



US Army Corps
of Engineers®
Mississippi Valley Division

ILLINOIS WATERWAY

LOCKS & DAMS

ROCK ISLAND DISTRICT
2015

The 9-foot Channel Navigation Project

The Upper Mississippi River – Illinois Waterway System includes 37 locks and 1,200 miles of navigable waterway in Illinois, Iowa, Minnesota, Missouri, and Wisconsin. The U.S. Army Corps of Engineers manages the 37 locks and dams on the Mississippi and Illinois rivers providing a water stairway of travel for commercial and recreational traffic from Minneapolis-St. Paul to St. Louis and from Chicago to the Mississippi River.

The 866 miles of the Upper Mississippi River begin in Minneapolis, Minn., and end at the confluence of the Ohio River at Cairo, Ill. The 333 miles of the Illinois Waterway start in the Chicago Area Waterway and continue downstream to the Illinois River's confluence with the Mississippi River at Grafton, Ill. The Illinois Waterway is composed of seven water systems: Illinois River, Des Plaines River, Chicago Sanitary and Shipping Canal, South Branch Chicago River, Cal-Sag Channel, Little Calumet River and the Calumet River.

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.

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Illinois River

Rock Island District (Total 2014 Tonnage: 130,953,325)

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Marseilles – Marseilles, Illinois
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Front Cover: (Sept. 22, 2011) Starved Rock Lock and Dam, Ottawa, Ill. Heading into nightfall after a long day on the river, crew members from the Corps' Illinois Waterway heavy repair maintenance section cut out and replace the worn-out pintle bushing on the lower-left miter gate after pulling the gate from the river using the crane barge Hercules. Also pictured are team members moving a welder from the wall to the Hercules' deck and divers performing pre-operational diver's helmet checks prior to entering the water to inspect the gate's pintle ball.



Thomas J. O'Brien Lock & Dam

(Chicago, Illinois)
Calumet River

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Construction: 1957-1960

Congressional District: IL-2

Description

Thomas J. (T.J.) O'Brien Lock and Dam is 326.0 miles above the confluence of the Illinois River with the Mississippi river at Grafton, Illinois. It is approximately 35 miles upstream of the Lockport Lock and Dam, in the southeastern portion of Chicago.

O'Brien is located at the entrance to Lake Michigan in Chicago. The facility is a unit of the Inland Waterway Navigation System and is one of eight such facilities between Chicago and Versailles, Ill. It is composed of a navigational lock, fixed dam, and controlling works.



O'Brien is a low-lift sector gate lock. It provides a maximum lift of five feet for traffic passing from Lake Michigan to the Calumet River. The lock chamber is 1,000-feet long by 110-feet wide. The dam is 296.75 feet long. The controlling works consist of four large vertical slide gates (10 feet square) located near the center of the dam to regulate water flow. There are also two sets of sector gates weighing 216 tons each at both the river and lake ends. These are unique on the Illinois Waterway and; consequently, there is no need for tunnels in the lock walls.

T.J. O'Brien Lock and Dam controls the movement of water between Lake Michigan and the Calumet River while maintaining navigation. The lock and dam are used for flood control and waterway flushing, and also function as components of the diversion control system.

History/Significance

The lock opened in 1960. The lock and dam elements of the complex were completed at a cost of \$6,954,700.

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>
1995	12,160,450	2000	8,496,221	2005	9,982,509	2010	4,819,932
1996	12,771,152	2001	6,879,576	2006	8,902,138	2011	6,120,278
1997	11,678,981	2002	7,077,414	2007	7,849,982	2012	6,238,302
1998	8,431,541	2003	7,391,487	2008	6,997,535	2013	5,304,517
1999	8,090,201	2004	8,762,605	2009	5,259,490	2014	6,180,005

U.S. ARMY CORPS OF ENGINEERS – ROCK ISLAND DISTRICT

CLOCK TOWER BUILDING, P.O. BOX 2004, ROCK ISLAND, IL 61204-2004
Corporate Communications Office, (309) 794-5274, www.mvr.usace.army.mil

Commodity Tonnage (2014)

Coal, Lignite, and Coal Coke	1,350,800
Petroleum and Petroleum Products	863,940
Chemicals and Related Products	279,901
Crude Materials, Inedible, Except Fuels	1,285,800
Primary Manufactured Goods	1,968,600
Food and Farm Products	388,900
Manufactured Equipment & Machinery	32,464
Waste Material	9,600
Unknown or Not Elsewhere Classified	

