

# NEW LOCK AT THE SOO PROGRESS UPDATE

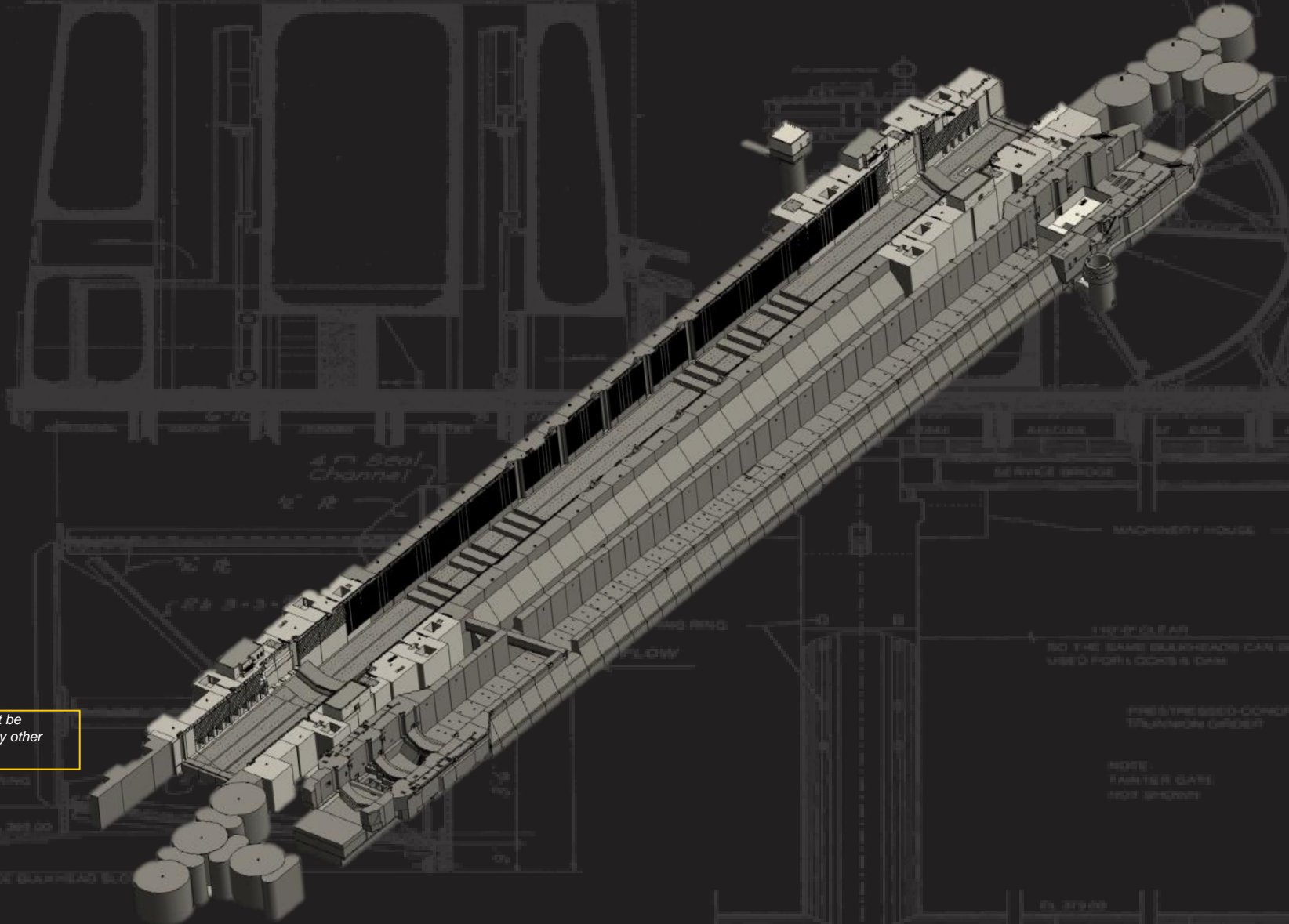
Mollie Mahoney  
Project Manager  
U.S. Army Corps of Engineers  
Detroit District  
23 July 2024

*"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."*



US Army Corps  
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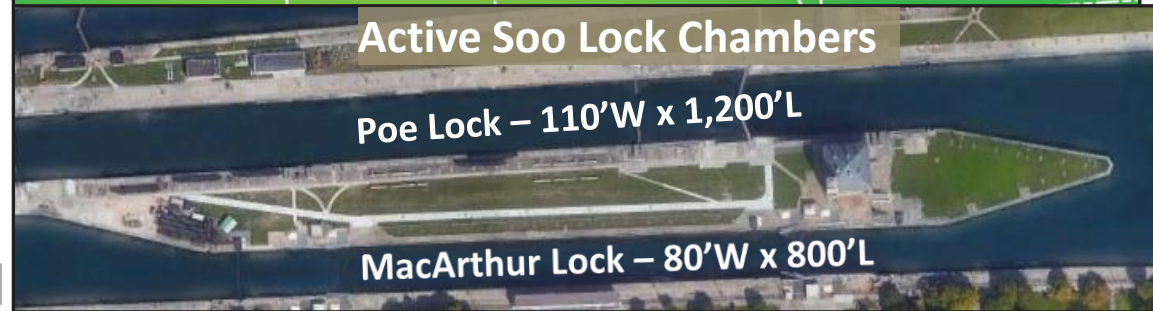
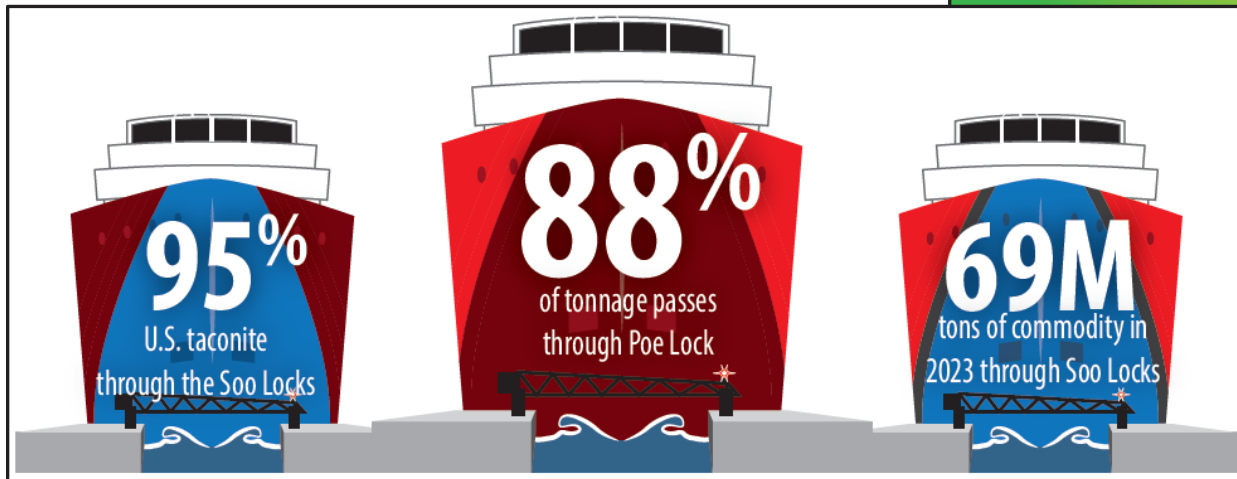


