LaGrange Lock & Dam

(Versailles, Illinois)
Illinois River

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

Construction: 1936-1939

Congressional District: IL-18

Description

LaGrange Lock and Dam is 80.2 miles above the confluence of the Illinois River with the Mississippi river at Grafton, Illinois, 7.8 miles below Beardstown, Illinois.

LaGrange Lock and Dam consists of a 1,066-foot-long dam and a 110-foot-wide by 600-foot-long lock. The maximum lift is 10 feet with an average lift of 4.5 feet. It takes approximately 10 minutes to fill or empty the lock chamber.

LaGrange uses a Chanoine wicket dam, the navigable pass type. The wicket section is 436 feet long containing 109 wickets. Each wicket is 3.75 feet wide by 14.92 feet high, with a .25-foot gap between wickets. From 1987-1991, a major rehabilitation changed the physical components of the dam and operating procedures by replacing 26 of the original 135 wickets with a single 84-foot long submersible Tainter gate adjacent to the lock wall.

It takes 24-36 hours for water to travel from Peoria Lock and Dam to LaGrange during flood or high flow conditions.

History/Significance

The lock opened in 1939. Following the Supreme Court's decree of April 21, 1930, limiting the diversion of water from Lake Michigan, a new navigation plan was developed calling for removing four old locks and dams at Henry, Copperas Creek, LaGrange and Kampsville; new locks at LaGrange and Peoria, and a dam on the Mississippi River at Alton, Illinois, to provide the required navigation depth from the mouth of the Illinois to LaGrange. The lock is used only during low and moderate river flows when the wicket dams are raised to maintain the nine-foot navigation depth. During high flows, the wickets are lowered and open river conditions prevail.

LaGrange is one of only two wicket dams on the Illinois Waterway. The lock and dam elements of the complex were completed at a cost of $2,744,592.

Annual Tonnage (20-Year Historical)

Year	Tons	Year	Tons	Year	Tons	Year	Tons
2015	24,146,844	2010	25,233,087	2005	31,708,944	2000	35,164,245
2014	27,199,448	2009	25,099,513	2004	34,681,667	1999	35,597,851
2013	20,179,192	2008	26,690,243	2003	35,114,129	1998	35,090,916
2012	24,589.608	2007	29,046,034	2002	35,858,094	1997	36,481,856
2011	25,355,072	2006	32,903,584	2001	36,729,826	1996	38,465,799

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Commodity Tonnage (2015)

All Units (Ferried Autos, Passengers, Railway Cars)	-
Coal, Lignite, and Coal Coke	825,600
Petroleum and Petroleum Products	3,282,665
Chemicals and Related Products	5,220,738
Crude Materials, Inedible, Except Fuels	2,742,113
Primary Manufactured Goods	2,864,981
Food and Farm Products	9,157,172
Manufactured Equipment & Machinery	36,475
Waste Material	3,200
Unknown or Not Elsewhere Classified	13,900

Vessel & Lockage Data (2015)

Average Delay - Tows (Hours)	2.30
Average Processing Time (Hours)	0.83
Barges Empty	7,041
Barges Loaded	14,454
Commercial Vessels	2,629
Commercial Flotillas	2,625
Commercial Lockages/Cuts	3,247
Non-Vessel Lockages	-
Non-Commercial Vessels	8
Non-Commercial Flotillas	8
Non-Commercial Lockages/Cuts	8
Percent Vessels Delayed (%)	44
Recreational Vessels	9
Recreational Lockages	9
Total Vessels	2,646
Total Lockages/Cuts	3,264

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.

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