

US ARMY CORPS OF ENGINEERS ROCK ISLAND DISTRICT

Illinois Waterway Navigation System Maintenance

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02 SEP 2020

Presentation to the FHWA



US Army Corps
of Engineers®



STATE OF THE DISTRICT'S INFRASTRUCTURE



Rock Island District operates and maintains the second longest nine-foot navigation channel in the Corps of Engineers.

- 17 Dams and 20 Locks
- 582 Miles of Navigation Channel
- 755 Million Tons of Cargo Locked in fiscal year 2017
- > \$1 Billion Transportation Annual Cost Benefit

Most locks and dams on the Upper Mississippi and Illinois Waterway were constructed in the 1930s and 40s and have far exceeded their projected 50-year lifespan.

Major rehabilitation and construction is needed to restore these aging facilities to full capability, prevent major disruptions and provide opportunities for growth.

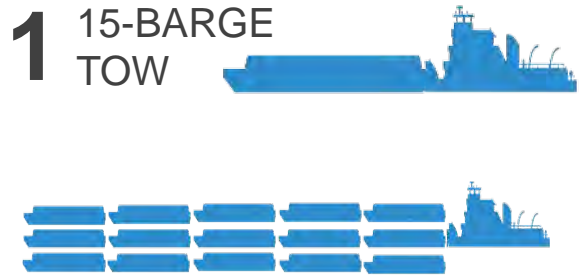
According to the 2019 U.S. Department of Agriculture study titled “**Importance of Inland Waterways to U.S. Agriculture**,” failure to modernize these and other locks and dams increases costs of U.S. farm exports and helps foreign exporters close the cost gap with the United States.





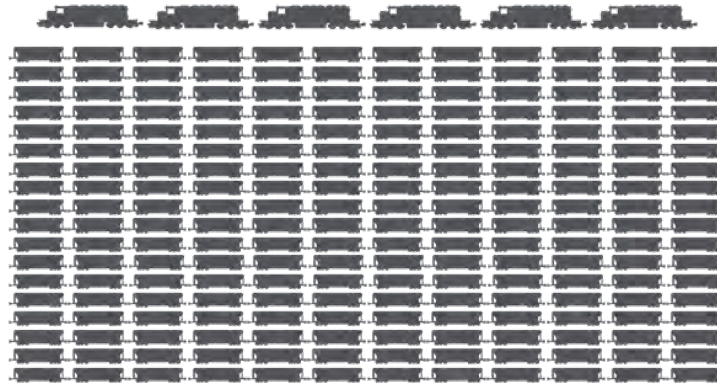
IMPORTANCE OF INLAND NAVIGATION

The inland waterway navigation system, to include the Upper Mississippi River system, saves between \$7 and \$9 billion annually over costs of shipping by other modes. Cargo capacity is a major factor in the system's efficiency.

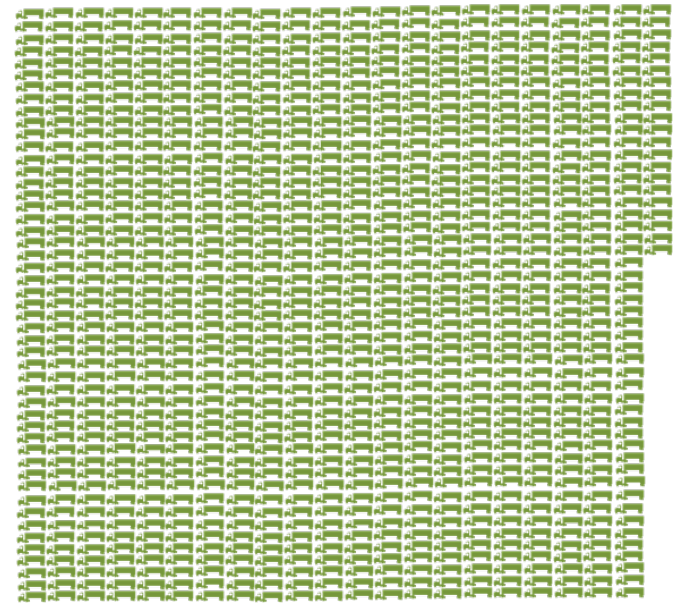


1 15-BARGE TOW

216 RAIL CARS + 6 LOCOMOTIVES



1,050 LARGE SEMI TRACTOR-TRAILERS



In 2017, 532.8 million tons of domestic barge traffic worth \$220 billion moved within the system. This includes roughly 57 percent of U.S. corn exports, valued at \$4.8 billion, and 59 percent of U.S. soybean exports, valued at \$12.4 billion.