# SOO LOCKS IMPORTANCE

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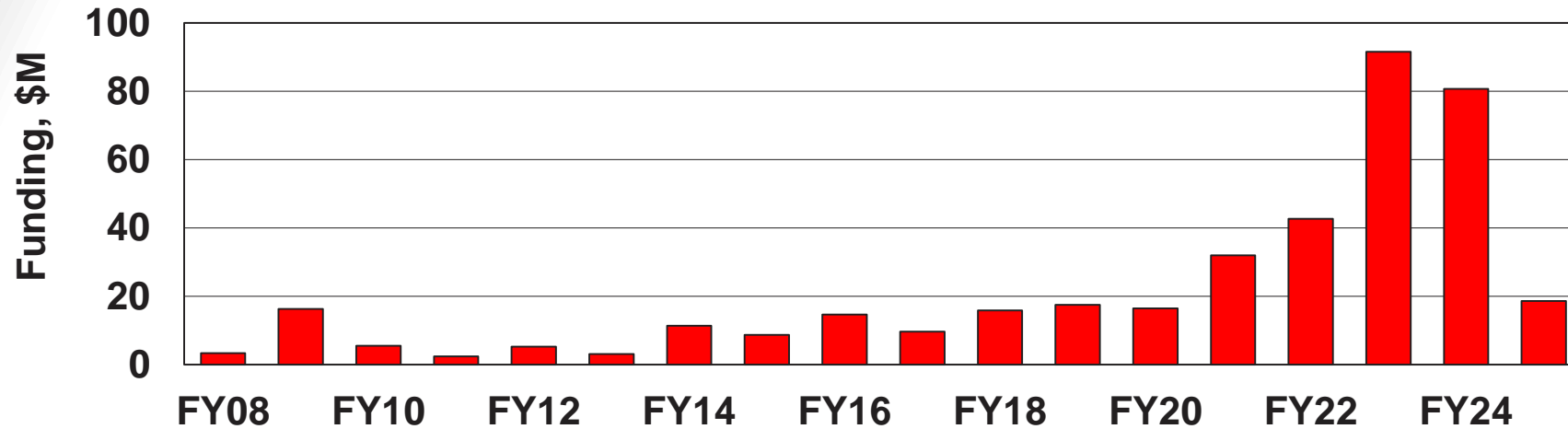
- Nearly all domestically produced high strength steel is made with iron ore that transits the Poe Lock
- Within 2-6 weeks of an unscheduled Poe Lock outage, 75% of our nation's high strength steel production would cease
- Six-month unscheduled outage would result in 11 million jobs lost and \$1.1 trillion economic impact





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# MAINTAINING EXISTING SOO LOCKS FACILITY (ASSET RENEWAL, O&M FUNDED)



Candy Cane Pump System 2024

## Projects Funded in FY23

### **FY23 Pres Bud \$38.3M:**

- Construction of Backup Generator - \$16.0M
- Construction of Facility Wastewater Sewer Rehab - \$4.40M
- Various Facility and Site Rehab - \$13.4M
- Various Lock Rehab Projects: \$4.48M

### **FY23 BIL \$38.6M:**

- Poe Lock Gate 1 Replacement Fabrication: \$12.35M
- Crib Dam Repairs and Mooring Facility: \$24.7M
- Floating Plant Outfitting; Poe Lock Recess Design: \$1.5M

### **FY23 Work Plan \$14.6M:**

- West Center Pier & Facility Lighting: \$2.5M
- Poe Lock Stoplog and Miter Gate Cylinder Rods: \$0.91M
- Facility Improvements, Maintenance, and Acquisition Contract Management: \$3.56M
- Additional capability for Backup Generator, Sewer Rehabilitation, and Maintenance & Storage Facility Repairs: \$7.64M

## Projects Funded in FY24

### **FY24 Pres Bud & Work Plan \$80.7M:**

- Marine Lifting Equipment: \$37M
- Design and construction Rehab of West Center Pier North Side: \$12M
- Design and construction Poe Lock Dewatering Emergency Bulkhead: \$6M
- Initial Aquadigger Dry Dock \$3.12M
- West Center Pier Safety, Security, and Lighting Replacement \$3.0M
- Project Owned Shallow Draft Tugboat \$3.0M
- Construction of Poe Stop Log Recess Repairs: \$2.7M
- Condition and Functionality Assessment of St Marys River Ice Islands \$2.3M
- Construction of Facility Wastewater Sewer Rehabilitation \$2.0M
- Design and Repair of Gate 3 Structural Defects: \$2.0M
- Various Lock and Facility Projects: \$7.58M

## Projects Funded in FY25

### **FY25 Pres Bud \$18.35M:**

- Heavy Lift Crane Equipment: \$17.6M
- Mac & Poe Lock Valve Bulkhead E&D: \$750K
- Operations Building Sustainment – Fire Alarm System Modernization E&D: \$247K



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# NEW LOCK AT THE SOO



**Current Facility**



**Future Facility**

New lock will have **same dimensions** as existing Poe Lock (1200 ft length by 110 ft width and a depth of 32 ft)



