

# NEW LOCK AT THE SOO QUARTERLY UPDATE

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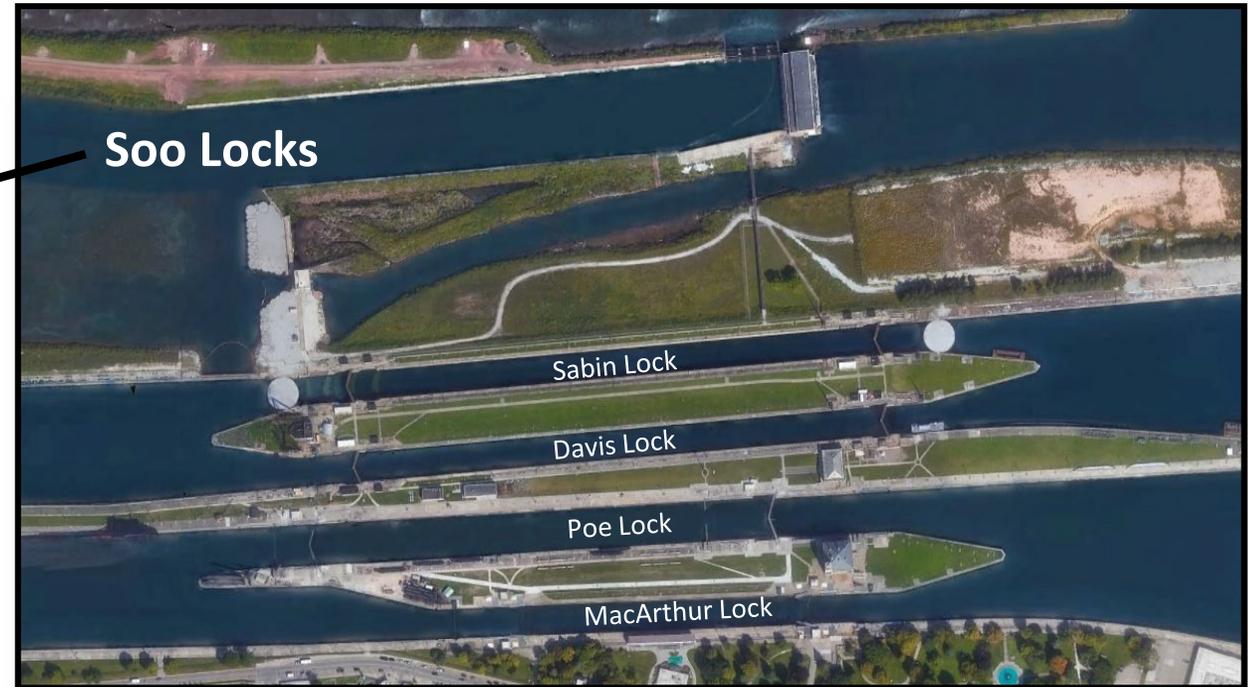
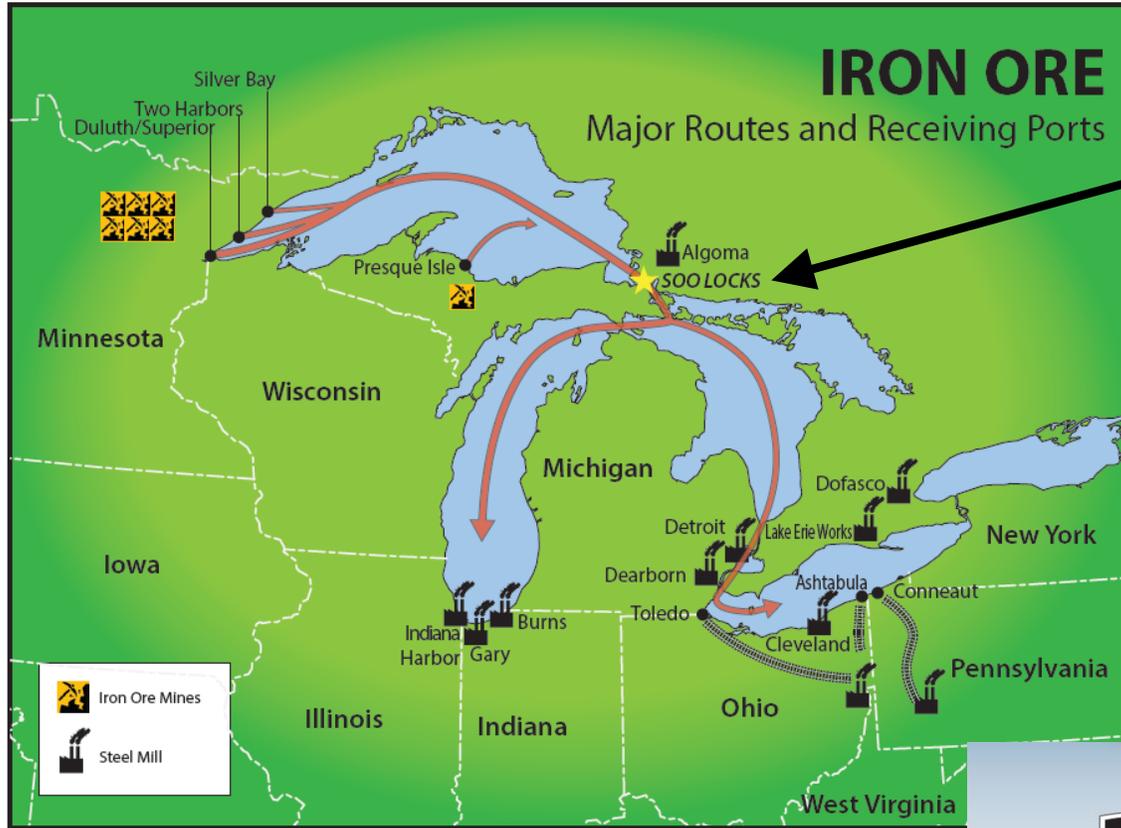


