Lock & Dam 5A

(Fountain City, Wisconsin)
Mississippi River

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

Construction: 1934-1938
General Contractors:
Lock: McCarthy Improvement Co., Davenport, Iowa
Dam: United Construction Co. Winona, Minn.

Congressional District: MN-1: WI-3

Description

Lock and Dam No. 5A is located at Mississippi River Mile 728.5 below Fountain City, Wisconsin, three miles above Winona, Minnesota.

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 651.0 feet, a tailwater elevation of 645.5 feet, and a vertical lift of 5.5 feet. Miter gates are at each end of the lock chamber. A partial auxiliary lock consists of an upstream set of miter gates and a short concrete riverwall.

The concrete, 682-foot-long movable dam has five roller gates (20 feet high by 80 feet long) and five non-submersible Tainter gates (15 feet high by 35 feet long), located between the main lock and the railroad line along the left-descending bank. Completing the dam system is an earthen embankment approximately 22,000 feet long, between the main lock and high ground on the Minnesota side, with a 1,000-foot-long concrete overflow spillway.

The site has no public facilities.

History/Significance

The lock was put in operation in 1936. At the time of construction, the site consisted of low, swampy ground separated by three sloughs: Blackbird, Straight and Crooked sloughs. Many small lakes were in the area, interrupted by sections of relatively high ground. The site, located in the middle of the river channel, incorporated a number of islands into its earth dike system. The location of the complex in a slough in the left side of Islands 67 and 68 allowed for the main channel to serve an exclusive spillway function.

The original plan for the 9-foot channel system did not include this installation. However, due to pooling problems projected as a result of the construction of Lock and Dam No. 6 in conjunction with the City of Winona, this installation was designed and given a "B" priority.

Annual Tonnage (20-Year Historical)

Year	Tons	Year	Tons	Year	Tons	Year	Tons
1992	9,061,400	1997	10866598	2002	11,764,608	2007	8,534,287
1993	8,362,225	1998	11,685,200	2003	10,098,714	2008	5,720,567
1994	10,596,690	1999	12,761,300	2004	9,056,299	2009	7,995,081
1995	10,684,572	2000	12,130,247	2005	8,495,316	2010	7,981,410
1996	11,496,286	2001	9,500,382	2006	8,845,481	2011	7,556,928

Commodity Tonnage & Lockages (2011)

Coal	348,386	Subtotals:	Grain	3,035,028
Petroleum	290,304		Steel	30,150
Chemicals	1,327,017			
Crude Materials	1,585,858	Lockages:	Commercial Boats:	725
Manufactured Goods	708,323		Recreation Boats:	4,775
Farm Products	3,267,970		Light Boats:	144
Manufactured Machinery	15,270		Other Boats:	50
Waste Material	0		Total Boats:	5,694
Unknown	13,800		Total Cuts:	3,391

The 9-Foot Channel Project

Lock and Dam 5A 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.