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# NEW LOCK AT THE SOO ALLOCATIONS & CAPABILITIES



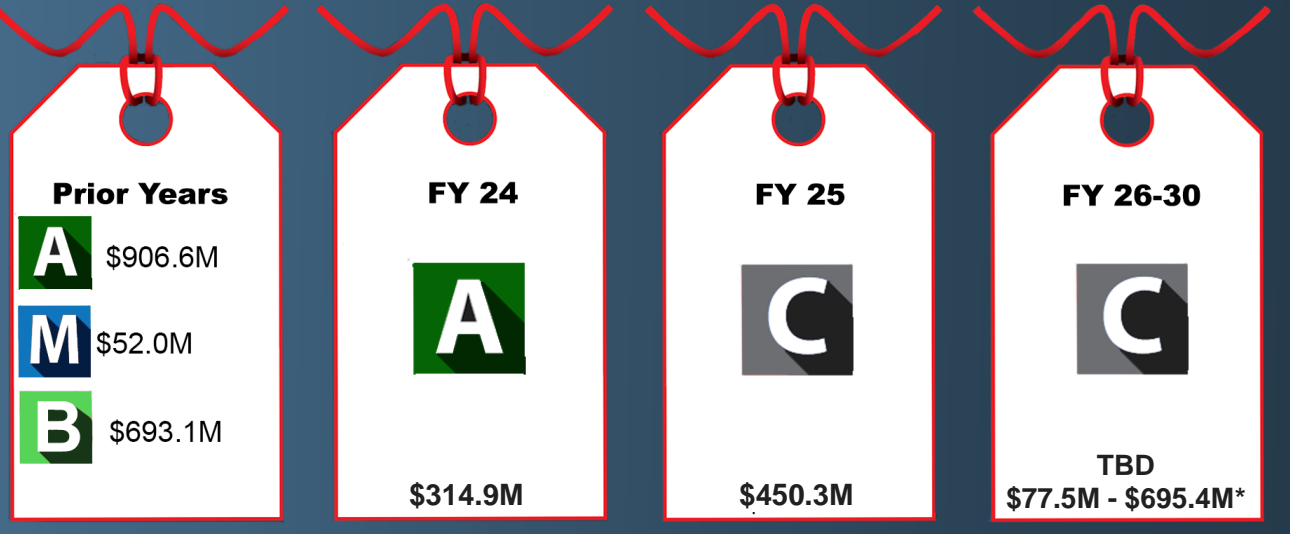
\$1.967B  
Allocated to Date

**A** Federal Allocation

**B** Bipartisan Infrastructure Law

**M** State of Michigan

**C** Capability



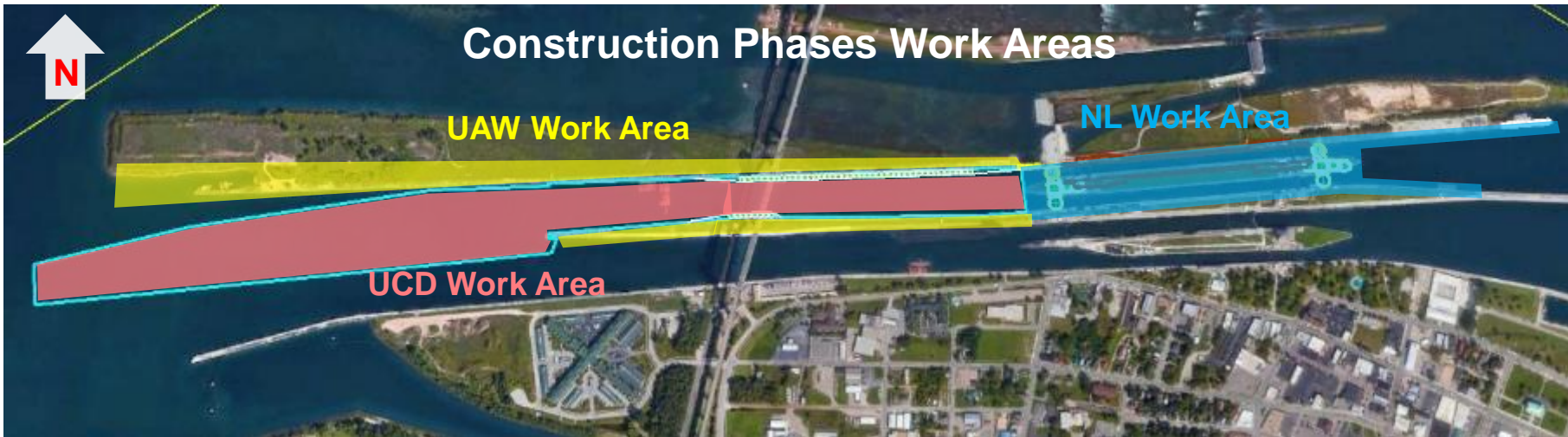
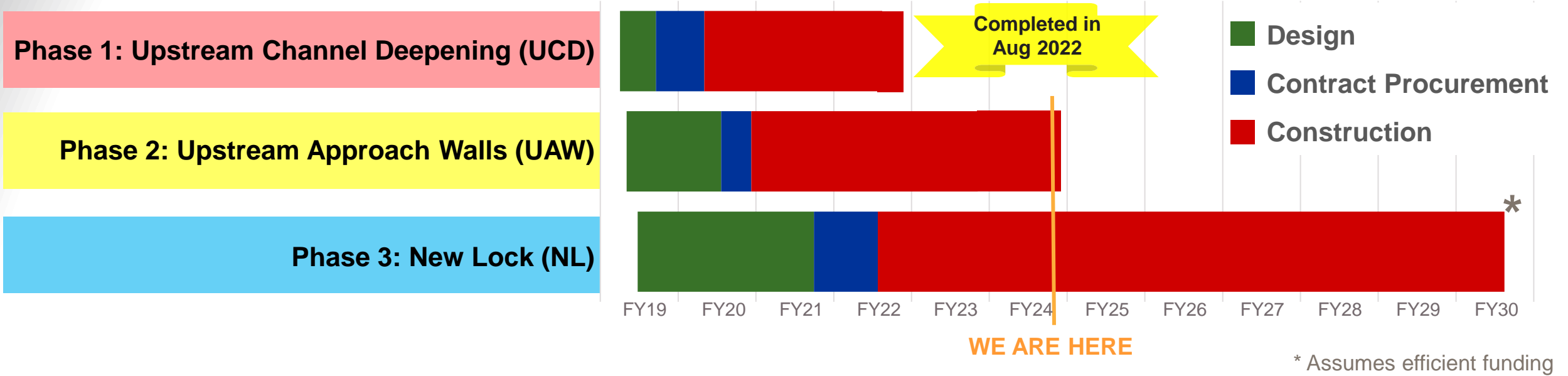
\* Based on Authorized Project Cost of \$3.219B and includes a management reserve of \$617.9M that is not currently planned to be requested but could be requested for currently unknown contractual needs.

Activities	FY25 Capability		FY 26 Capability
	FY25 Pbud	FY25 Remaining	
Supervision and Administration (Labor)	\$11.0M		\$11.0M
Phase III - Option 3, "Lock Operational"	\$253.1M	\$7.3M	
Phase III - Option 4, "Downstream Work"		\$49.4M	
Phase III - Option 5, "Hands Free Mooring"		\$26.6M	
Phase III - Option 6, "Downstream Ship Arrestors"		\$28.8M	
Remaining Upper Approach Wall Work		\$74.1M	\$22.5M
<b>TOTAL</b>	<b>\$264.1M</b>	<b>\$186.2M</b>	<b>\$33.5M</b>



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# NEW LOCK AT THE SOO CONSTRUCTION STATUS



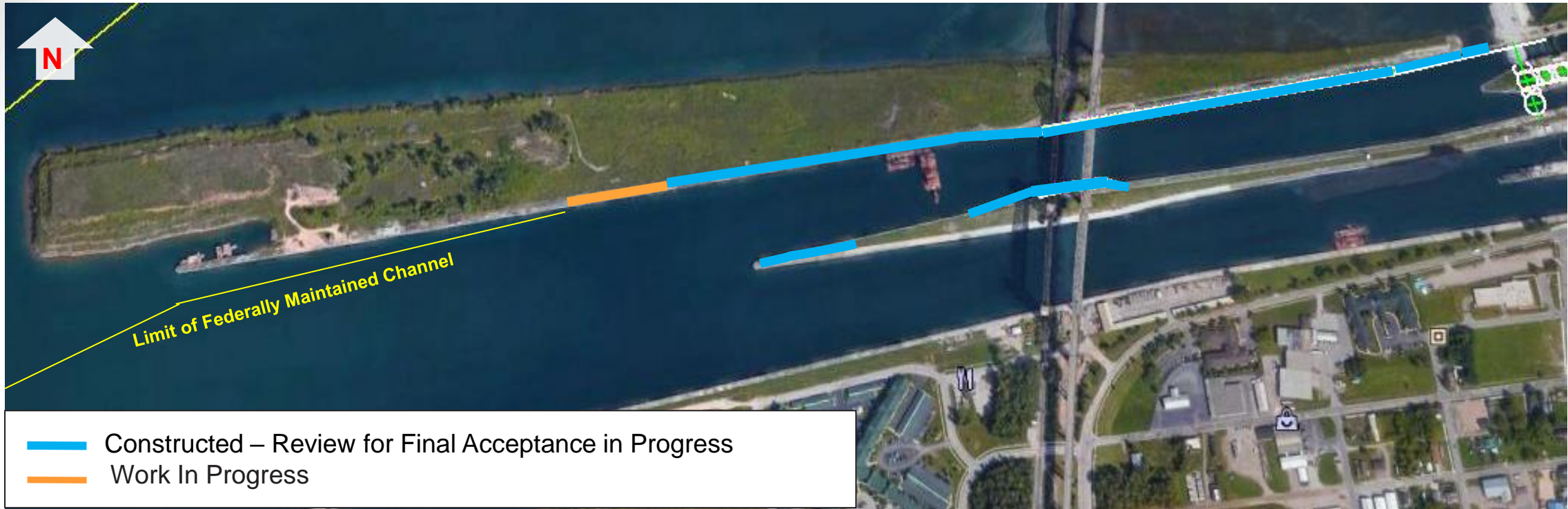


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# PHASE 2: UPSTREAM APPROACH WALLS UPDATE



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**Scope:** Rehabilitate approach walls upstream of new lock including reconstruction/refacing existing 100-year-old walls, installation of new lighting, bollards, and concrete cap repairs.

**Construction Status:**

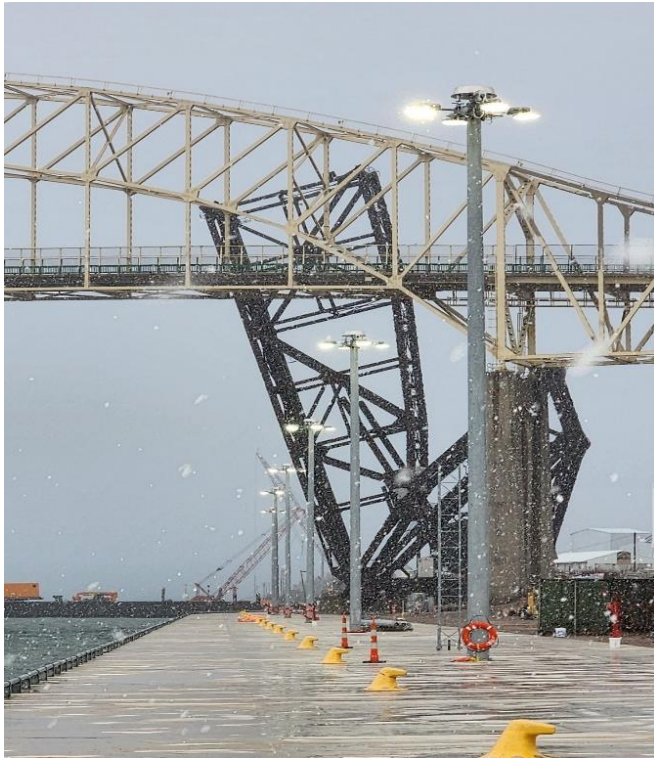
- \$117M Contract awarded in September 2020 to Kokosing-Alberici
- Contractor is generally working from East to West and has completed 94% of the required contract work.