Lt. Col. Scott Katalenich  
District Engineer



Mr. Kevin McDaniels  
Deputy District Engineer

# SOO LOCKS LOCATION & IMPORTANCE





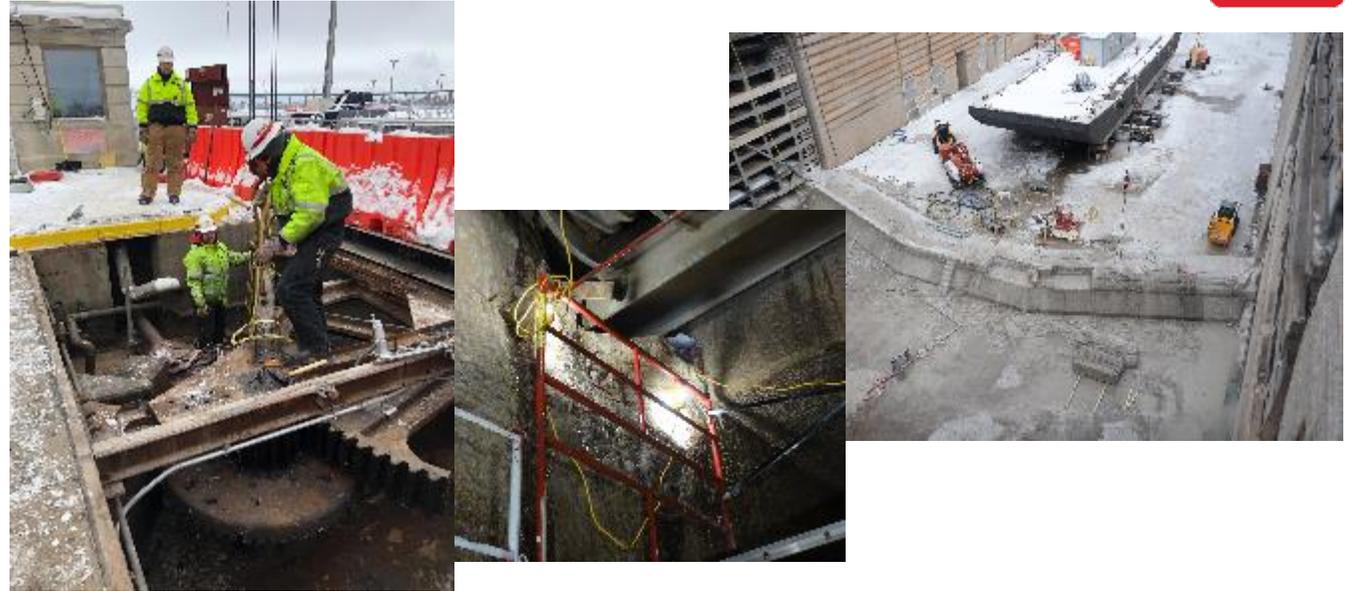
# MAINTAINING EXISTING SOO LOCKS FACILITY

(O&M FUNDED)



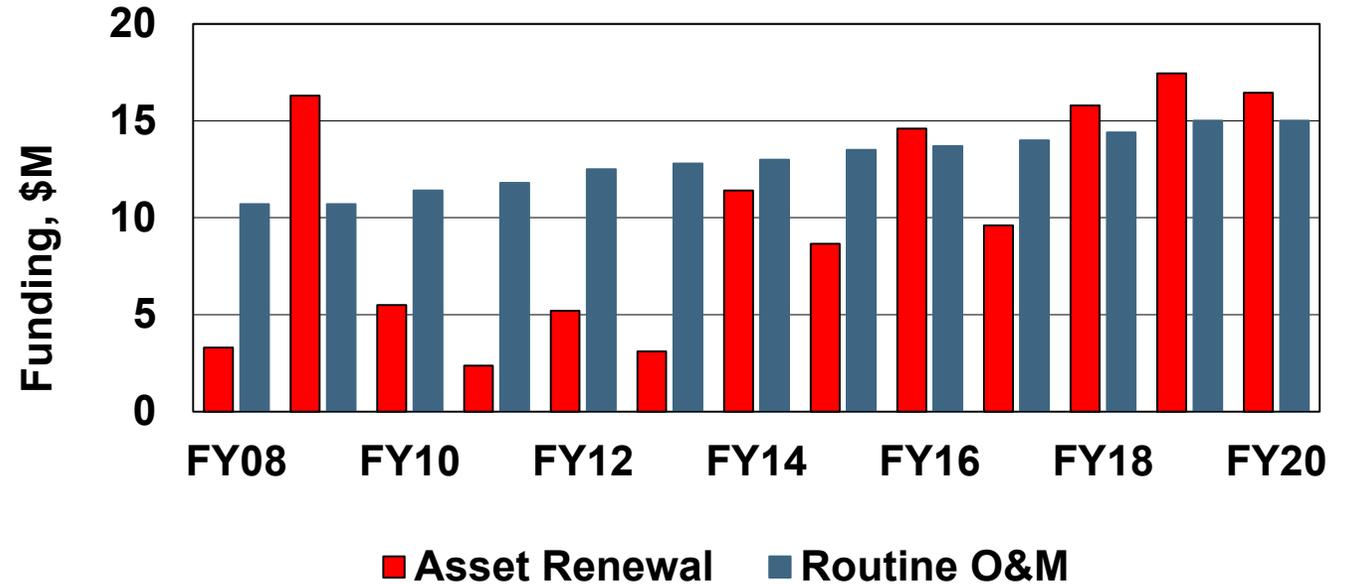
## FY21 Winter Work Maintenance

- Poe Gate 1 Structural Repairs
- Poe Gate 1 North Gate Connector
- Poe Gate 2 Sill Repair
- Poe Gate 3 Bottom Girder Seal Repair & Seal Replacement
- Poe F/E Valve Repairs & Maintenance
- Pier Fendering
- Barges and Tug dry dock



