouri River.

The mission of the Missouri River Recovery Program is to implement actions to accomplish Missouri River ecosystem recovery goals in coordination and collaboration with agency partners and stakeholders. The vision of the program is to create a sustainable ecosystem supporting thriving populations of native species while providing for current social and economic values.

For more information on the Missouri River Recovery Program, please visit [www.moriverrecovery.org](http://www.moriverrecovery.org).