**Estimated Completion: Summer 2024**

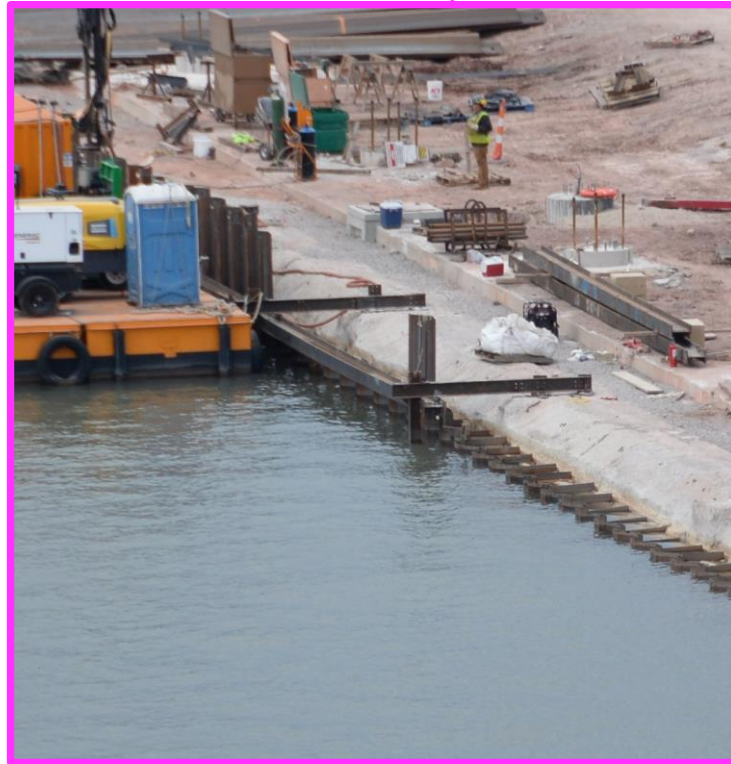


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# PHASE 2: UPSTREAM APPROACH WALLS PROGRESS



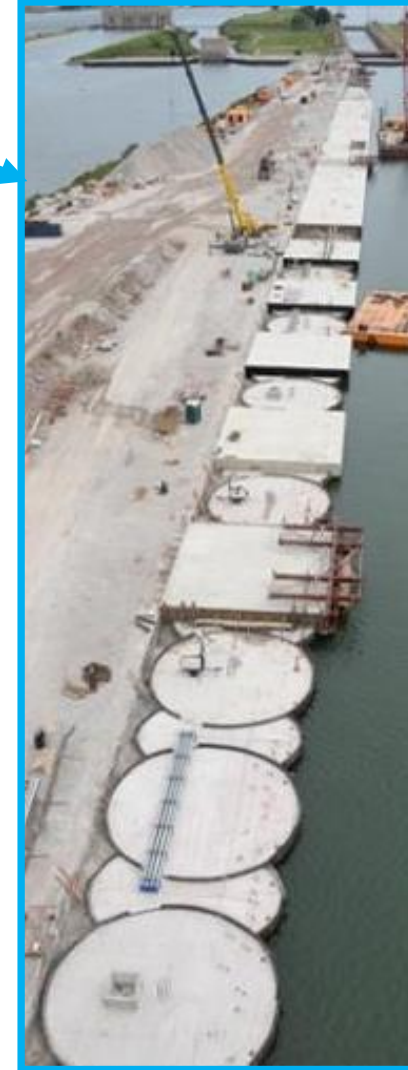
New guard rail, mooring bollards, and LED high mast light poles



SSP Face Wall: Placement of steel sheet piles



SSP Transition Wall: Tremie concrete placement behind SSP wall face



Circular SSP Walls: 34' dia. SSP Cells with cap placement in progress





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# PHASE 2: UPSTREAM APPROACH WALLS PROGRESS



- 34 ft dia. Circular SSP Walls
- SSP Transition Walls
- SSP Faced Walls
- H-Pile & Concrete Panel Walls



Dead men tie back and mooring bollard foundation installation



Placement of tremie concrete behind concrete panels



Concrete panels



H-Pile, concrete panel, waler, and tie rod



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# PHASE 3: NEW LOCK



**Scope:** Construct new 1,200' long by 110' wide by 32' deep chamber, New Pump Well, and New Power Plant Bridge, and rehabilitate downstream approach walls.

**Construction Status:**

- Contract awarded in July 2022 to Kokosing Alberici Traylor, LLC
- Current contract award valued at \$1.556B (83% of total contract cost)



- \$366M of work completed through end of June 2024

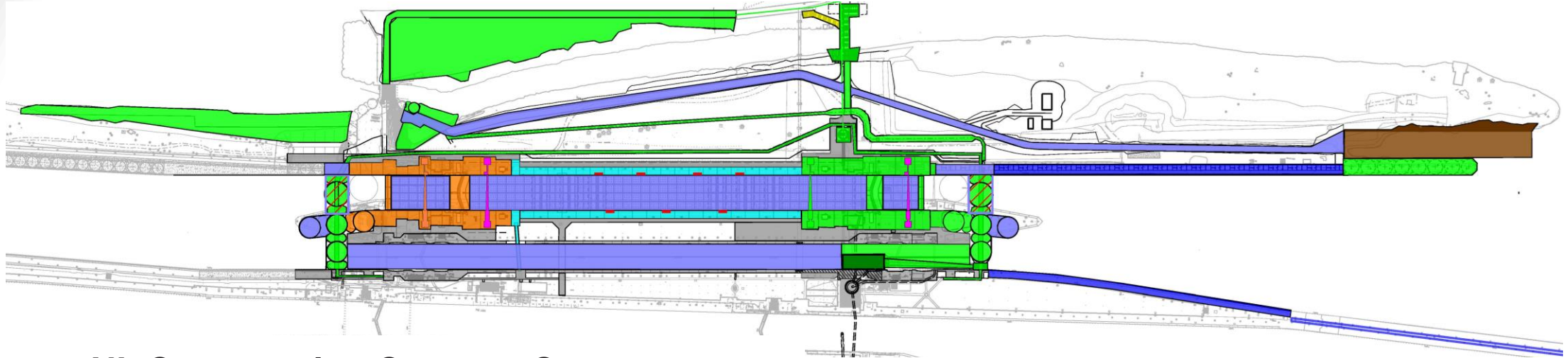
- 2024 focus:
  - Dewatering of Construction Site
  - Electrical Work
  - Demolition of Sabin Lock
  - Filling of Davis Lock Chamber
  - Bridge construction
  - Bedrock Excavation
  - Mass Concrete Placement