Vessel & Lockage Data (2014)

Average Delay - Tows (Hours)	0.07
Average Processing Time (Hours)	0.24
Barges Empty	1,345
Barges Loaded	3,611
Commercial Vessels	1,582
Commercial Flotillas	1,465
Commercial Lockages/Cuts	1,465
Non-Vessel Lockages	-
Non-Commercial Vessels	76
Non-Commercial Flotillas	71
Non-Commercial Lockages/Cuts	71
Percent Vessels Delayed (%)	2
Recreational Vessels	8,786
Recreational Lockages	2,743
Total Vessels	10,444
Total Lockages/Cuts	4,279

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: June 2015



Lockport Lock & Dam

(Lockport, Illinois)
Chicago Sanitary & Ship Canal

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Construction: 1923-1933

Congressional District: IL-13

Description

Lockport Lock and Dam is 291.0 miles above the confluence of the Illinois River with the Mississippi river at Grafton, Illinois. The complex is two miles southwest of the city of Lockport, Illinois.

The lock is 110 feet wide by 600 feet long. Maximum vertical lift is 42.0 feet, the average lift is 39 feet. It averages 22.5 minutes to fill the lock chamber; 15 minutes to empty.

The Lockport Dam consists of the Metropolitan Water Reclamation District of Greater Chicago (MWRD) lock, powerhouse and associated controlling works. The MWRD, through Congressional action, transferred the maintenance responsibilities of the substructures and support structures to the Corps in the early 1980s for the roughly forty-five foot high embankment, controlling works, powerhouse substructures, and all pool retention structures. The Corps controls the lock; however, has no ownership of the controlling works.



Rehabilitation of the lock was completed in 1989 at a cost of \$22,681,000.

History/Significance

The lock opened in 1933. Lockport Lock was one of five designed and partially constructed by the state of Illinois over a period from 1923 to 1930. The complex was about 97 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 opening of the Lockport Lock coincided with the opening of the downstream Brandon Road, Dresden Island, Marseilles, and Starved Rock locks and dams. The total cost of the lock was \$2,153,867, of which \$2,020,259 was state funded and \$133,608 was funded by the federal government.

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>
1995	15,241,671	2000	17,061,543	2005	17,774,437	2010	9,634,832
1996	15,502,999	2001	14,868,698	2006	16,944,739	2011	10,112,389
1997	15,247,978	2002	16,996,645	2007	14,378,725	2012	10,747,842
1998	16,474,962	2003	15,938,800	2008	12,572,500	2013	10,019,296
1999	16,820,940	2004	16,705,780	2009	11,100,888	2014	11,462,810

U.S. ARMY CORPS OF ENGINEERS – ROCK ISLAND DISTRICT

CLOCK TOWER BUILDING, P.O. BOX 2004, ROCK ISLAND, IL 61204-2004
Corporate Communications Office, (309) 794-5274, www.mvr.usace.army.mil

Commodity Tonnage (2014)

Coal, Lignite, and Coal Coke	1,255,671
Petroleum and Petroleum Products	2,434,482
Chemicals and Related Products	1,328,865
Crude Materials, Inedible, Except Fuels	3,266,321
Primary Manufactured Goods	2,603,789
Food and Farm Products	486,182
Manufactured Equipment & Machinery	31,700
Waste Material	31,700
Unknown or Not Elsewhere Classified	24,100

Vessel & Lockage Data (2014)

Average Delay - Tows (Hours)	3.02
Average Processing Time (Hours)	1.22
Barges Empty	4,263
Barges Loaded	7,394
Commercial Vessels	2,963
Commercial Flotillas	2,779
Commercial Lockages/Cuts	3,036
Non-Vessel Lockages	1
Non-Commercial Vessels	9
Non-Commercial Flotillas	9
Non-Commercial Lockages/Cuts	9
Percent Vessels Delayed (%)	69
Recreational Vessels	370
Recreational Lockages	218
Total Vessels	3,342
Total Lockages/Cuts	3,264

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UPDATE: June 2015



Brandon Road Lock & Dam

(Joliet, Illinois)
Des Plaines River

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Construction: 1927-1933

Congressional District: IL-11

Description

Brandon Road Lock and Dam is 286 miles above the confluence of the Illinois River with the Mississippi river at Grafton, Illinois. The complex is located 27 miles southwest of Chicago; 2 miles southwest of Joliet, Illinois, near Rockdale.