## Upcoming Asset Renewal Priorities

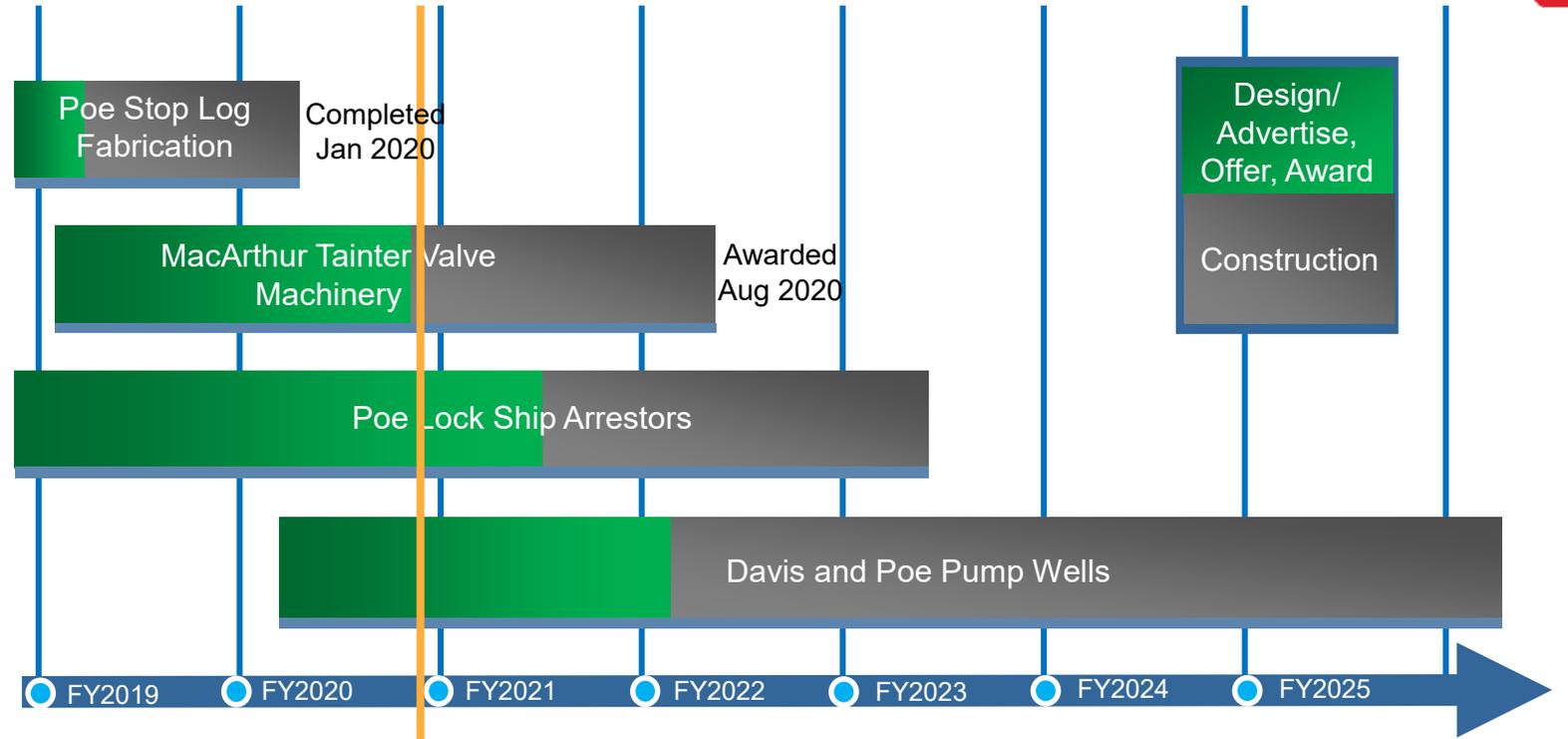
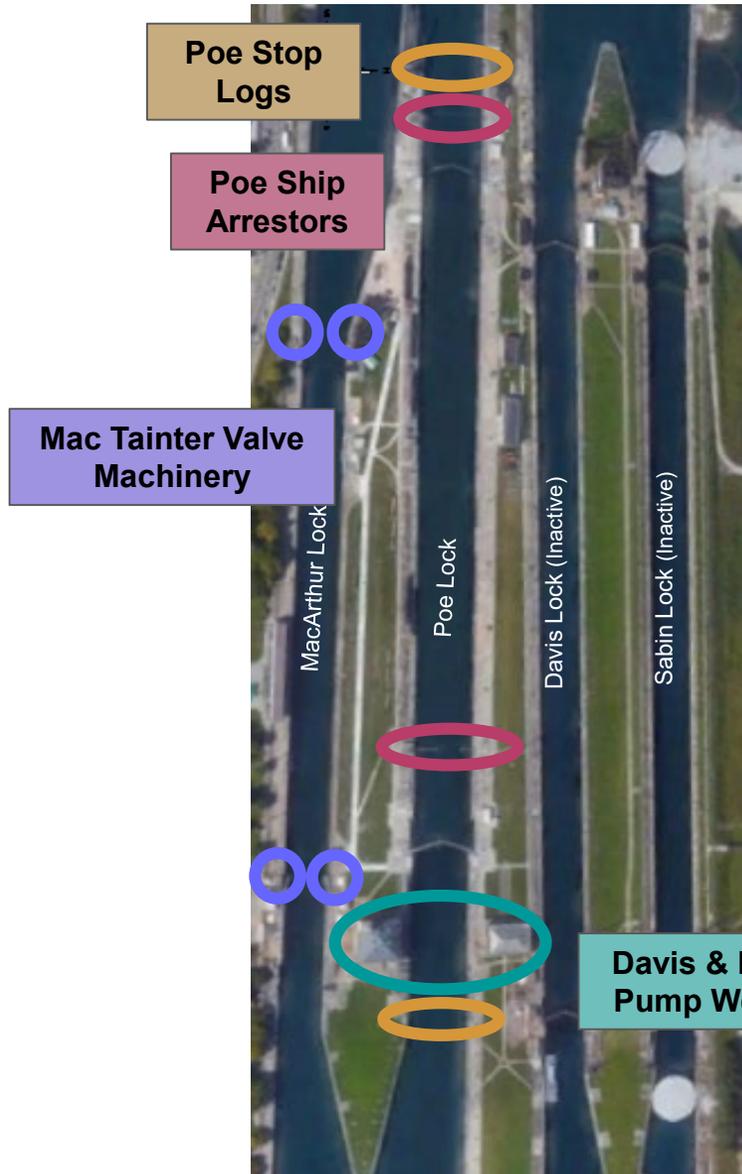
- Raceway for Lock Power Feeders
- Poe & MacArthur Locks Anchorage Components
- Poe Lock Gate 1 – blasting & coating, diagonal replacement
- Tug Replacement
- Poe Filling & Emptying Valves Rehabilitation
- Poe Gate 1 Replacement