**Estimated Completion:** Summer 2030



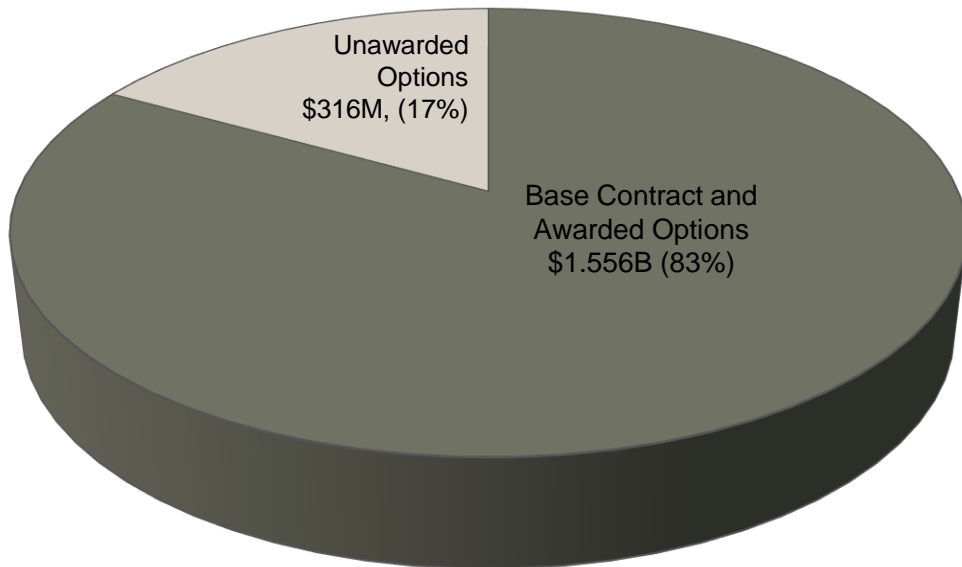
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# PHASE 3: NEW LOCK CONTRACT BASE & OPTIONS













## NL Construction Contract Cost

Total contract valued at \$1.872B



## New Lock (Ph. 3) Base and Options Detail Legend

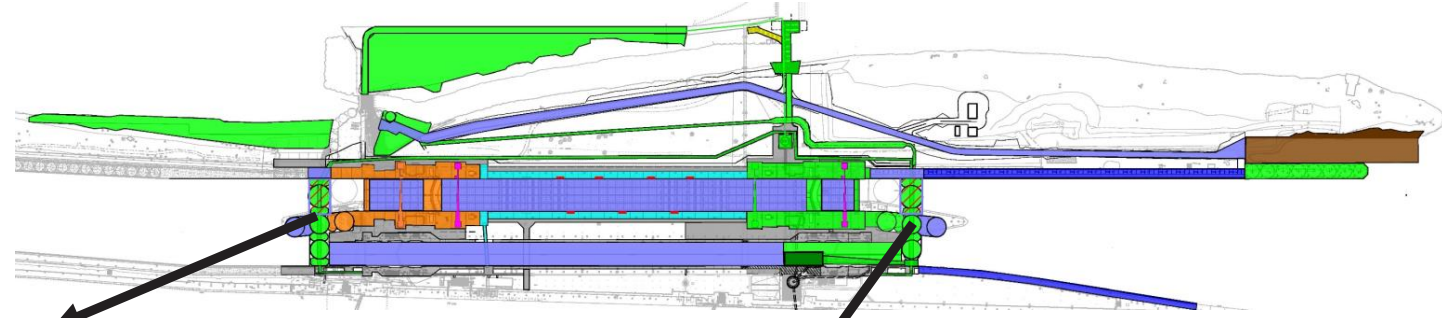
-  BASE BID - AWARDED
-  OPTION 1A UPSTREAM WIDE WALL MONOLITHS - AWARDED
-  OPTION 1C NPP BRIDGE RAMP - AWARDED
-  OPTION 2 NEW PUMP WELL COMPLETION - AWARDED
-  OPTION 7 ALLIGATOR'S MOUTH MOORING AREA - AWARDED
-  OPTION 1B CHAMBER WALL MONOLITHS - AWARDED
-  OPTION 3 LOCK OPERATIONAL } Pricing Expires Sep 2024
-  OPTION 4 DOWNSTREAM WORK } Pricing Expires Sep 2025
-  OPTION 5 HANDS FREE MOORING
-  OPTION 6 DOWNSTREAM SHIP ARRESTORS



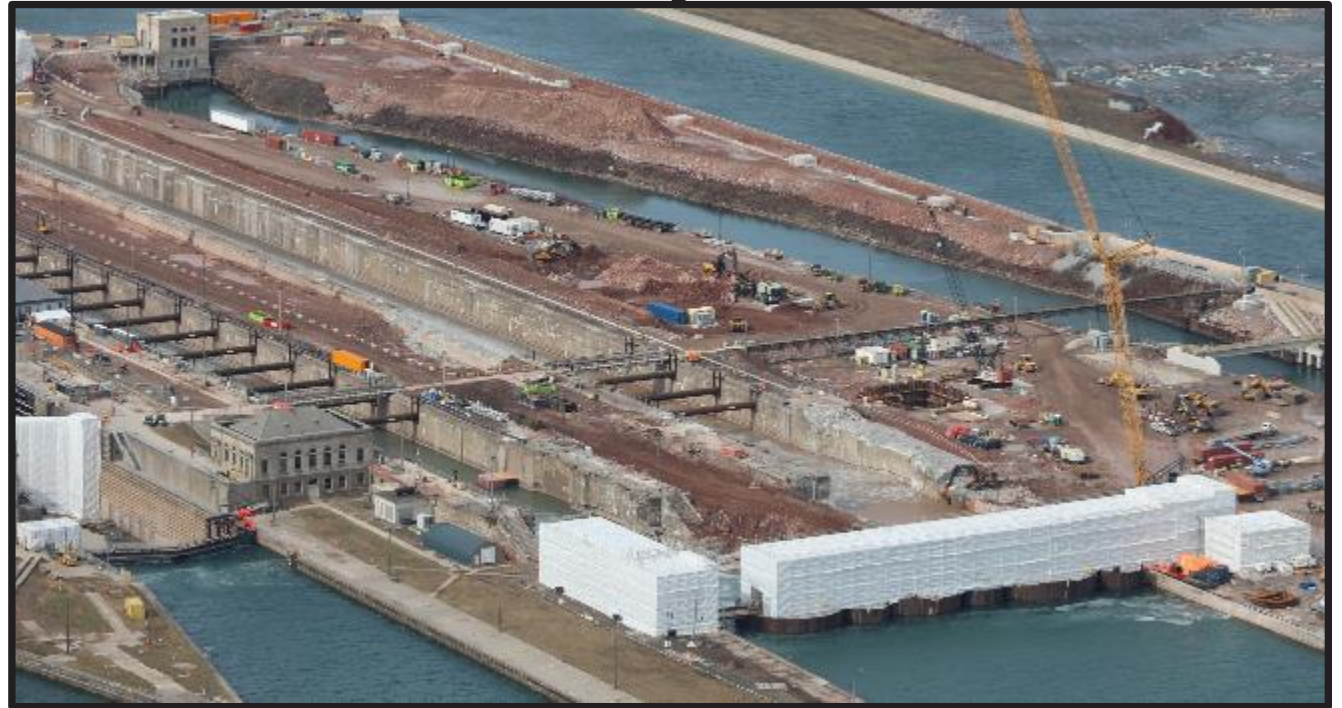
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# PHASE 3: NEW LOCK PROGRESS

## 2024 WINTER WORK OPERATIONS



**Upstream Cofferdam with Scaffolding Enclosure**



**Downstream Cofferdam with Scaffolding Enclosure**



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# PHASE 3: NEW LOCK PROGRESS

