



Chain of Rocks - Locks & Dam 27

(Granite City, Illinois)
Mississippi River

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Construction: 1947-1964

General Contractors:

Lock: River Construction Corporation

Dam: Unknown

Congressional District: MO-1; IL-12

Description

Locks and Dam 27's locks are located at Mississippi River mile 185.5 near the southern end of the 8.4-mile long Chain of Rocks Canal. The dam is located at Mississippi River mile 190.2 immediately downstream from Homer Dike, Intake Towers 1 and 2 of the St. Louis Water Works, the Chain of Rocks Highway Bridge, and the Interstate Highway 270 Bridge. Its 489-acre pool (canal) is 15.6 miles long.



Locks and Dam 27 has twin locks, a main chamber and an auxiliary chamber. The main lock chamber is 1,200 feet long by 110 feet wide. The auxiliary chamber measures 600 feet long by 110 feet wide. Both locks were excavated to bedrock, which serves as the lock chamber floors.

The dam is 2,500 feet in length and is a non-movable low-water dam which extends entirely across the river.

History/Significance

The canal and locks were put into operation on February 7, 1953. Locks and Dam 27 is unique for several reasons. Constructed between 1946 and 1953, these locks are the only locks on the upper Mississippi River that are not directly attached to their respective dam. The dam is located several miles away on the river, whereas the locks are within the Chain of Rocks Canal. The dam itself is also unlike any other dams in the system. All other dams were built to be moveable, so they could be adjusted according to the changing water level. Dam 27 is not so complex; it is a 2,500-foot non-movable, low-water, fixed-crest rock dam extending across the river and designed to provide additional water depth at the lower gate sills of Lock 26. Constructed between 1959 and 1964, the dam has virtually no impact upon operations within the Chain of Rocks Canal or at Locks 27.

The locks are the last on the upper Mississippi River, therefore more cargo moves through its lock than any other navigation structure on the River.

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	68,153,794	2011	59,059,081	2006	73,361,655	2001	81,090,628
2015	60,311,824	2010	58,479,522	2005	68,345,297	2000	82,633,959
2014	62,074,905	2009	60,534,314	2004	71,166,714	1999	83,378,714
2013	49,833,766	2008	58,544,060	2003	77,454,308	1998	81,337,479
2012	56,612,966	2007	67,712,832	2002	83,825,396	1997	77,172,256

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

1222 SPRUCE STREET, ST. LOUIS, MO 63103-2833

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Commodity Tonnage (2016)

All Units (Ferried Autos, Passengers, Railway Cars)	-
Coal, Lignite, and Coal Coke	1,699,815
Petroleum and Petroleum Products	6,637,149
Chemicals and Related Products	12,330,306
Crude Materials, Inedible, Except Fuels	4,753,067
Primary Manufactured Goods	4,841,842
Food and Farm Products	37,773,235
Manufactured Equipment & Machinery	85,280
Waste Material	7,800
Unknown or Not Elsewhere Classified	25,300

Vessel & Lockage Data (2016)

Average Delay - Tows (Hours)	2.47
Average Processing Time (Hours)	0.71
Barges Empty	24,094
Barges Loaded	41,332
Commercial Vessels	7,641
Commercial Flotillas	7,394
Commercial Lockages/Cuts	7,394
Non-Vessel Lockages	-
Non-Commercial Vessels	97
Non-Commercial Flotillas	91
Non-Commercial Lockages/Cuts	91
Percent Vessels Delayed (%)	86
Recreational Vessels	527
Recreational Lockages	349
Total Vessels	8,265
Total Lockages/Cuts	7,834

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.

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