Barge transportation is also environmentally friendly. On one gallon of fuel, a towboat can move one ton of cargo 647 miles as opposed to rail which can go 477 miles and truck which can only do 145 miles. Inland towing carbon dioxide emissions are also less at 15.62 grams per ton-mile as compared to 21.19 for rail and 154.08 for truck.



SUSTAINING THE SYSTEM



The 2019 USDA study noted that U.S. barge traffic delays on the Mississippi and other rivers are rising as a result of growing lock and dam malfunctions: “the percentage of vessels delayed (is) increasing from 35% in 2010 to 49% in 2017.” Delays on the Mississippi River alone increased from 20 percent in 2010 to 53 percent in 2017.

Delays can cost up to \$739 per hour for an average tow, amounting to more than \$44 million per year.

To improve system capacity and reduce commercial traffic delays on the Upper Mississippi River system (which includes the Illinois Waterway), the Navigation and Ecosystem Sustainability Program (NESP) was authorized in 2007 for \$2.2 billion.

NESP includes:

- Construction of seven new 1200-foot lock chambers
- small-scale navigation improvements
- ecosystem/habitat restoration efforts

NESP benefits:

- Reduces lockage times by nearly 50%
- “Single point of failure” would no longer be a concern
- Ensures vitality of the river

The good news: NESP was funded \$4.5M in FY20
The [other] news: NESP needs >1000x that much!





IWW CONSOLIDATED CLOSURES



- Upgrade and improve infrastructure on the Illinois Waterway while minimizing the impact on industry
- Consolidate full closures into the same year, rather than closing one or two locks each year
- Work at ~~6~~ 5 sites concurrently, with 4 Locks requiring dewatering
- Onsite work to take place during a summer closure/restriction period
 - Mostly July through October to avoid historical spring flooding seasons and fall harvest seasons



2020 PLANNED RESTRICTIONS/CLOSURES



- LaGrange Lock and Dam – Major Rehab/Major Maintenance
 - Full closure 01 Jul – 13 Oct 2020 (103 days) (may need up to 120 days)
 - Construction contract awarded in November 2018
 - Ongoing construction from 2019-2021 with majority of work impacting navigation being done during full closure
 - Dewatering of lock chamber
 - Significant repairs to crumbling concrete, steel structures within the lock chamber, replacement of lock machinery, etc.

- Peoria Lock and Dam - Dewatering
 - Full closure 06 Jul – 30 Sep 2020 (87 days)
 - Dewatering of lock chamber for maintenance, repair and inspection



2020 PLANNED RESTRICTIONS/CLOSURES



- Starved Rock Lock and Dam – Upper & Lower Miter Gate Installation
 - Full closure 01 July - 29 Oct 2020 (120 days)
 - Construction contract awarded in September 2019
 - Dewatering of lock chamber to replace/modify the miter gate sills and anchorages to accommodate new vertically framed Miter Gates, maintenance, inspections

- Marseilles Lock and Dam – Upper Miter Gate Installation
 - Full closure 01 July - 29 Oct 2020 (120 days)
 - Construction contract awarded in September 2019
 - Dewatering of lock chamber to replace/modify the miter gate sill and anchorages to accommodate new vertically framed Miter Gates, maintenance, & inspections



2020 PLANNED RESTRICTIONS/CLOSURES



- Dresden Island Lock and Dam – Upper Bulkhead Recess Installation
 - 90+ day restriction period with 21 day full closure
 - Replace emergency miter gates which have been deemed unfit for dewatering
 - Preparatory work for potential 2023 (or later) closures

- ~~Brandon Rd Lock and Dam – Upper Bulkhead Recess Installation~~
 - ~~90+ day restriction period with 21 day full closure~~
 - ~~Replace emergency miter gates which have been deemed unfit for dewatering~~
 - ~~Preparatory work for potential 2023 (or later) closures~~