## SEEPAGE PREVENTION



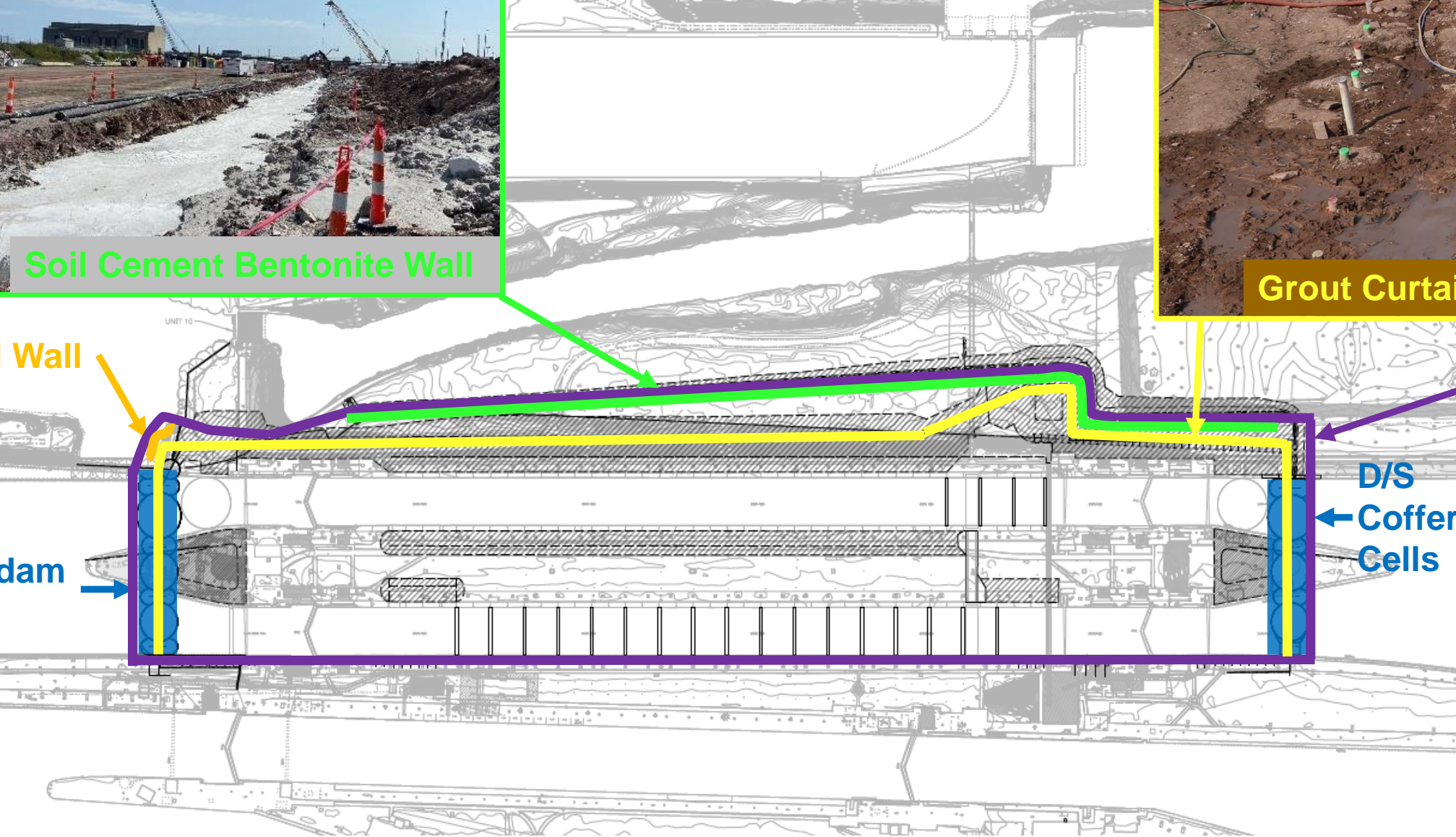
Soil Cement Bentonite Wall



Grout Curtain

Hybrid Wall

U/S  
Cofferdam  
Cells



Project  
Damming  
Surface

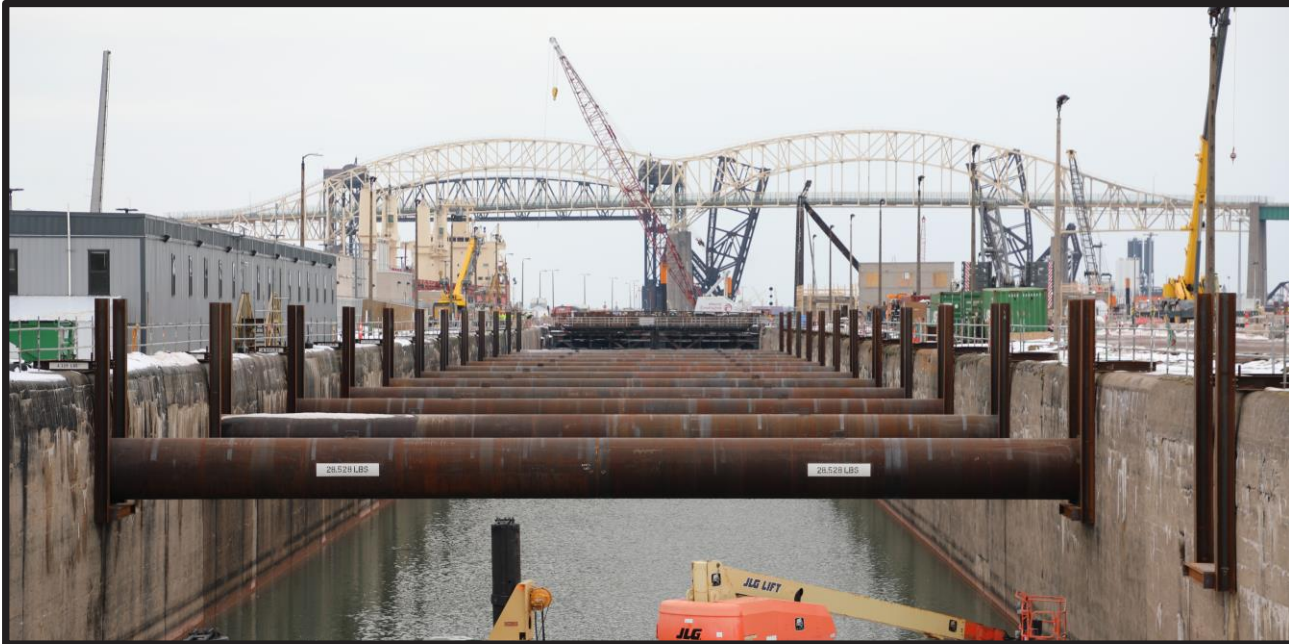
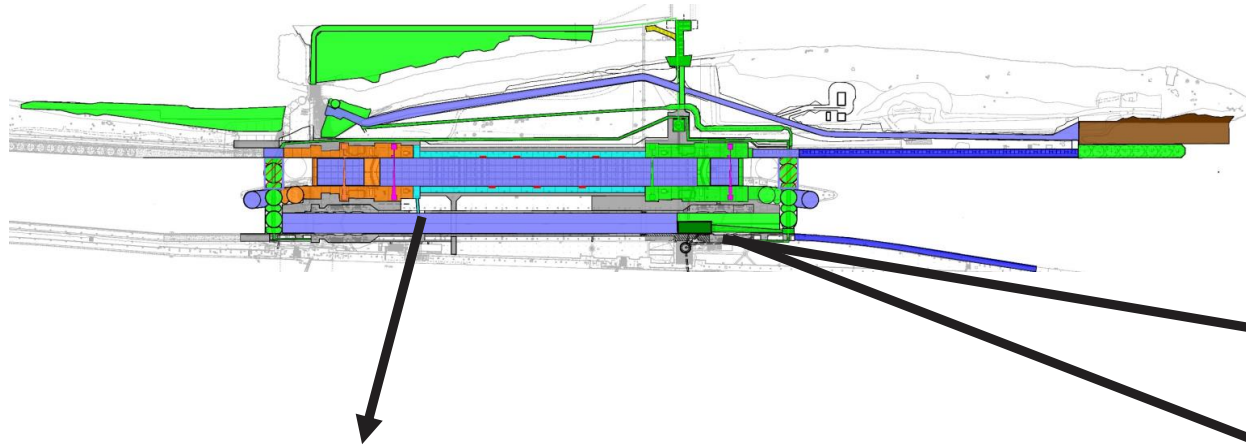
D/S  
← Cofferdam  
Cells



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# PHASE 3: NEW LOCK PROGRESS