# MAINTAINING EXISTING SOO LOCKS FACILITY

(CG FUNDED)



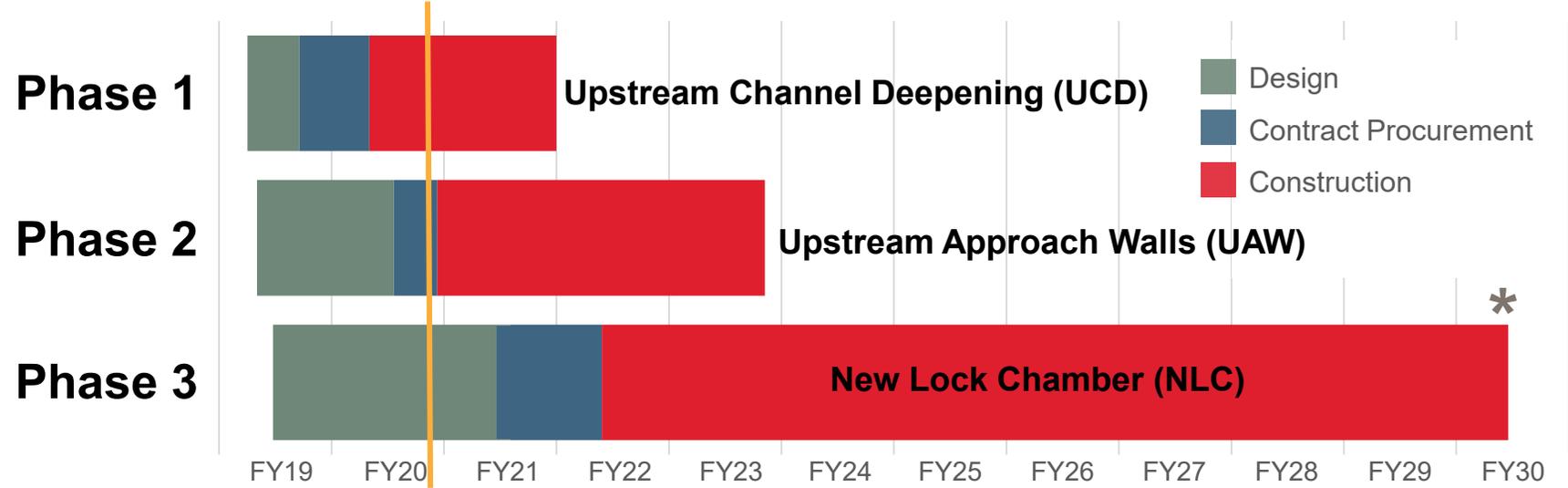
WE ARE HERE

## Davis and Poe Pumpwells (\$37.3M FY21 Capability)

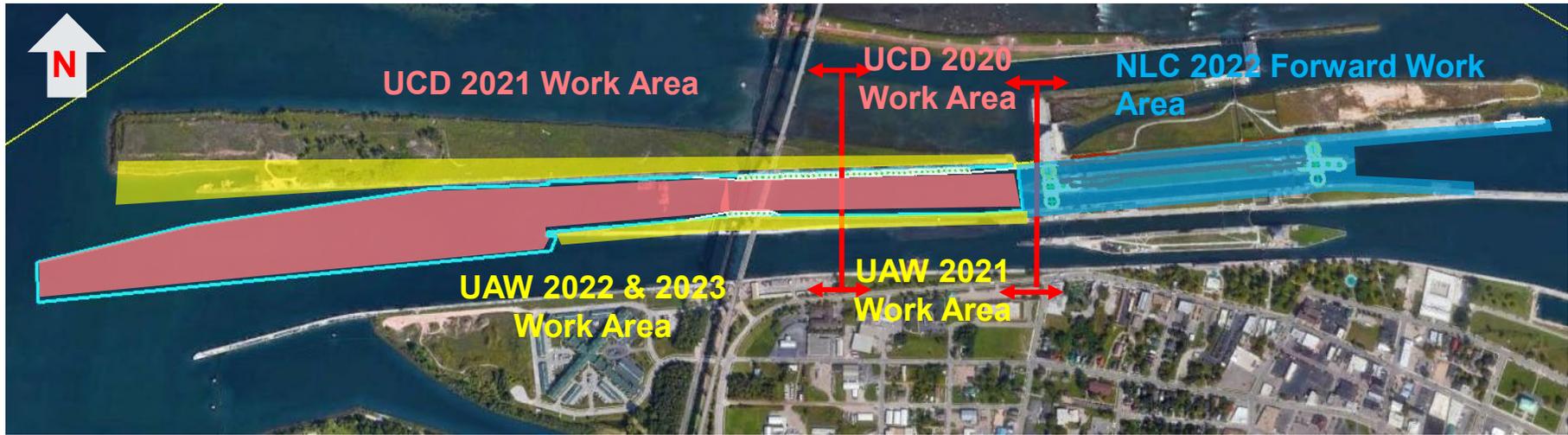
- The pumpwell system currently services the Poe and Mac lock and will service the New Lock once constructed.
- Design revealed unacceptable safety and construction risk in rehabilitating 100 - 120 year old wells under operational buildings.
- Due to comparable costs a new well is being constructed instead of rehabilitating existing wells.
- New Pump Well will be contracted with the New Lock to reduce risk associated with 2 contractors working in close proximity at the same time.