The lock is 600 feet long, 110 feet wide. Nominal lift is 34 feet with an average 19-minute fill time, 15-minute emptying time. The dam is 2,391 feet long (exclusive of fixed embankment and river wall). It contains 21 operational Tainter gates (50 feet wide x 2 feet, 3-1/2 inches high), six sluice gates (7 feet, 9 inches wide x 8 feet, five inches high, bulkheaded closed), and 16 pairs of 16-foot high x 15-foot wide headgates (eight operational, eight bulkheaded closed).



From the upper limits of the city of Joliet to Brandon Road Lock and Dam, the Illinois Waterway is contained between concrete gravity walls which are from 15 to 40-feet high. The walls extend approximately three miles upstream from the lock and dam. Failure of these walls could result in flooding Joliet. Repair of the deteriorated walls and manholes was completed from 1985-1988. In 2007, the Corps began a multi-million dollar, multi-year program to repair and reinforce the walls to ensure their continued integrity.

History/Significance

The lock opened in 1933. Brandon Road Lock and Dam was one of five designed and partially constructed by the state of Illinois over a period from 1927 to 1930. The complex was about 70 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 \$4,500,000, of which \$2,031,683 were state funds and \$2,434,748 were federal funds.

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>
1995	15,397,206	2000	17,191,309	2005	18,211,310	2010	9,794,710
1996	15,750,892	2001	15,219,937	2006	17,464,661	2011	10,252,021
1997	15,291,252	2002	17,365,999	2007	14,799,310	2012	11,406,612
1998	16,628,902	2003	16,276,214	2008	12,754,886	2013	10,579,066
1999	16,919,869	2004	17,039,052	2009	11,352,574	2014	11,733,850

U.S. ARMY CORPS OF ENGINEERS – ROCK ISLAND DISTRICT

CLOCK TOWER BUILDING, P.O. BOX 2004, ROCK ISLAND, IL 61204-2004
Corporate Communications Office, (309) 794-5274, www.mvr.usace.army.mil

Commodity Tonnage (2014)

Coal, Lignite, and Coal Coke	1,295,671
Petroleum and Petroleum Products	2,500,882
Chemicals and Related Products	1,386,690
Crude Materials, Inedible, Except Fuels	3,169,421
Primary Manufactured Goods	2,795,954
Food and Farm Products	493,832
Manufactured Equipment & Machinery	34,000
Waste Material	31,700
Unknown or Not Elsewhere Classified	25,700

Vessel & Lockage Data (2014)

Average Delay - Tows (Hours)	1.75
Average Processing Time (Hours)	0.98
Barges Empty	4,239
Barges Loaded	7,552
Commercial Vessels	2,984
Commercial Flotillas	2,812
Commercial Lockages/Cuts	3,080
Non-Vessel Lockages	-
Non-Commercial Vessels	20
Non-Commercial Flotillas	20
Non-Commercial Lockages/Cuts	20
Percent Vessels Delayed (%)	46
Recreational Vessels	442
Recreational Lockages	284
Total Vessels	3,446
Total Lockages/Cuts	3,384

The 9-foot Channel Navigation Project

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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: June 2015



Dresden Island Lock & Dam

(Morris, Illinois)
Illinois River

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Construction: 1928-1930

Congressional District: IL-11

Description

Dresden Island Lock and Dam is 271.5 miles above the confluence of the Illinois River with the Mississippi river at Grafton, Illinois. The complex is 1-1/2 miles downstream from the mouth of the Kankakee River and about 15 miles southwest of Joliet, Illinois.

The complex consists of a gated concrete gravity dam. The total length of the lock and dam between abutments is about 1,320 feet. Lock dimensions are 110 feet wide by 600 feet long with a maximum lift of 22 feet. Average filling time of the lock chamber is 14 minutes; 12 minutes emptying time.



The dam consists of an arch dam section, a fixed spillway section, nine Tainter gates (60 feet wide by 17 feet high), 18 plugged headgates, and a 500-foot-long earthfill section with steel sheet pile cut-off wall connecting the headgate section to the Illinois and Michigan Canal embankment.

