



Lock & Dam 5

(Minnesota City, Minnesota)
Mississippi River

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG.

Construction: 1933-1939

General Contractors:

Lock: Edward E. Gillen Co., Milwaukee, Wisc.

Dam: Merritt-Chapman & Whitney Corp., Cleveland, Ohio

Congressional District: MN-1; WI-3

Description

Lock and Dam 5 is located at Mississippi River Mile 738.1 in Minnesota City, Minnesota, 5.5 miles upstream of Fountain City, Wisconsin.



The main lock is located along the right descending bank and consists of a single lock chamber 110 feet wide by 600 feet long with an upper pool elevation of 660.0 feet, a tailwater elevation of 651.0 feet, and a vertical lift of 9.0 feet. There are miter gates at each end of the lock chamber and a partial auxiliary lock consisting of an upstream set of miter gates and short concrete riverwall section. The foundation consists of piles in sand and gravel.

The movable dam has six roller gates (20 feet high by 60 feet long), 24 non-submersible Tainter gates (15 feet high by 35 feet long), and four submersible Tainter gates (15 feet high by 35 feet long). The dam consists of a concrete structure 1,619 feet long and an earthen embankment approximately 18,500 feet long, located between the movable dam and high ground on the Wisconsin side of the river. The dam foundation is set on piles in sand.

The site has a public observation platform and restrooms open from dawn to dusk from April to November.

History/Significance

The lock was put into operation in May 1935. Lock and Dam 5 was a group "A" priority, and the second installation completed in the St. Paul District. Typical of other 9-foot channel installations, the roller gates on Dam 5 were located in the main channel, where they could handle the greatest flooding and heavy ice flow conditions. One fatal accident, involving a private craft, occurred during the construction of the dam. In 1934, the site hosted a presidential visit by Franklin Roosevelt.

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>
2015	8,080,646	2010	7,974,264	2005	8,496,606	2000	12,048,853
2014	7,387,985	2009	8,019,206	2004	9,066,765	1999	12,770,886
2013	6,790,545	2008	5,741,647	2003	10,083,659	1998	11,966,982
2012	7,851,166	2007	8,490,491	2002	11,785,323	1997	11,194,715
2011	7,543,650	2006	8,864,957	2001	9,487,157	1996	11,884,054

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

180 5TH STREET EAST, SUITE 700, ST. PAUL, MN 55101-1678

Public Affairs Office, (651) 290-5807, www.mvp.usace.army.mil

Commodity Tonnage (2015)

All Units (Ferried Autos, Passengers, Railway Cars)	-
Coal, Lignite, and Coal Coke	42,400
Petroleum and Petroleum Products	242,823
Chemicals and Related Products	1,805,650
Crude Materials, Inedible, Except Fuels	1,532,400
Primary Manufactured Goods	825,728
Food and Farm Products	3,613,500
Manufactured Equipment & Machinery	10,345
Waste Material	4,700
Unknown or Not Elsewhere Classified	3,100

Vessel & Lockage Data (2015)

Average Delay - Tows (Hours)	0.76
Average Processing Time (Hours)	0.33
Barges Empty	1,330
Barges Loaded	5,323
Commercial Vessels	935
Commercial Flotillas	933
Commercial Lockages/Cuts	1,265
Non-Vessel Lockages	-
Non-Commercial Vessels	41
Non-Commercial Flotillas	41
Non-Commercial Lockages/Cuts	41
Percent Vessels Delayed (%)	20
Recreational Vessels	3,208
Recreational Lockages	1,589
Total Vessels	4,184
Total Lockages/Cuts	2,895

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). Annually, the 9-foot project generates an estimated \$1 billion of transportation cost savings compared to its approximately \$115 million operation and maintenance cost.

UPDATE: May 2016