# NEW LOCK STATUS



\* Early completion could be realized with approval of continuing contracts clause, efficient funding, and favorable weather conditions





# CAPABILITIES AND ALLOCATIONS

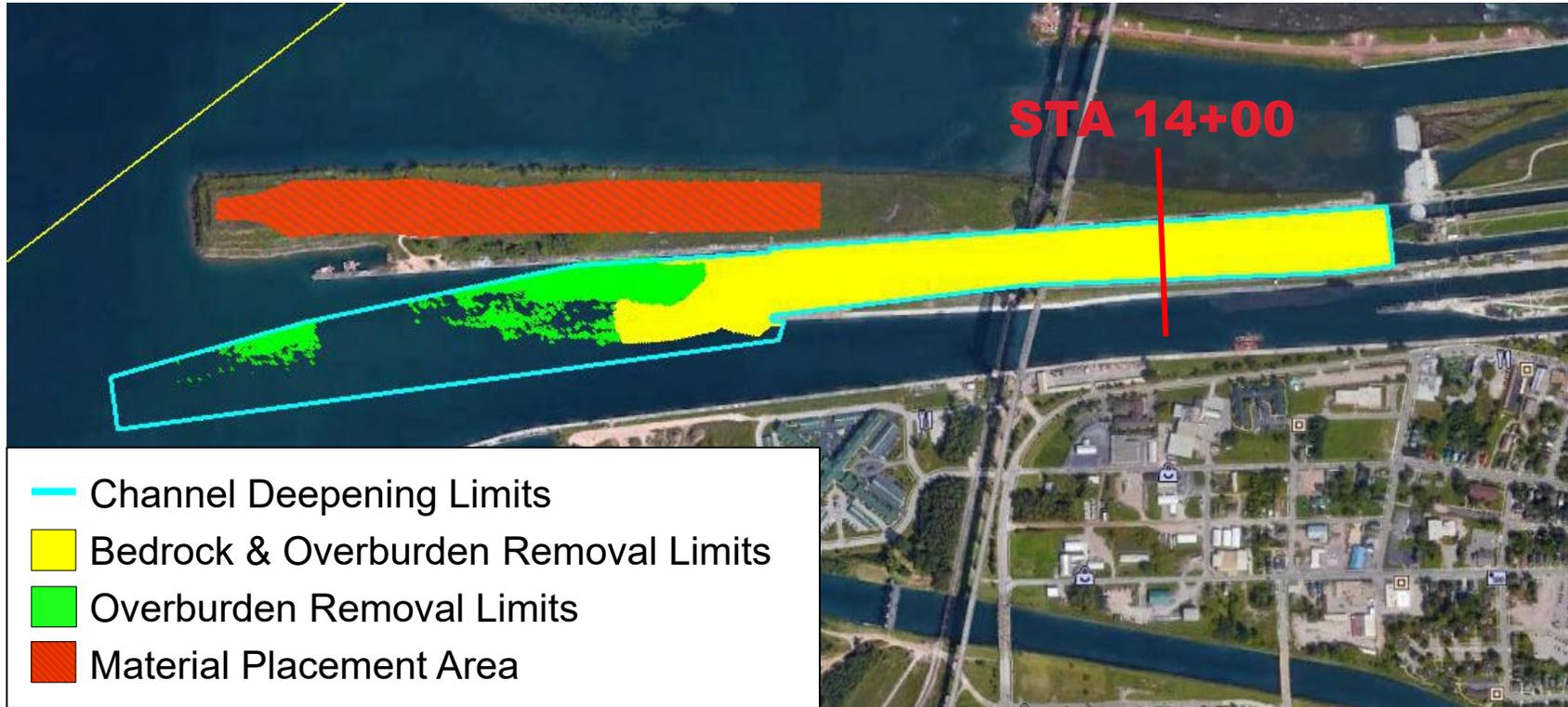


FY21 Work to be Completed	FY21 Capability	FY21 Pbud Request	FY21 Remaining Capability
New Lock Chamber Construction	\$152.3M+\$51.2M = \$203.5M	\$102.3M	<b>\$101.2M</b>
New Lock Chamber Design	\$8.6M	\$8.6M	
Upstream Channel Deepening Construction Management	\$2.2M	\$2.2M	
Upstream Approach Wall Construction & Construction Management	\$10.1M	\$10.1M	<b>TBD*</b>
<b>TOTAL</b>	<b>\$224.4M</b>	<b>\$123.2M</b>	<b>\$101.2M</b>

\* Additional UAW capability to be identified upon contract award in Sept 2020.



