



US Army Corps  
of Engineers®  
Mississippi Valley Division

# ILLINOIS WATERWAY

LOCKS & DAMS

ROCK ISLAND DISTRICT

2016

# 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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*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-foot long by 110-foot 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>
2015	4,560,643	2010	5,131,780	2005	9,048,078	2000	8,436,175
2014	5,915,856	2009	4,641,383	2004	9,674,528	1999	7,371,509
2013	5,257,864	2008	6,822,254	2003	6,975,080	1998	8,431,541
2012	5,910,675	2007	7,294,890	2002	7,618,898	1997	11,678,981
2011	6,455,575	2006	9,479,767	2001	6,778,306	1996	12,771,152

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## Commodity Tonnage (2015)

All Units (Ferried Autos, Passengers, Railway Cars)	-
Coal, Lignite, and Coal Coke	417,400
Petroleum and Petroleum Products	601,300
Chemicals and Related Products	218,300
Crude Materials, Inedible, Except Fuels	1,281,700
Primary Manufactured Goods	1,651,850
Food and Farm Products	307,600
Manufactured Equipment & Machinery	50,193
Waste Material	28,600
Unknown or Not Elsewhere Classified	3,700

## Vessel & Lockage Data (2015)

Average Delay - Tows (Hours)	0.05
Average Processing Time (Hours)	0.21
Barges Empty	1,265
Barges Loaded	2,713
Commercial Vessels	1,439
Commercial Flotillas	1,340
Commercial Lockages/Cuts	1,340
Non-Vessel Lockages	1
Non-Commercial Vessels	82
Non-Commercial Flotillas	77
Non-Commercial Lockages/Cuts	77
Percent Vessels Delayed (%)	2
Recreational Vessels	9,219

## 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



# 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>
2015	11,814,590	2010	9,853,988	2005	16,929,707	2000	16,788,986
2014	12,360,010	2009	10,240,591	2004	17,341,066	1999	16,039,564
2013	9,889,403	2008	12,460,893	2003	15,310,005	1998	16,474,962
2012	10,401,920	2007	13,507,517	2002	16,872,206	1997	15,247,978
2011	10,552,834	2006	17,248,750	2001	15,970,297	1996	15,502,999

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## Commodity Tonnage (2015)

All Units (Ferried Autos, Passengers, Railway Cars)	-
Coal, Lignite, and Coal Coke	1,007,211
Petroleum and Petroleum Products	1,896,350
Chemicals and Related Products	1,461,260
Crude Materials, Inedible, Except Fuels	4,190,336
Primary Manufactured Goods	2,712,023
Food and Farm Products	467,710
Manufactured Equipment & Machinery	43,600
Waste Material	4,600
Unknown or Not Elsewhere Classified	31,500

## Vessel & Lockage Data (2015)

Average Delay - Tows (Hours)	1.84
Average Processing Time (Hours)	1.07
Barges Empty	4,414
Barges Loaded	7,049
Commercial Vessels	3,498
Commercial Flotillas	3,149
Commercial Lockages/Cuts	3,273
Non-Vessel Lockages	1
Non-Commercial Vessels	4
Non-Commercial Flotillas	3
Non-Commercial Lockages/Cuts	3
Percent Vessels Delayed (%)	86
Recreational Vessels	446
Recreational Lockages	256
Total Vessels	3,948
Total Lockages/Cuts	3,533

## 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: May 2016



# 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>
2015	11,745,595	2010	10,010,190	2005	17,336,609	2000	16,940,484
2014	12,588,435	2009	10,465,777	2004	17,645,088	1999	16,073,774
2013	10,427,098	2008	12,665,246	2003	15,766,953	1998	16,628,902
2012	11,089,065	2007	13,862,037	2002	17,177,894	1997	15,291,252
2011	10,760,631	2006	17,811,849	2001	16,418,031	1996	15,750,892

