

# LD 2021 REVIEW – 2022 WORK

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Lock and Dam 6, Trempealeau WI.



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# 2021 UPPER MISSISSIPPI RIVER NAVIGATION STATISTICS

First



Tow

March 19 -  
Motor Vessel  
R. Clayton  
McWhorter

Last



Tow

November 28 -  
Motor Vessel  
Jonathon  
Erickson



## TONNAGE



Total commodities shipped  
**93,141,074**  
tons

This is approximately  
**9 million tons** below the  
**10-year average**

## Commercial lockages

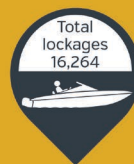


Total lockages  
17,891

**1,000** lockages  
below the  
**10-year average**



## Recreational lockages & vessels



Total  
lockages  
16,264



Total Vessels  
37,747

- Avg Nav Season = 253 days
- 2021 Nav Season = 255 days



*Highest rec #s in MVD*





# ***Readiness:*** **Lock and Dam Tow Rail Design-Build**

**SUMMARY:** A \$20M+ design-build contract was awarded in May 2019, design and construction for six locks and dams are ongoing.

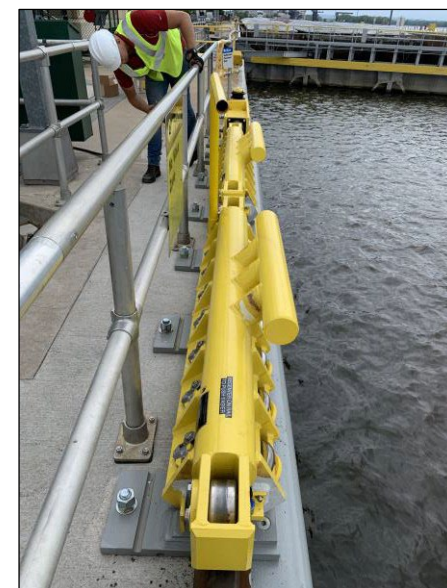
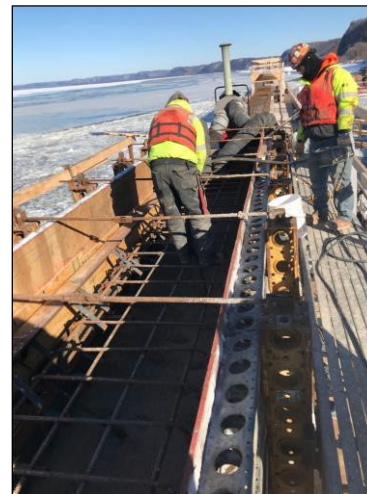
## **COMMUNICATION OBJECTIVES:**

- MVP will invite media at Locks and Dams 4 and 7.
- The rehabilitation of these tow rail systems are integral to the safety of the navigation industry as they travel upriver.

## **KEY TAKEAWAYS:**

- Construction is underway at Locks and Dams 4 and 7. Construction was completed at Locks and Dams 8 and 9 in 2020 and LD 6, 8 and 9 in 2019.
- The new tow rail systems have been utilized successfully during the 2020 and 2021 navigation season, with positive feedback from the navigation industry.

## **ST. PAUL DISTRICT**



*Clockwise from top left: Concrete removal; new concrete placement; thermite welding of new rail; close-up of new mules; new system being used by navigation industry at Lock and Dam 8.*



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# Readiness

## Lock and Dam 6 Dewatering

**SUMMARY:** St Paul District dewatered Lock and Dam 6 in Trempealeau, Wisconsin, to conduct preventive and corrective maintenance.

### **COMMUNICATION OBJECTIVES:**

- Work included heat straightening steel damage to miter gates, MG anchorage replacement, concrete repairs and MG pintle replacement.
- Our navigation mission requires us to complete routine maintenance to ensure that MVP provides safe, reliable and efficient waterway transportation to all users of the Upper Mississippi River.

### **KEY TAKEAWAYS:**

- Work completed over non-navigation season (winter). No impacts to navigation stakeholders.
- All labor completed by the district maintenance and repair crew, supplemented with seasonal staff from locks and dams.
- Additional safety measures were added due to winter conditions.

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## PEOPLE/REVOLUTIONIZE:

# Lock and Dam 5A, 8, 10 Replacement of Miter Gate Anchorages

**SUMMARY:** St. Paul District is currently overseeing the install of new top-mounted anchorages at Lock and Dam 5A, 8, and 10 for newly fabricated miter gates. MGs are scheduled to be installed Summer of 2022.