# PHASE 1: UPSTREAM CHANNEL DEEPENING



**Scope:** Deepen upstream approach channel to depth of 30 feet

## **Construction Status:**

- Construction awarded 30 January to Trade West Construction Co. of Mesquite, Nevada.
- Mobilization: 4 May 2020, Material removal: 4 June 2020
- Contractor currently removing overburden on west end of project and bedrock on east end.

**Estimated Performance Period:** 20 Months



# UPSTREAM CHANNEL DEEPENING STATUS UPDATE



Contractor installing temporary vibration monitoring



New Access Haul Road



# UPSTREAM CHANNEL DEEPENING STATUS UPDATE



**Xcentric Ripper**



**PC1250 with 6.5 CY Bucket**



# UPSTREAM CHANNEL DEEPENING STATUS UPDATE



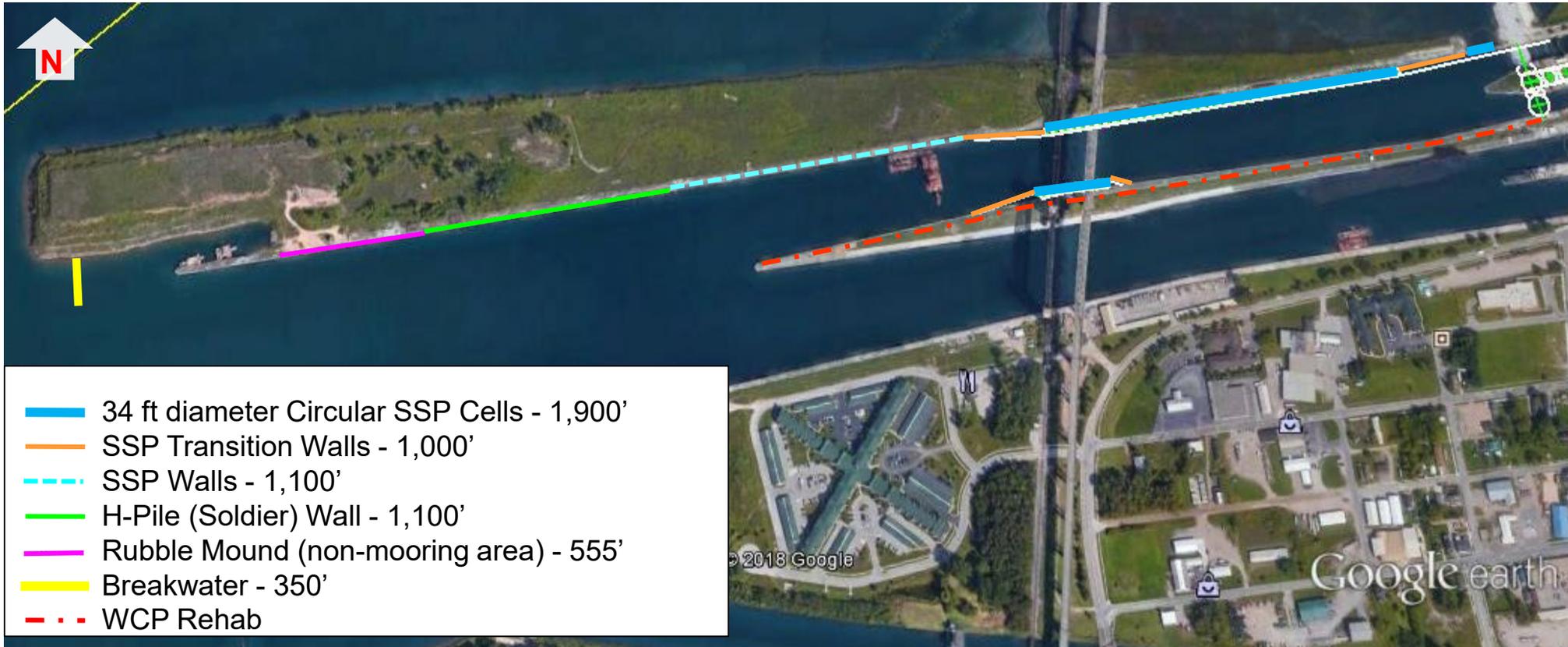
Bedrock from Upstream Approach Channel



Overburden from Upstream Approach Channel



# PHASE 2: UPSTREAM APPROACH WALLS



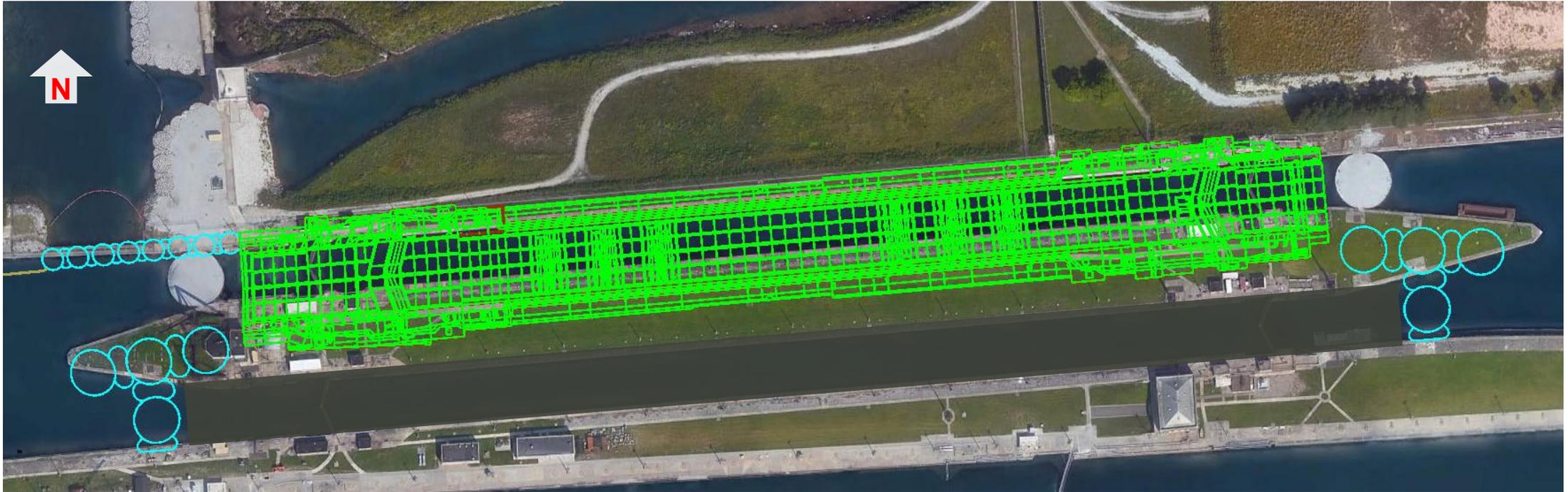
**Scope:** Rehabilitate approach walls upstream of New Soo Lock

**Project Status:**

- Contract award expected in next 30 days
- FY21 remaining capability may change upon contract award in September.