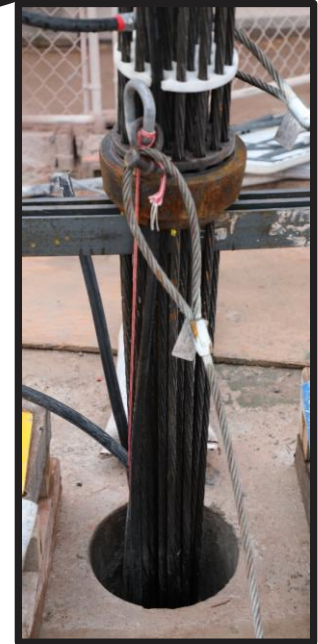
## MONOLITH STABILITY FEATURES OF WORK



Struts installed in Davis Lock



Rock anchor installation in Davis Lock monoliths

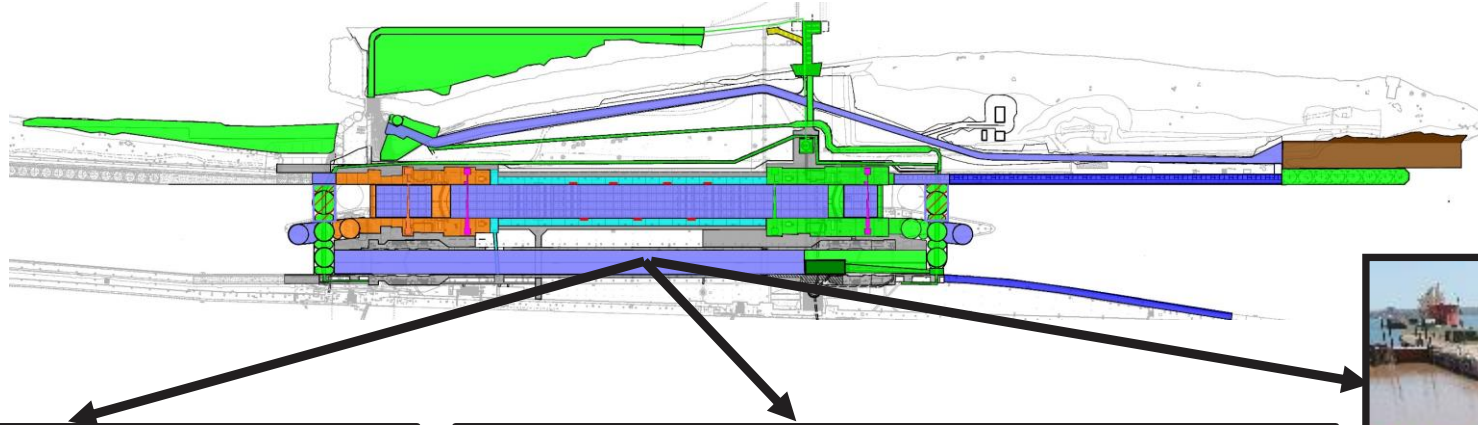


Rock anchor



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# PHASE 3: NEW LOCK DEWATERING OF CONSTRUCTION SITE



New Lock construction site dewatering pump initiation ceremony (15 May 2024)



Davis Lock chamber five days into dewatering process



Hydraulic pump used to dewater construction site on barge in Davis Lock



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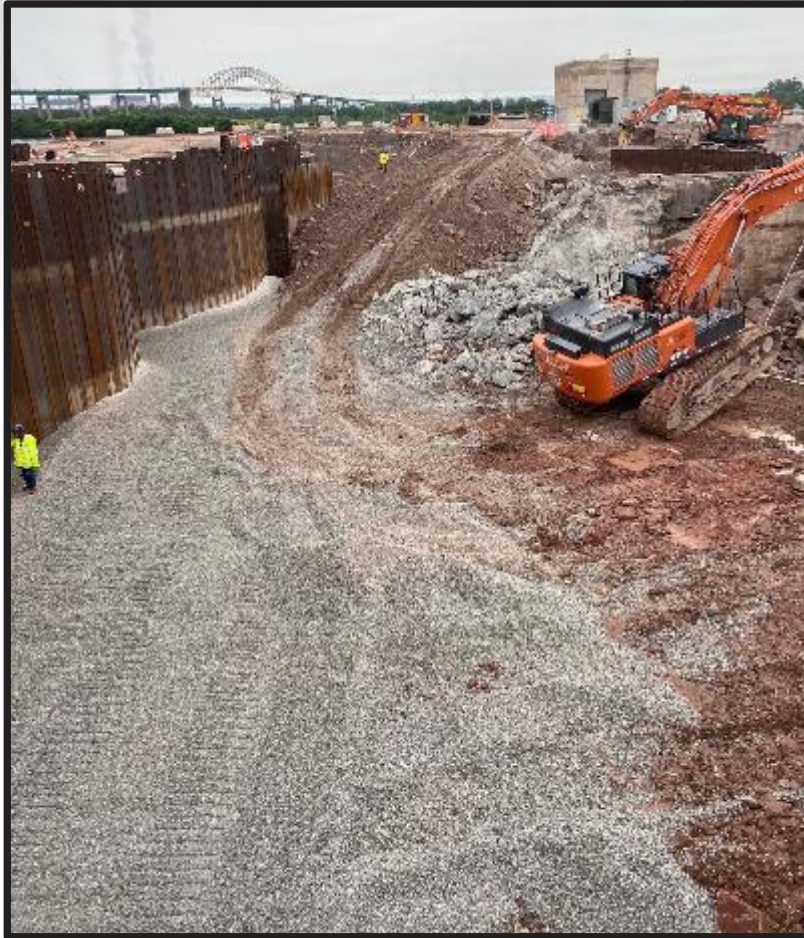
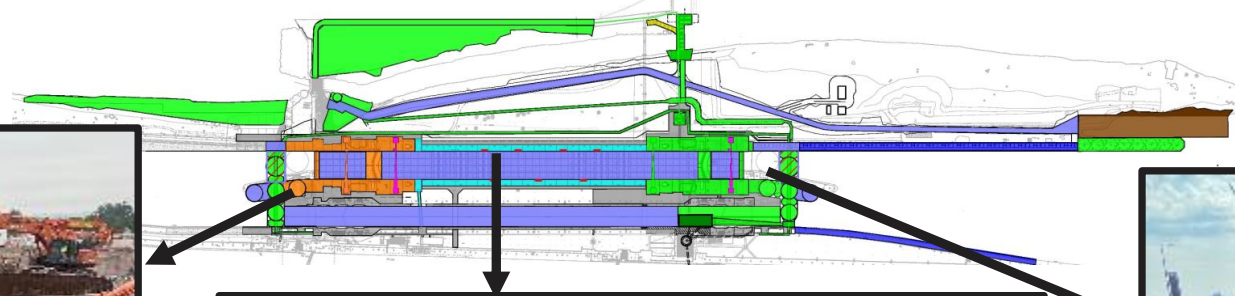




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# PHASE 3: NEW LOCK

## ESTABLISHING ACCESS TO SABIN AND DAVIS FLOORS



Ramp on East side of upstream cofferdam from the top of the lock wall to the lock floor