It takes two hours for water to travel from Brandon Road Lock and Dam to Dresden Island during flood or high flow conditions.

History/Significance

The lock opened in 1933. Dresden Island Lock and Dam was one of five designed and partially constructed by the state of Illinois over a period from 1928 to 1930. Excavation and masonry work began in December 1928. The complex was about 35 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 in 1933. The estimated cost was \$2,306,000, however, the actual cost of the project was \$3,915,964, of which \$1,412,588 was funded by the state and \$2,503,376 was funded by the federal government.

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>
1995	17,345,146	2000	19,149,771	2005	20,306,809	2010	12,539,493
1996	17,564,789	2001	17,275,102	2006	20,209,183	2011	13,105,025
1997	16,402,434	2002	19,083,929	2007	17,466,472	2012	14,338,371
1998	18,348,026	2003	19,077,141	2008	15,369,835	2013	13,747,985
1999	18,573,913	2004	19,615,387	2009	13,813,084	2014	15,391,102

U.S. ARMY CORPS OF ENGINEERS – ROCK ISLAND DISTRICT

CLOCK TOWER BUILDING, P.O. BOX 2004, ROCK ISLAND, IL 61204-2004
Corporate Communications Office, (309) 794-5274, www.mvr.usace.army.mil

Commodity Tonnage (2014)

Coal, Lignite, and Coal Coke	1,363,071
Petroleum and Petroleum Products	4,830,827
Chemicals and Related Products	2,306,514
Crude Materials, Inedible, Except Fuels	3,450,483
Primary Manufactured Goods	2,703,049
Food and Farm Products	623,908
Manufactured Equipment & Machinery	48,450
Waste Material	37,700
Unknown or Not Elsewhere Classified	27,100

Vessel & Lockage Data (2014)

Average Delay - Tows (Hours)	1.45
Average Processing Time (Hours)	0.90
Barges Empty	5,092
Barges Loaded	9,408
Commercial Vessels	2,903
Commercial Flotillas	2,840
Commercial Lockages/Cuts	3,392
Non-Vessel Lockages	-
Non-Commercial Vessels	35
Non-Commercial Flotillas	32
Non-Commercial Lockages/Cuts	32
Percent Vessels Delayed (%)	65
Recreational Vessels	499
Recreational Lockages	268
Total Vessels	3,437
Total Lockages/Cuts	3,692

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.

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UPDATE: June 2015



Marseilles Lock & Dam

(Marseilles, Illinois)
Illinois River

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Construction: 1920-1933

General Contractors:

Lock: Green and Sons Company, Chicago, Illinois & Independent Bridge Company, Pittsburgh, Pa.
Marseilles Canal: Callahan Construction Company, St. Louis, Mo.

Congressional District: IL-11

Description

Marseilles Lock is 244.6 miles above the confluence of the Illinois River with the Mississippi river at Grafton, Illinois, at the foot of Bells Island. Marseilles Dam is 2.5 miles upstream of the lock at the head of Bells Island.

The lock and dam is located southwest of Marseilles, Ill., near Illini State Park. The Marseilles Canal, adjacent to the left bank of the Illinois, extends from the dam to the lock. There are hydroelectric generating facilities at the dam.



The lock is 110 feet wide by 600 feet long. The maximum lift is 24.5 feet with an average lift lower than 24 feet. It takes an average of 15 minutes to fill the lock chamber; 10 minutes to empty it.

The dam is a fixed, gated-concrete, gravity dam. The main dam is 598.5-feet long with eight submersible Tainter gates (60-feet wide, 16-feet high, 25-foot radius) and Ogee spillway at Ice Chute. The gates are remotely controlled by the lockmaster at the lock. The South Channel Headrace dam is 111-feet long with one Tainter gate. The North Channel Headrace dam is 206-feet long with two Tainter gates. It takes six hours for water to travel from Dresden Island Lock and Dam to Marseilles during flood or high flow conditions.

History/Significance

The Marseilles complex was one of five begun by the state of Illinois in 1920. The dam was about 95 percent complete when construction was turned over to the federal government due to state financial difficulties. The lock was completed, except for the steel work, in August 1923. The contract for the lock gates, valves and lower approach wall was let in 1927. Marseilles Dam was completed in 1933 at a cost \$3,079,372, of which \$1,796,372 was funded by the state and \$1,283,000 was funded by the government.