**Estimated Performance Period:** 24 - 36 Months

# PHASE 3: NEW LOCK CHAMBER



**Scope:** Construct new 1,200' long by 110' wide by 32' deep chamber and rehabilitate downstream approach walls

**Project Status:**

- 70% Design review completed in July 2020
- 100% Design to be complete in July 2021
- Construction Funding Capability Identified in FY21 (\$101.2M remaining FY21 capability)

**Estimated Performance Period:** 5-8 Years



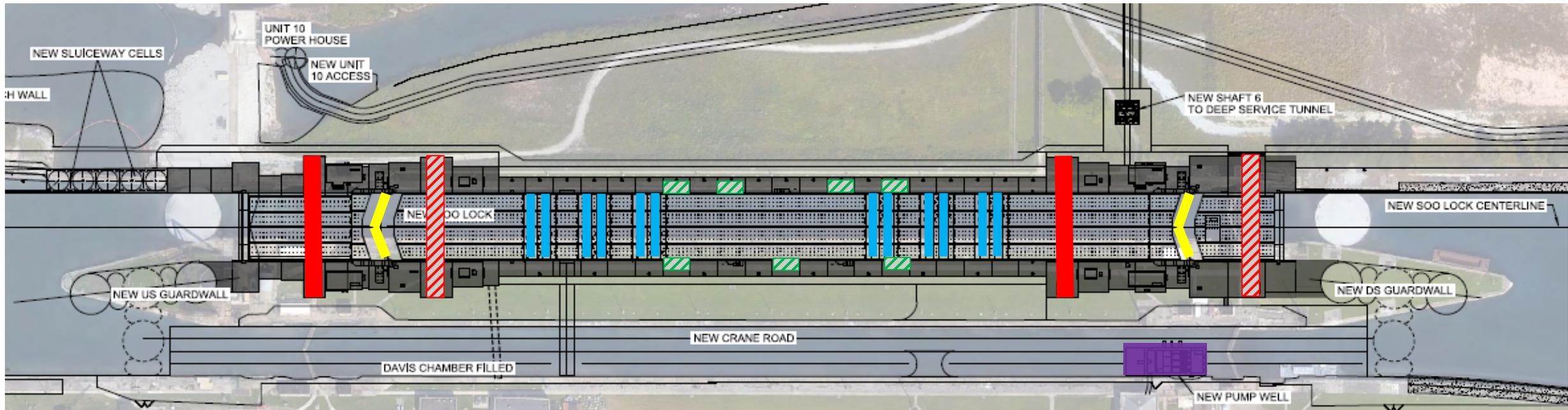
# NEW LOCK CHAMBER STAGGERED SOLICITATION APPROACH



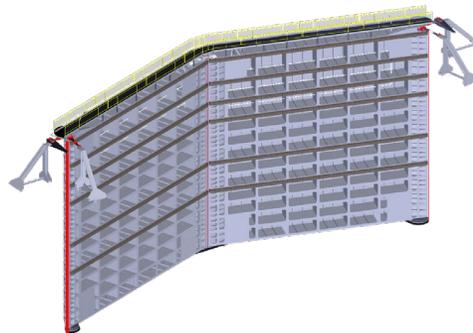
Jul 20	Aug 20	Sep 20	Oct 20	Nov 20	Dec 20	Jan 21	Feb 21	Mar 21	Apr 21	May 21	Jun 21	Jul 21	Aug 21	Sep 21	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22			
Development of 100% Draft Design																						
							Review of 100% Draft Design Thru 100% Final Design															
							Stagger 1 Solicitation															
													Stagger 2 Solicitation									

- Stagger 1 solicitation issued with less than final plans, stagger 2 solicitation issued with final plans
- Staggered RFP approach results in contract award 3 months ahead of traditional RFP approach
  - Target contract award moved from May 2022 to Feb 2022
- Staggered solicitation allows contractors more time with the package