LAGRANGE MAJOR REHABILITATION/MAINTENANCE



Vertical concrete pre-cast panel installation



New gate machinery base





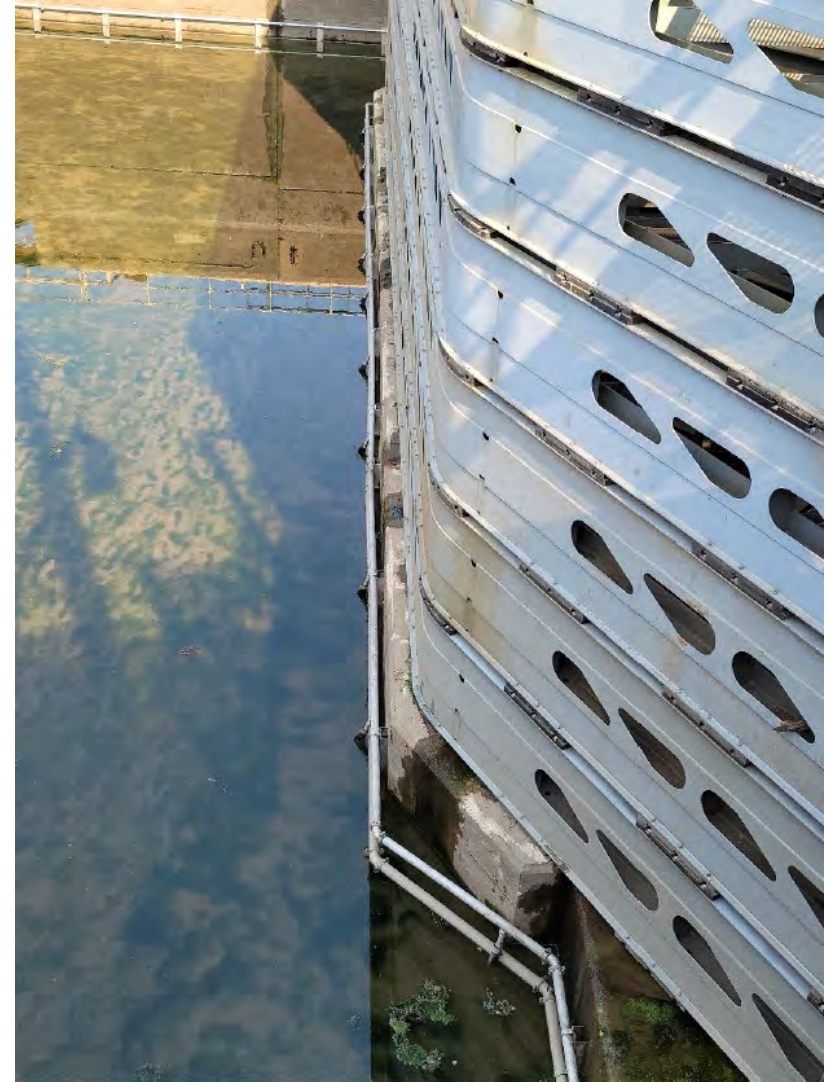
PEORIA MAJOR MAINTENANCE



Elevated compressor platform



New bubbler piping



PEORIA MAJOR MAINTENANCE



Miter gate anchorage repairs



New checkpoint





19 MAY 2020 – STARVED ROCK LOCK





STARVED ROCK MAJOR MAINTENANCE





STARVED ROCK MAJOR MAINTENANCE





MARSEILLES MAJOR MAINTENANCE





MARSEILLES MAJOR MAINTENANCE





MARSEILLES MAJOR MAINTENANCE





DRESDEN ISLAND BULKHEAD RECESSES





2023 (T) PLANNED RESTRICTIONS / CLOSURES



- Starved Rock Sector Gear Rehab
- Marseilles Electrical Rehab
- Brandon Road Lock and Dam Upper Miter Gate Installation
 - Potential to include any approved **GLMRIS** work that requires a lock closure (?)
 - Dewatering of lock chamber to replace/modify the miter gate sill and anchorages to accommodate new vertically framed Miter Gates
- Dresden Island Lock and Dam Upper Miter Gate Installation
 - Dewatering of lock chamber to replace/modify the miter gate sill and anchorages to accommodate new vertically framed Miter Gates
- Lockport Lock – Gate repairs (?)

