Starved Rock Lock & Dam

(Ottawa, Illinois)
Illinois River

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

Construction: 1926-1933
General Contractors:
Woods Brothers Construction Company, Lincoln, Neb., and Independent Bridge Company, Pittsburgh, Pa.

Congressional District: IL-11

Description

Starved Rock Lock and Dam is 231.0 miles above the confluence of the Illinois River with the Mississippi river at Grafton, Illinois. The lock and dam is located about 1.5 miles southeast of Utica, Ill.

The dam is a gated, concrete, gravity dam, 1,280 feet long. A 680-foot-long Tainter gate section contains 10 Tainter gates. The headgate section contains 30 headgates that were plugged with concrete in 1982. The 52-foot-long ice chute section of the dam includes a 52-foot-long inoperable Tainter gate. The lock is the standard 600 feet long by 110 feet wide. The maximum lift is 18.5 feet with an average lift of 17 feet. It takes approximately 12 minutes to fill the lock chamber; nine minutes to empty.

It takes two hours for water to travel from Marseilles Lock and Dam to Starved Rock during flood or high flow conditions.

History/Significance

The lock opened in 1933. Starved Rock Lock and Dam was one of five designed and partially constructed by the state of Illinois over a period from 1926 to 1930. The original contractor, selected in 1923, failed to appear for the signing of the contract documents. Land litigation issues were resolved in 1925 and a second contract was awarded in 1926. Starved Rock Lock and Dam was about 95 percent complete when construction was turned over to the federal government due to state financial difficulties.

The government, by the authority of the Rivers and Harbors Act of 1930, completed construction of the lock in 1933. The lock and dam elements of the complex were completed at a total cost of $4,462,737, of which $3,577,419 were state funds and $885,318 were federal funds.

Annual Tonnage (20-Year Historical)

Year	Tons	Year	Tons	Year	Tons	Year	Tons
1992	22,795,545	1997	21,110,155	2002	22,432,189	2007	19,052,616
1993	23,257,612	1998	22,995,604	2003	21,837,185	2008	17,038,590
1994	26,327,462	1999	21,384,458	2004	23,796,648	2009	16,146,996
1995	22,127,619	2000	22,377,658	2005	22,070,208	2010	15,987,381
1996	20,758,366	2001	23,300,035	2006	23,187,461	2011	16,412,979

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Commodity Tonnage & Lockages (2011)

Coal	1,119,281
Petroleum	3,581,958
Chemicals	2,772,345
Crude Materials	4,219,579
Manufactured Goods	1,838,571
Farm Products	2,584,448
Manufactured Machinery	236,180
Waste Material	36,000
Containers & Pallets	1,600
Unknown	23,017

Subtotals:	Grain	2,291,830
	Steel	825,571
Lockages:	Commercial Boats:	2,537
	Recreation Boats:	1,201
	Light Boats:	247
	Other Boats:	74
	Total Boats:	4,059
	Total Cuts:	3,926

Current Maintenance Issues

Item (Critical Rank Order)

- Lock - Concrete Repairs
- Floating Mooring Bit Concrete Repairs
- Repair Upstream Guidewall
- Systemic Miter Gate Replacement
- Systemic Dam Machinery Replacement (Engineering and
- Design)
- Rebuild Miter Gate Machinery
- Systemic Filling Valve Replacement
- Install New High Mast Lighting
- Replace Tainter Gates
- Submersible Tainter Gate Construction
- Repair Lower Riverwall Bullnose
- Lower Guidewall Concrete Repairs
- Replace Standby Generator
- New Maintenance Building
- Remove Mooring Cell

TOTAL ESTIMATED COST: $181,000,000

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. This is adversely affecting reliability of the system. Long-established programs for preventative 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 nature of a lock malfunction, extended repairs can have major consequences for shippers, manufacturers, consumers, and commodities investors.

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.

More than 580 manufacturing facilities, terminals, and docks 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.

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