



Lock & Dam 2

(Hastings, Minnesota)
Mississippi River

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Construction: 1928-1930 (Original riverward lock)
1941-1948 (New, landward lock)

Congressional District: MN-2

Description

Lock and Dam 2 is upstream of Hastings, Minnesota, and is 815.2 miles above the confluence of the Mississippi and Ohio rivers.

The lock is 110 feet wide by 600 feet long. The dam consists of a concrete structure 722 feet long with 19 Tainter gates, 30 feet long. The dam has 4.4 megawatt power plant owned and operated by the city of Hastings. The site includes 3,000 feet of earth embankment.

The site includes an observation platform and restrooms open from dawn to dusk each day from April to November.



History/Significance

The Corps remained committed to open-water navigation on the Upper Mississippi in 1925 when plans were made for a lock and dam complex at Hastings, Minnesota. However, this structure did not leave as much room for open-water maneuvering as the Moline and LeClaire installations. The Hastings complex, now known as Lock and Dam 2, only included a 100-foot-wide navigable pass adjacent to the lock. It also included 20 Tainter gates. In narrowing the space reserved for open-river navigation and using Tainter gates for the first time on the Upper Mississippi River, the Hastings Lock and Dam acted “as a sort of engineering link” between the Corps’ 6-foot channel structures and philosophy and its mature 9-foot channel structures and philosophy.

The original, riverward lock chamber was 110 feet by 500 feet and constructed from 1928-1930. Due to foundation conditions, some rotation of the original lock walls took place, which also affected the operation of the miter gates. Due to the foundation settlement problems, wall tilting and that the original lock chamber was of a non standard size, construction of a 110-foot by 600-foot landward lock chamber commenced in 1941. The new lock chamber was not completed until 1948 due to the suspension of all civil construction during World War II.

Annual Tonnage (20-Year Historical)

<u>Year</u>	<u>Tons</u>	<u>Year</u>	<u>Tons</u>	<u>Year</u>	<u>Tons</u>	<u>Year</u>	<u>Tons</u>
1992	8,658,080	1997	9,827,891	2002	10,574,988	2007	7,051,488
1993	7,678,588	1998	10,557,600	2003	8,861,479	2008	4,729,252
1994	9,543,114	1999	11,539,700	2004	7,828,603	2009	7,072,327
1995	9,425,557	2000	10,860,047	2005	7,291,721	2010	7,178,790
1996	10,574,524	2001	8,583,954	2006	7,341,784	2011	6,735,253

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180 5TH STREET EAST, SUITE 700, ST. PAUL, MN 55101-1678
Public Affairs Office, (651) 290-5200, www.mvp.usace.army.mil

Commodity Tonnage & Lockages (2011)

Coal	292,286	<u>Subtotals:</u>	Grain	2,378,828
Petroleum	283,811		Steel	27,700
Chemicals	1,361,653			
Crude Materials	1,474,188	<u>Lockages:</u>	Commercial Boats:	755
Manufactured Goods	715,427		Recreation Boats:	3,600
Farm Products	2,578,670		Light Boats:	89
Manufactured Machinery	16,918		Other Boats:	33
Waste Material	0		Total Boats:	4,477
Unknown	12,300		Total Cuts:	2,893

The 9-Foot Channel Project

Lock and Dam 2 is one of 29 locks and dams on the Upper Mississippi River that provide a water stairway of travel for commercial and recreational traffic from Minneapolis to the Gulf of Mexico.

The existing 9-foot Channel Navigation Project was largely constructed in the 1930s and extends down the Upper Mississippi River from Minneapolis-St. Paul to its confluence with the Ohio River and up the Illinois Waterway to the Thomas J. O'Brien Lock in Chicago. It includes 37 Locks and approximately 1,200 miles of navigable waterway in Illinois, Iowa, Minnesota, Missouri and Wisconsin.

The maintenance needs of the aging infrastructure are increasing at a rate much greater than the operations and maintenance funding provided for the system which adversely affects reliability of the system. Long-established programs for preventive maintenance of major lock components have essentially given way to a fix-as-fail strategy, with repairs sometimes requiring weeks or months to complete. Depending on the malfunction, extended repairs can have major consequences for shippers, manufacturers, consumers, and commodities investors.

Additionally, the system's 600-foot locks do not accommodate today's modern tows without splitting and passing through the lock in two operations. This procedure requires uncoupling barges at midpoint which triples lockage times and exposes deckhands to increased accident rates.

There are more than 580 manufacturing facilities, terminals, grain elevators, and docks that ship and receive tonnage in the Upper Mississippi River basin. Grains (corn and soybeans) dominate traffic on the system. Other commodities, mainly cement and concrete products, comprise the second largest group. A modern 15-barge tow transports the equivalent of 1,050 large semi-trucks (26,250 cargo tons, 875,000 bushels, or 17,325,000 gallons). Annually, the 9-foot project generates an estimated \$1 billion of transportation cost savings compared with the operation and maintenance costs of approximately \$115 million.

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