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## Commodity Tonnage (2015)

All Units (Ferried Autos, Passengers, Railway Cars)	-
Coal, Lignite, and Coal Coke	1,001,211
Petroleum and Petroleum Products	1,899,400
Chemicals and Related Products	1,545,360
Crude Materials, Inedible, Except Fuels	3,758,116
Primary Manufactured Goods	2,918,223
Food and Farm Products	535,410
Manufactured Equipment & Machinery	52,175
Waste Material	4,200
Unknown or Not Elsewhere Classified	31,500

## Vessel & Lockage Data (2015)

Average Delay - Tows (Hours)	1.25
Average Processing Time (Hours)	0.89
Barges Empty	4,147
Barges Loaded	7,040
Commercial Vessels	3,273
Commercial Flotillas	3,025
Commercial Lockages/Cuts	3,177
Non-Vessel Lockages	-
Non-Commercial Vessels	11
Non-Commercial Flotillas	10
Non-Commercial Lockages/Cuts	10
Percent Vessels Delayed (%)	51
Recreational Vessels	536
Recreational Lockages	305
Total Vessels	3,820
Total Lockages/Cuts	3,492

## 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





# 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>
2015	15,666,937	2010	12,727,367	2005	19,371,418	2000	18,835,137
2014	16,455,087	2009	13,162,751	2004	20,389,783	1999	17,746,340
2013	13,579,738	2008	15,181,654	2003	18,556,711	1998	18,348,026
2012	14,325,734	2007	16,524,807	2002	18,712,254	1997	16,402,434
2011	13,417,907	2006	20,548,035	2001	18,874,800	1996	17,564,789

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

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## Commodity Tonnage (2015)

All Units (Ferried Autos, Passengers, Railway Cars)	-
Coal, Lignite, and Coal Coke	919,491
Petroleum and Petroleum Products	4,097,118
Chemicals and Related Products	2,768,496
Crude Materials, Inedible, Except Fuels	4,291,956
Primary Manufactured Goods	2,810,871
Food and Farm Products	651,650
Manufactured Equipment & Machinery	62,705
Waste Material	4,300
Unknown or Not Elsewhere Classified	60,350

## Vessel & Lockage Data (2015)

Average Delay - Tows (Hours)	1.42
Average Processing Time (Hours)	0.87
Barges Empty	4,685
Barges Loaded	8,956
Commercial Vessels	2,914
Commercial Flotillas	2,835
Commercial Lockages/Cuts	3,264
Non-Vessel Lockages	-
Non-Commercial Vessels	15
Non-Commercial Flotillas	15
Non-Commercial Lockages/Cuts	15
Percent Vessels Delayed (%)	66
Recreational Vessels	598
Recreational Lockages	305
Total Vessels	3,527
Total Lockages/Cuts	3,584

## 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



# 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>
2015	16,646,081	2010	14,125,162	2005	20,132,748	2001	20,237,408
2014	17,839,296	2009	14,182,160	2004	21,752,977	1999	19,155,838
2013	14,109,508	2008	15,657,070	2003	19,619,082	1998	20,344,523
2012	15,163,406	2007	17,214,268	2002	20,132,588	1997	18,417,218
2011	14,542,844	2006	21,026,154	2001	20,886,084	1996	19,492,099

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

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

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## Commodity Tonnage (2015)

All Units (Ferried Autos, Passengers, Railway Cars)	-
Coal, Lignite, and Coal Coke	910,811
Petroleum and Petroleum Products	4,049,118
Chemicals and Related Products	3,242,196
Crude Materials, Inedible, Except Fuels	3,981,726
Primary Manufactured Goods	2,711,860
Food and Farm Products	1,559,655
Manufactured Equipment & Machinery	123,415
Waste Material	5,750
Unknown or Not Elsewhere Classified	61,550