More information about the lock closures can be found on the District's website:

www.mvr.usace.army.mil



2020 ILLINOIS WATERWAY SCHEDULED WORK



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US Army Corps of Engineers Rock Island District



New Rock Island District Lock Status Website

The Rock Island District maintains and operates a total of 20 lock sites on the Mississippi River and Illinois Waterway. Click the link below for updated information about the current operational status of each site and details of upcoming scheduled closures.

[Lock Status Website](#)

1 2 3 4 5 6

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Navigation Information

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- Find a Vessel
- Lock Queue Report
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[Lock and Dam Information](#)

[Lock and Dam Phone Numbers](#)

Lock and Dam System Profile

- Illinois River
- Mississippi River

[Navigation and Ecosystem Sustainability Program](#)

[Navigation Charts](#)

- Upper Mississippi River
- Illinois Waterway
- Lower Mississippi River
- All other Inland Navigational Charts

[Navigation Notices](#)

[Navigation Notice No. 1 \(Mississippi and Ohio Rivers and tributaries\)](#)

[Navigation Status - 2020 Closures](#)

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Navigation

Navigation is the primary mission of the Rock Island District. Its oldest mission, which dates back to the 4½-foot navigation channel construction in the 1880s, Rock Island District devotes nearly 70 percent of its resources and efforts to operating and maintaining the navigation system.

The inland waterway navigation system is essential to the economy of the Midwest as well as the nation. Rock Island District maintains and operates 314 miles of nine-foot navigation channel and 12 lock and dam sites on the Mississippi River, and 268 miles of navigation channel and eight lock and dam sites on the Illinois Waterway.

The District's work on this system allows for safe and efficient transport of a wide variety of commodities. Barge traffic traveling through the District's lock and dam system accounts for hundreds of millions of dollars in interstate commerce each year.

Operating the locks and dams is a continuous job as tows and recreational boats can lock through all year long as weather conditions permit. The current 9-foot channel lock and dam system was built in the 1930s with an estimated life span of 50 years. The structures have long outlived their life expectancy but continue to operate 24/7 due to the hard work and dedication of the men and women charged with maintaining the structures. Nearly half of the District's employees are involved in some part of the maintenance or operation of the lock and dam and navigation system.

The Rock Island District's waterway navigation system is the second longest of any Corps District and the number of locks and dams it manages also ranks second within the Corps.



Locks and Dams



Fact Sheets - Locks and Dams


[Collapse All](#) [Expand All](#)

- [Locks and Dams - Illinois Waterway](#)
- [Locks and Dams - Upper Mississippi River](#)



2020 ILLINOIS WATERWAY SCHEDULED WORK




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US Army Corps of Engineers Rock Island District Website

Closure Schedule

****NOTICE**** The Illinois Waterway Lock Closures are now underway. Should changes to the schedule be needed, they will be posted in **RED** on this website as soon as they are available.

****NOTE:** Projects and dates listed below are contractual completion dates and do not necessarily reflect the exact date each lock will reopen. The schedule is subject to change due to river levels, weather conditions, health and safety concerns due to COVID-19, project funding, and unknown circumstances that may be discovered during rehabilitation.

2020

LaGrange Lock and Dam – Major Rehabilitation & Lock Machinery Replacement

- Full closure scheduled **July 1-Oct. 13** (Closure end date changed from Sept. 30 to Oct. 13 on 7/17/2020.)

Peoria Lock and Dam – Dewatering for Maintenance and Inspection

- Full closure scheduled **July 6 - Sept. 30**

Starved Rock Lock and Dam – Upper & Lower Miter Gate Installation

- Full closure scheduled **July 1-Oct. 29**

Marseilles Lock and Dam – Upper Miter Gate Installation

- Full closure scheduled **July 6-Oct. 29**

Dresden Island Lock and Dam – Upper Bulkhead Recess Installation

- Partial closure scheduled **July 6-Oct. 3** and **Oct. 25-28**
 - Locks operational from 6 p.m. to 6 a.m. with a 70-ft width restriction and no ability to pull unpowered barges.
- Full closure scheduled **Oct. 4-24**

- [Lock Queue Report](#)
- [Lock Status Report](#)
- [Tonnage Report](#)

[Current Lock Status](#)

[Dam Safety Program](#)

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- [Mississippi River](#)

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UPCOMING OPPORTUNITIES



QUESTIONS?