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>
1995	19,275,050	2000	20,722,019	2005	21,262,194	2010	14,008,853
1996	19,492,099	2001	19,152,661	2006	20,621,752	2011	14,182,126
1997	18,417,218	2002	20,524,591	2007	18,022,008	2012	15,263,912
1998	20,344,523	2003	20,092,266	2008	15,961,483	2013	14,180,590
1999	20,230,988	2004	21,069,368	2009	14,799,419	2014	16,839,056

U.S. ARMY CORPS OF ENGINEERS – ROCK ISLAND DISTRICT

CLOCK TOWER BUILDING – P.O. BOX 2004 – ROCK ISLAND, IL 61204

www.mvr.usace.army.mil

Commodity Tonnage (2014)

Coal, Lignite, and Coal Coke	1,372,021
Petroleum and Petroleum Products	4,855,527
Chemicals and Related Products	2,716,289
Crude Materials, Inedible, Except Fuels	3,304,663
Primary Manufactured Goods	2,553,465
Food and Farm Products	1,869,226
Manufactured Equipment & Machinery	103,065
Waste Material	37,700
Unknown or Not Elsewhere Classified	27,100

Vessel & Lockage Data (2014)

Average Delay - Tows (Hours)	4.96
Average Processing Time (Hours)	1.13
Barges Empty	4,929
Barges Loaded	10,229
Commercial Vessels	2,978
Commercial Flotillas	2,879
Commercial Lockages/Cuts	3,503
Non-Vessel Lockages	1
Non-Commercial Vessels	51
Non-Commercial Flotillas	42
Non-Commercial Lockages/Cuts	42
Percent Vessels Delayed (%)	69
Recreational Vessels	735
Recreational Lockages	345
Total Vessels	3,764
Total Lockages/Cuts	3,891

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UPDATE: June 2015



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)

<u>Year</u>	<u>Tons</u>	<u>Year</u>	<u>Tons</u>	<u>Year</u>	<u>Tons</u>	<u>Year</u>	<u>Tons</u>
1995	22,355,156	2000	23,143,960	2005	23,374,611	2010	15,733,572
1996	21,828,118	2001	21,359,104	2006	22,555,963	2011	15,883,890
1997	20,800,129	2002	22,722,398	2007	19,880,178	2012	17,282,093
1998	22,397,917	2003	22,326,215	2008	17,503,941	2013	15,393,548
1999	22,380,541	2004	23,162,932	2009	16,889,937	2014	18,726,378

U.S. ARMY CORPS OF ENGINEERS – ROCK ISLAND DISTRICT

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Corporate Communications Office, (309) 794-5274, www.mvr.usace.army.mil

Commodity Tonnage (2014)

Coal, Lignite, and Coal Coke	1,400,671
Petroleum and Petroleum Products	4,778,144
Chemicals and Related Products	2,974,193
Crude Materials, Inedible, Except Fuels	3,853,028
Primary Manufactured Goods	2,558,741
Food and Farm Products	3,053,226
Manufactured Equipment & Machinery	44,875
Waste Material	31,700
Unknown or Not Elsewhere Classified	31,800

Vessel & Lockage Data (2014)

Average Delay - Tows (Hours)	3.23
Average Processing Time (Hours)	0.97
Barges Empty	5,104
Barges Loaded	11,515
Commercial Vessels	3,187
Commercial Flotillas	3,123
Commercial Lockages/Cuts	3,831
Non-Vessel Lockages	4
Non-Commercial Vessels	15
Non-Commercial Flotillas	12
Non-Commercial Lockages/Cuts	12
Percent Vessels Delayed (%)	72
Recreational Vessels	684
Recreational Lockages	234
Total Vessels	3,886
Total Lockages/Cuts	4,081

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: June 2015



Peoria Lock & Dam

(Creve Coeur, Illinois)
Illinois River

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Construction: 1936-1939

Congressional District: IL-18

Description

Peoria Lock and Dam is 157.7 miles above the confluence of the Illinois River with the Mississippi river at Grafton, Illinois. The lock and dam is located four miles downstream of Peoria, Ill.