## Vessel & Lockage Data (2015)

Average Delay - Tows (Hours)	5.46
Average Processing Time (Hours)	1.12
Barges Empty	4,576
Barges Loaded	9,588
Commercial Vessels	3,023
Commercial Flotillas	2,891
Commercial Lockages/Cuts	3,377
Non-Vessel Lockages	-
Non-Commercial Vessels	25
Non-Commercial Flotillas	24
Non-Commercial Lockages/Cuts	24
Percent Vessels Delayed (%)	73
Recreational Vessels	626
Recreational Lockages	302
Total Vessels	3,674
Total Lockages/Cuts	3,703

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UPDATE: May 2016



# 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>
2015	18,240,128	2010	15,979,781	2005	22,070,208	2000	22,377,788
2014	19,841,890	2009	16,146,846	2004	23,788,248	1999	21,384,458
2013	15,365,536	2008	17,038,590	2003	21,832,685	1998	22,397,917
2012	16,907,149	2007	19,052,616	2002	22,407,918	1997	20,800,129
2011	16,412,979	2006	23,187,461	2001	23,200,035	1996	21,828,118

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## Commodity Tonnage (2015)

All Units (Ferried Autos, Passengers, Railway Cars)	-
Coal, Lignite, and Coal Coke	956,611
Petroleum and Petroleum Products	3,973,085
Chemicals and Related Products	3,429,796
Crude Materials, Inedible, Except Fuels	4,399,331
Primary Manufactured Goods	2,749,095
Food and Farm Products	2,611,205
Manufactured Equipment & Machinery	97,455
Waste Material	2,650
Unknown or Not Elsewhere Classified	20,900

## Vessel & Lockage Data (2015)

Average Delay - Tows (Hours)	3.33
Average Processing Time (Hours)	0.95
Barges Empty	4,712
Barges Loaded	10,597
Commercial Vessels	3,096
Commercial Flotillas	3,027
Commercial Lockages/Cuts	3,590
Non-Vessel Lockages	-
Non-Commercial Vessels	43
Non-Commercial Flotillas	39
Non-Commercial Lockages/Cuts	39
Percent Vessels Delayed (%)	82
Recreational Vessels	656
Recreational Lockages	195
Total Vessels	3,795
Total Lockages/Cuts	3,824

## 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



# 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>
2015	23,401,185	2010	22,752,072	2005	29,734,319	2000	31,730,582
2014	25,833,577	2009	22,512,568	2004	32,304,149	1999	31,128,998
2013	19,011,535	2008	23,483,059	2003	31,878,067	1998	32,225,608
2012	21,658,148	2007	26,391,793	2002	32,080,328	1997	30,775,497
2011	22,773,070	2006	30,514,817	2001	33,668,096	1996	32,285,882

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## Commodity Tonnage (2015)

All Units (Ferried Autos, Passengers, Railway Cars)	-
Coal, Lignite, and Coal Coke	1,990,700
Petroleum and Petroleum Products	3,605,640
Chemicals and Related Products	5,057,882
Crude Materials, Inedible, Except Fuels	2,951,768
Primary Manufactured Goods	2,668,631
Food and Farm Products	7,056,664
Manufactured Equipment & Machinery	44,850
Waste Material	1,450
Unknown or Not Elsewhere Classified	23,600

## Vessel & Lockage Data (2015)

Average Delay - Tows (Hours)	1.14
Average Processing Time (Hours)	0.69
Barges Empty	6,641
Barges Loaded	13,694
Commercial Vessels	2,996
Commercial Flotillas	2,992
Commercial Lockages/Cuts	3,530
Non-Vessel Lockages	1
Non-Commercial Vessels	6
Non-Commercial Flotillas	6
Non-Commercial Lockages/Cuts	6
Percent Vessels Delayed (%)	42
Recreational Vessels	24
Recreational Lockages	4
Total Vessels	3,026
Total Lockages/Cuts	3,541

## 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





# 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>
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

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UPDATE: May 2016





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