### OBJECTIVES:

- Remove the current anchorage system that has been in place since the 1930s
- Install a newly designed, more robust top-mounted anchorage system
- Complete the excavation of the monolith, removal of old anchorage, install of new anchorage and be offsite by the opening of the FY 2021 navigation season

### KEY TAKEAWAYS:

- This was the St. Paul District's first installation of the newly designed anchorage system.
- The new anchorage system is more robust, ensuring the new miter gates have secure operation for the life of the gates.



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## ST. PAUL DISTRICT



*Representatives from the installation Contractor's QC, the USACE contracting representative, technical lead and project manager observe a "Pull Test," measuring the movement of test anchor rods. The jack (in the background) pulls upwards on the grouted anchor rods to measure if any movement occurs. The measuring device (mechanical dial) can be seen on top of the jack.*

*The test was a success.*







# NON-NAV MAINTENANCE

## MG ANCHORAGES – REPAIRS LD 3, 4



Figure 1. Aerial of MG Anchorage pit



Figure 2. Fractured Bottom Plate at Lock 5A



Figure 3. Crack in bottom plate at Lock 4



Figure 4. Section loss in bottom plate at LD 3





# MAINTENANCE - DIVISION COLLABORATION



*Lock and Dam 2 MG Anchorage and Gate install.*

*\* MVP staff / equipment supported IWW multiple lock closure repairs.*



# MITER GATES AND ANCHORAGES TENTATIVE SCHEDULE

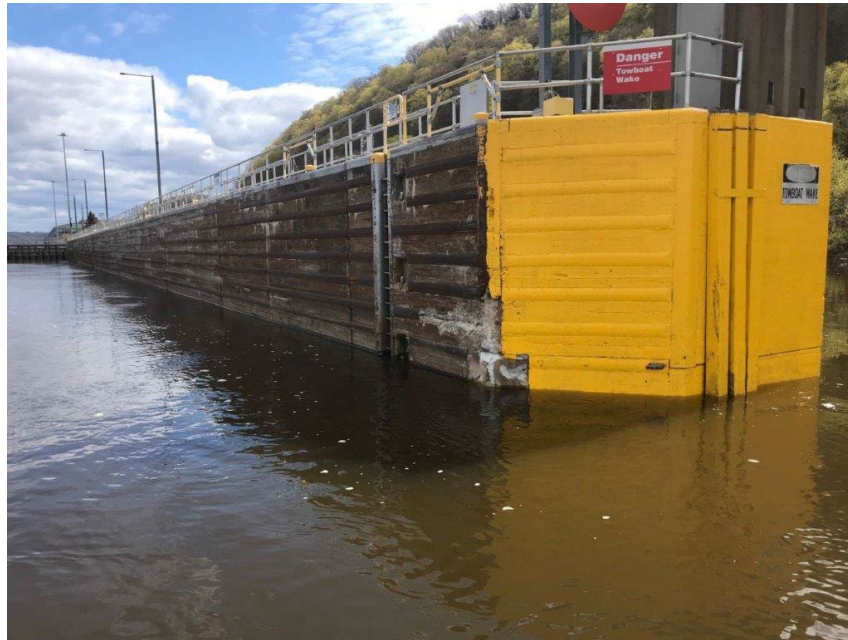
<u>Non nav:</u>	<u>Anchorage Replacement</u>	<u>Navigation:</u>	<u>Miter Gate Install</u>
2020-2021	LD 2	2021	LD 2
2021-2022	LD 5A, 6, 8, 10	2022	LD 5A, 8
2022-2023	LD 3, 4	2023	MVD assets supporting IWW, no MVP gate install
2023-2024	LD 7, 9	2024	LD 10
	Dewater box LD 9		
2024-2025	Dewater LD 2	2025	LD 6, 7
2025-2026	LD 5	2026	LD 9
		2027+	LD 3, 4, 5

\*MG exchange: 4 12-hour closures needed per lock + 2 contingencies 12-hour closure dates.  
Closures typically scheduled for Tue and Thu each week.





# NON-NAV MAINTENANCE LD 9 DS GW BULLNOSE



## St Paul District Channel Condition Report:

**LD9:** Be advised to stay clear of the bullnose section of the lower guide wall as it contains unprotected concrete and potential for exposed steel. All tows transiting the lock should avoid landing or rubbing on the exposed section which is primarily on the river side and tip of the bullnose.



# QUESTIONS