Ramp through North Sabin Lock wall to Sabin Lock floor

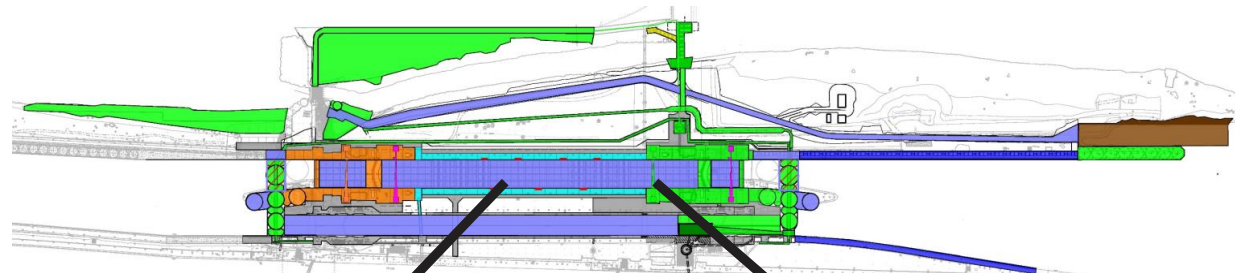


USACE inspection of the Downstream Cofferdam



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# PHASE 3: NEW LOCK DEMOLITION OF SABIN LOCK CHAMBER



Middle of the Sabin Lock Chamber



Downstream end the Sabin Lock Chamber

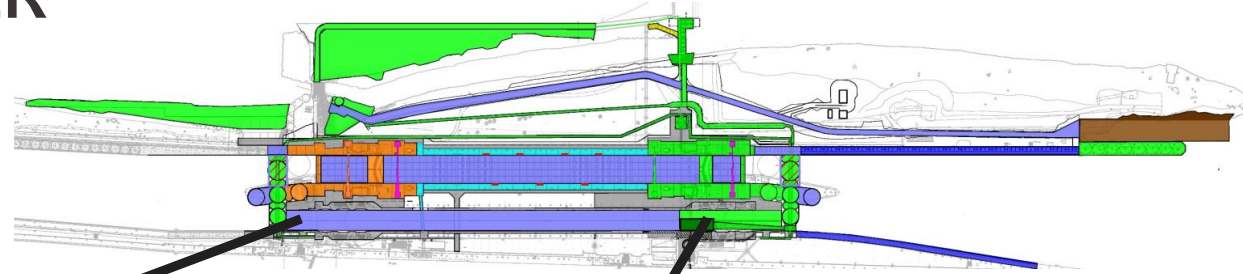




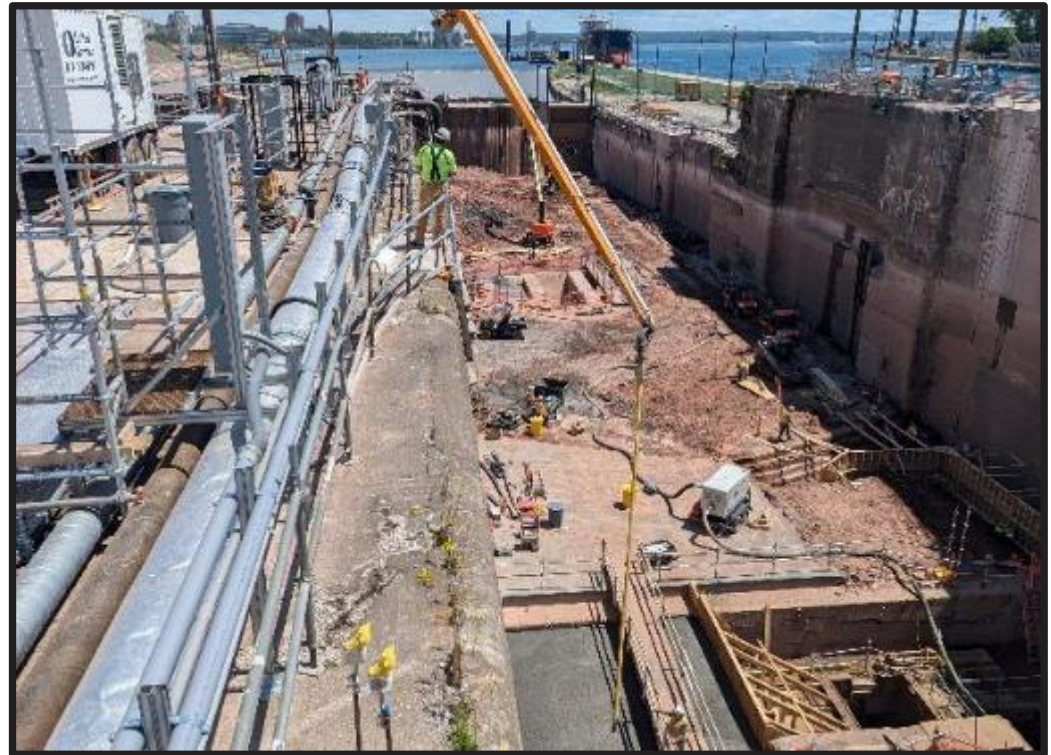
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# PHASE 3: NEW LOCK

## FILLING OF DAVIS LOCK CHAMBER



Placement of fill material in Davis Lock



Concrete placement to fill voids in floor of Davis Lock in support of the New Pump Well construction in the Davis Lock

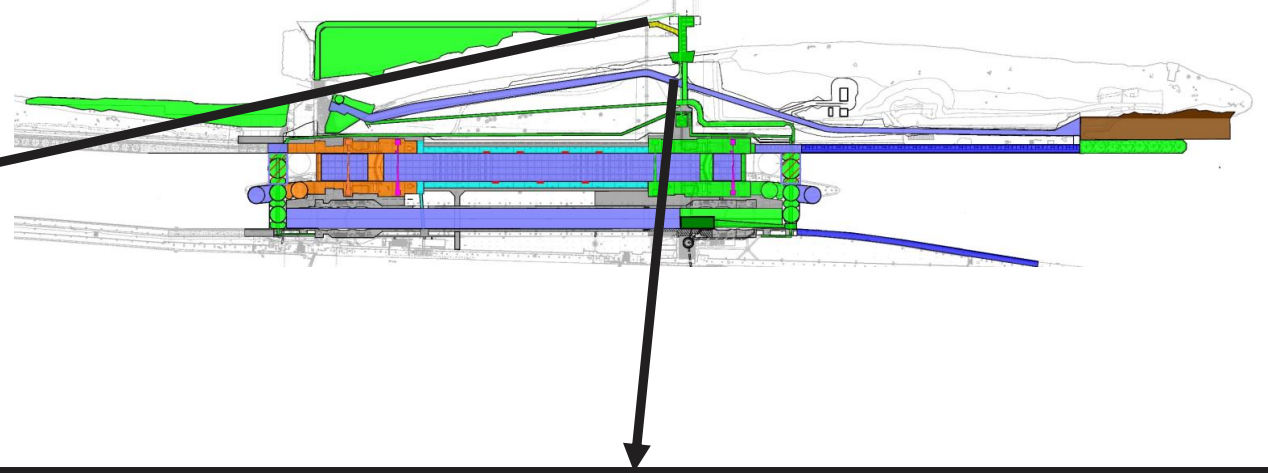


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# PHASE 3: NEW LOCK BRIDGE CONSTRUCTION



Connection of new bridge to landing at hydropower plant



New bridge to the hydropower plant

 **PHASE 3: NEW LOCK  
BEDROCK EXCAVATION**



**Trencor rock trencher to be used for bedrock excavation**



**Assembly of Wirtgen milling machine to be used for bedrock excavation**



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# PHASE 3: NEW LOCK MASS CONCRETE PLACEMENT

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**Concrete batch plant**



**Placement of concrete in mass concrete test section**



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# USACE DETROIT DISTRICT CHANGE OF COMMAND

## 16 JULY 2024

24



LTC Brett Boyle, PE, PMP  
Prior Commander, Detroit District



LTC Wallace Bandeff, PMP  
Commander, Detroit District





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# RECENT ENGAGEMENTS AND UPCOMING DATES

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## Recent Engagements and Dates of Importance:

- Chief of Operations transition from Marie Strum (ret) to Nick Zager, JAN 2024
- St. Lawrence Seaway visit, APR 2024
- Detroit SAME New Lock tour, MAY 2024
- First Lady Dr. Jill Biden and Second Gentleman Mr. Douglas Emhoff Soo Locks site visit, MAY 2024
- International Joint Commission Commissioners site visit, JUL 2024

## Upcoming Engagements and Dates of Importance:

- Senator Peters site visit, AUG 2024
- Phase 2 Contract Completion, Summer 2024

Michigan-based Science YouTuber Alexis Dahl Soo Locks and New Lock interviews (New Lock starts at about 14 minutes), video at: [https://www.youtube.com/watch?v=t2XprPx63\\_A](https://www.youtube.com/watch?v=t2XprPx63_A)



**First Lady Dr. Jill Biden and Second Gentleman Mr. Douglas Emhoff Soo Locks site visit, MAY 2024**



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# QUESTIONS

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