The lock is the standard 600-feet long by 110-feet wide. The maximum lift is 11 feet with an average lift of six feet. It takes ten minutes to fill or empty the lock chamber. The dam is a Chanoine wicket dam, the navigable pass type. Overall length of the dam is 570 feet. The movable dam is 432-feet long containing 108 wickets (3.75-feet wide, 16.42-feet high, 0.25-foot gap between wickets). The dam includes a single 84-foot-long submersible Tainter gate.



From 1987-1990, a major rehabilitation changed the physical components of the dam and operating procedures by replacing 26 of the original 134 wickets with a single 84-foot long submersible Tainter gate adjacent to the lock wall.

It takes two days for water to travel from Starved Rock Lock and Dam to Peoria.

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 Peoria and LaGrange, and a dam on the Mississippi River at Alton, Missouri, 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.

Peoria 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 \$3,381,030.

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>
1995	33,536,734	2000	33,027,142	2005	31,802,662	2010	21,867,593
1996	32,285,882	2001	30,952,600	2006	29,387,941	2011	22,272,500
1997	30,775,497	2002	31,753,632	2007	26,913,568	2012	22,555,267
1998	32,225,608	2003	32,436,654	2008	24,939,948	2013	18,829,616
1999	32,650,196	2004	32,135,617	2009	23,552,334	2014	24,497,895

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CLOCK TOWER BUILDING, P.O. BOX 2004, ROCK ISLAND, IL 61204-2004
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Commodity Tonnage (2014)

Coal, Lignite, and Coal Coke	2,589,500
Petroleum and Petroleum Products	4,387,947
Chemicals and Related Products	4,664,211
Crude Materials, Inedible, Except Fuels	2,935,535
Primary Manufactured Goods	2,425,751
Food and Farm Products	7,370,101
Manufactured Equipment & Machinery	57,850
Waste Material	37,900
Unknown or Not Elsewhere Classified	29,100

Vessel & Lockage Data (2014)

Average Delay - Tows (Hours)	1.26
Average Processing Time (Hours)	0.64
Barges Empty	7,453
Barges Loaded	15,286
Commercial Vessels	3,296
Commercial Flotillas	3,287
Commercial Lockages/Cuts	3,869
Non-Vessel Lockages	-
Non-Commercial Vessels	13
Non-Commercial Flotillas	13
Non-Commercial Lockages/Cuts	13
Percent Vessels Delayed (%)	62
Recreational Vessels	1
Recreational Lockages	1
Total Vessels	3,310
Total Lockages/Cuts	3,883

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: June 2015



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)

<u>Year</u>	<u>Tons</u>	<u>Year</u>	<u>Tons</u>	<u>Year</u>	<u>Tons</u>	<u>Year</u>	<u>Tons</u>
1995	38,465,799	2000	36,844,064	2005	34,009,301	2010	24,308,604
1996	36,481,856	2001	34,222,158	2006	31,656,378	2011	24,877,217
1997	35,090,916	2002	34,690,822	2007	29,167,966	2012	25,811,751
1998	35,592,334	2003	35,893,395	2008	28,138,977	2013	19,408,643
1999	37,264,414	2004	34,892,422	2009	26,394,615	2014	26,122,229

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Commodity Tonnage (2014)

Coal, Lignite, and Coal Coke	1,296,200
Petroleum and Petroleum Products	4,428,372
Chemicals and Related Products	4,870,397
Crude Materials, Inedible, Except Fuels	3,047,347
Primary Manufactured Goods	2,496,384
Food and Farm Products	9,908,731
Manufactured Equipment & Machinery	13,698
Waste Material	33,400
Unknown or Not Elsewhere Classified	27,700

Vessel & Lockage Data (2014)

Average Delay - Tows (Hours)	3.75
Average Processing Time (Hours)	0.65
Barges Empty	7,885
Barges Loaded	16,325
Commercial Vessels	3,053
Commercial Flotillas	3,049
Commercial Lockages/Cuts	3,649
Non-Vessel Lockages	-
Non-Commercial Vessels	5
Non-Commercial Flotillas	5
Non-Commercial Lockages/Cuts	5
Percent Vessels Delayed (%)	44
Recreational Vessels	5
Recreational Lockages	5
Total Vessels	3,063
Total Lockages/Cuts	3,659

The 9-foot Channel Navigation Project

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UPDATE: June 2015



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