# Lower St. Anthony Falls

(Minneapolis, Minnesota)
Mississippi River

**U.S. ARMY CORPS OF ENGINEERS** **BUILDING STRONG®**

**Construction:** 1950-1956

**Congressional District:** MN-5

## Description

Lower St. Anthony Falls (LSAF) Lock and Dam is located at Mississippi River Mile 853.3, in Minneapolis, Minnesota.

LSAF Lock is located along the right descending bank and consists of a single lock chamber 56 feet wide by 400 feet long with an upper pool elevation of 750.1 feet, a tailwater elevation of 725.1 feet, and a vertical lift of 25 feet. The lock uses miter gates on the downstream side and a lock Tainter gate on the upstream side for the purpose of passing flow through the lock chamber during high water. There is a partial auxiliary lock consisting of an upstream Tainter gate and short concrete riverwall section.

The movable dam has three Tainter gates (24 feet high by 56 feet long) and an auxiliary lock submersible Tainter gate (24 feet high by 56 feet long). Completing the dam system is a concrete non-overflow wall owned by the Corps and a short, earth embankment owned by Xcel Energy, both on the left descending bank.

## History/Significance

The Lock was put into operation in September 1956. In 2007, the I-35 bridge tragedy occurred at the Lower St. Anthony Falls location.

In 1937, Congress authorized a 4.6 mile extension of the 9-foot channel at its upstream end and two additional complexes were built in Minneapolis: the Lower St. Anthony Falls Lock and Dam, and the Upper St. Anthony Falls Lock and Dam. The construction of these complexes, also known as the Upper Minneapolis Harbor Development, extended the 9-foot channel over the St. Anthony Falls. Below the St. Anthony Falls, the narrow gorge of the Upper Mississippi River only allowed for a relatively small river terminal. By extending the 9-foot channel, the Upper Mississippi Harbor Development project permitted the construction of larger and more suitable river terminal sites above the falls.

St. Anthony Falls has a fall of 74 feet, and had historically been used to furnish waterpower for sawmills and flour mills in the area. To ascend the falls the Corps needed a 25-foot lift at the lower lock, and a 49.1-foot lift at the upper lock. The Lower St. Anthony Falls Lock and Dam project also replaced the original Northern States Power Company Dam, which had been built in 1897.

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## Annual Tonnage (20-Year Historical)

| Year | Tons | Year | Tons | Year | Tons | Year | Tons |
|---|---|---|---|---|---|---|---|
| 2015 | 296,235 | 2010 | 664,410 | 2005 | 1,158,096 | 2000 | 2,237,267 |
| 2014 | 716,357 | 2009 | 696,470 | 2004 | 1,483,317 | 1999 | 2,066,980 |
| 2013 | 821,150 | 2008 | 929,600 | 2003 | 1,933,812 | 1998 | 2,057,380 |
| 2012 | 816,782 | 2007 | 993,963 | 2002 | 2,041,840 | 1997 | 1,859,900 |
| 2011 | 759,153 | 2006 | 1,316,210 | 2001 | 1,814,488 | 1996 | 1,720,580 |

## Commodity Tonnage (2015)

| | |
|---|---|
| All Units (Ferried Autos, Passengers, Railway Cars) | - |
| Coal, Lignite, and Coal Coke | - |
| Petroleum and Petroleum Products | - |
| Chemicals and Related Products | 1,500 |
| Crude Materials, Inedible, Except Fuels | 279,000 |
| Primary Manufactured Goods | 12,000 |
| Food and Farm Products | - |
| Manufactured Equipment & Machinery | 3,735 |
| Waste Material | - |
| Unknown or Not Elsewhere Classified | - |

## Vessel & Lockage Data (2015)

| | | | |
|---|---|---|---|
| Average Delay - Tows (Hours) | 0.03 | Non-Commercial Vessels | 8 |
| Average Processing Time (Hours) | 0.07 | Non-Commercial Flotillas | 8 |
| Barges Empty | 197 | Non-Commercial Lockages/Cuts | 8 |
| Barges Loaded | 203 | Percent Vessels Delayed (%) | 17 |
| Commercial Vessels | 899 | Recreational Vessels | 1,268 |
| Commercial Flotillas | 897 | Recreational Lockages | 401 |
| Commercial Lockages/Cuts | 897 | Total Vessels | 2,175 |
| Non-Vessel Lockages | - | Total Lockages/Cuts | 1,306 |

## 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

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