



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>
2016	10,198,774	2011	6,735,253	2006	7,341,784	2001	8,584,354
2015	7,405,823	2010	7,184,802	2005	7,291,721	2000	10,842,497
2014	6,880,464	2009	7,072,327	2004	7,828,603	1999	11,539,256
2013	6,221,953	2008	4,729,252	2003	8,861,479	1998	10,787,628
2012	6,895,882	2007	7,042,475	2002	10,572,988	1997	10,087,220

U.S. ARMY CORPS OF ENGINEERS – ST. PAUL DISTRICT

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Commodity Tonnage (2016)

All Units (Ferried Autos, Passengers, Railway Cars)	-
Coal, Lignite, and Coal Coke	10,500
Petroleum and Petroleum Products	211,600
Chemicals and Related Products	1,980,500
Crude Materials, Inedible, Except Fuels	1,387,390
Primary Manufactured Goods	843,100
Food and Farm Products	5,670,600
Manufactured Equipment & Machinery	87,084
Waste Material	
Unknown or Not Elsewhere Classified	8,000

Vessel & Lockage Data (2016)

Average Delay - Tows (Hours)	1.16
Average Processing Time (Hours)	0.38
Barges Empty	2,474
Barges Loaded	6,496
Commercial Vessels	1,611
Commercial Flotillas	1,604
Commercial Lockages/Cuts	1,986
Non-Vessel Lockages	-
Non-Commercial Vessels	33
Non-Commercial Flotillas	33
Non-Commercial Lockages/Cuts	33
Percent Vessels Delayed (%)	31
Recreational Vessels	2,813
Recreational Lockages	1,375
Total Vessels	4,457
Total Lockages/Cuts	3,394

The 9-foot Channel Navigation Project

The 9-foot Channel Navigation Project includes 37 lock and dam sites (42 locks) on 1,200 river miles in Illinois, Iowa, Minnesota, Missouri and Wisconsin. Constructed largely in the 1930s, it extends from Minneapolis-St. Paul on the Upper Mississippi River to its confluence with the Ohio River and up the Illinois Waterway to the T.J. O'Brien Lock in Chicago.

The maintenance needs of this aging infrastructure have surpassed annual operations and maintenance funding. This limited funding has adversely affected reliability of the system and has primarily resulted in a fix-as-fail strategy, with repairs sometimes requiring days, weeks or months. Depending on the nature of a failure and extent of repairs, shippers, manufacturers, consumers and commodity investors can experience major financial consequences. Additionally, today's 1,200'-long tows must split and lock through in two operations within the Project's 600' chambers. This procedure doubles and triples lockage times, increases costs and wear to lock machinery, and exposes deckhands to higher accident rates.

More than 580 facilities ship and receive commodities within the Project. Grains (corn and soybeans) dominate traffic; cement and concrete products are the second largest group. A modern 15-barge tow transports the equivalent of 1,050 semi-trucks (26,250 tons, 937,387 bushels of corn, or 240 rail cars). In 2015, the 9-foot channel project generated an estimated \$3 billion of transportation cost savings compared to its approximately \$246 million operation and maintenance cost.

UPDATE: April 2017