# NEW LOCK CHAMBER KEY FEATURES



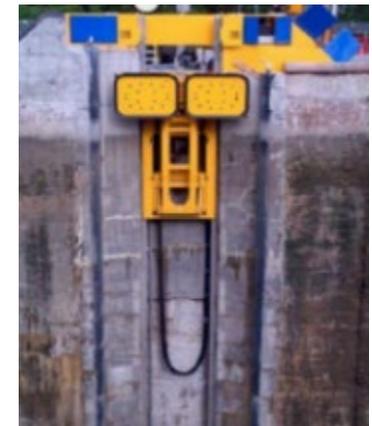
- Miter Gates
- Filling and Emptying System
- Upstream Ship Arrestors
- Downstream Ship Arrestors
- Hands Free Mooring
- New Pump Well



Miter Gates



Ship Arrestor



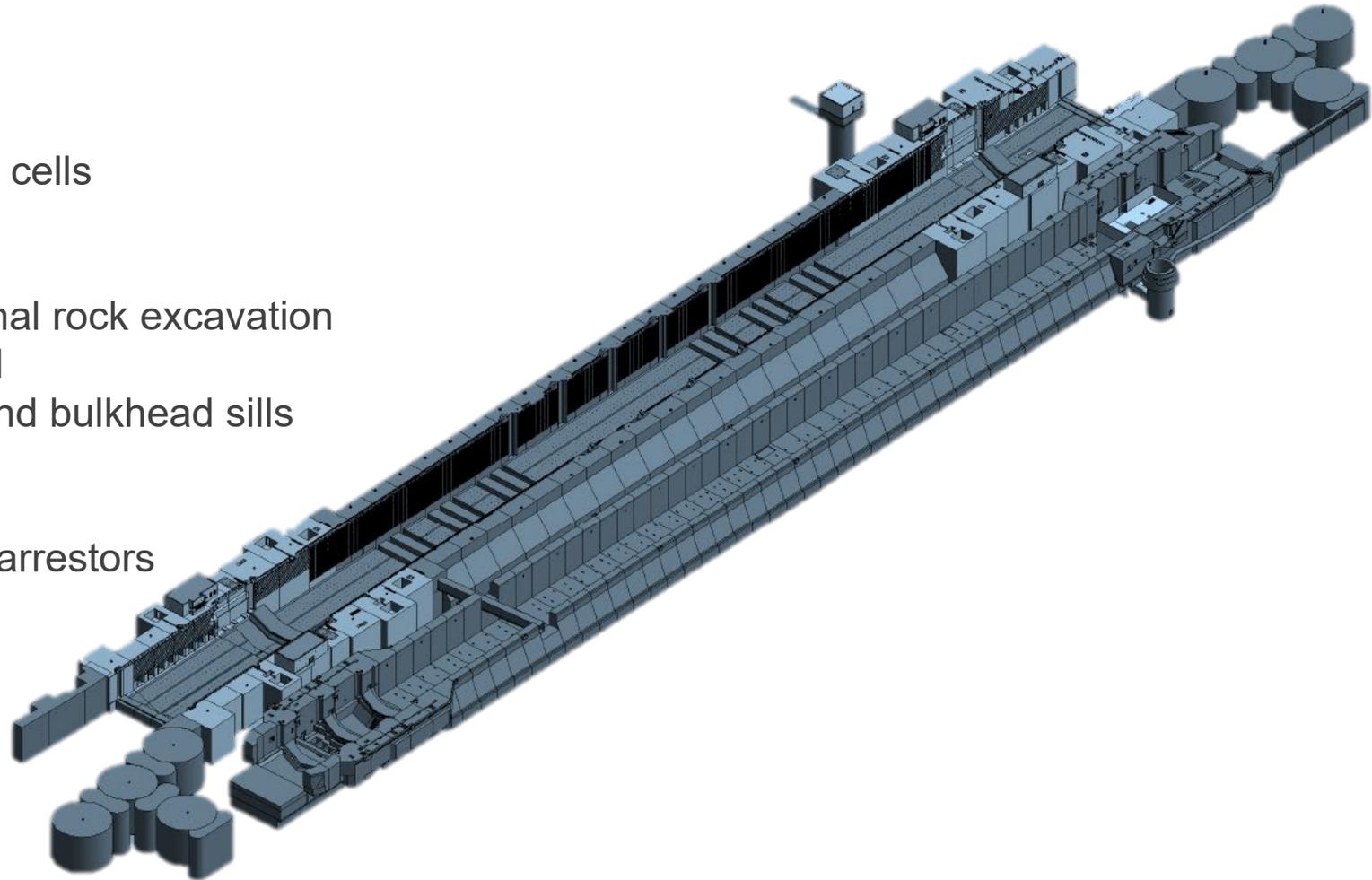
Hands Free Mooring Unit



# NEW LOCK CHAMBER CONSTRUCTION SEQUENCING



1. Mobilizing to site including constructing batch plant
2. Demolish Existing Davis and Sabin Lock buildings
3. Relocate Power from Unit 10 to NPP
4. Construct grout curtain
5. Construct New Bridge to NPP and Shaft 6
6. Demolish nose piers
7. Construct upstream and downstream coffer cells
8. Prepare Davis Lock for Dewatering
9. Dewater Sabin and Davis Locks
10. Demolish Sabin walls and floor and additional rock excavation
11. Fill Davis Chamber with Excavated Material
12. Construct wide wall monoliths, miter gate and bulkhead sills
13. Construct control houses
14. Construct chamber monoliths
15. Install miter gates, culvert valves, and ship arrestors
16. Install electrical and mechanical equipment
17. Remove cofferdam cells
18. Install downstream approach walls
19. Install HFM units
20. Install downstream ship arrestors
21. Complete site work



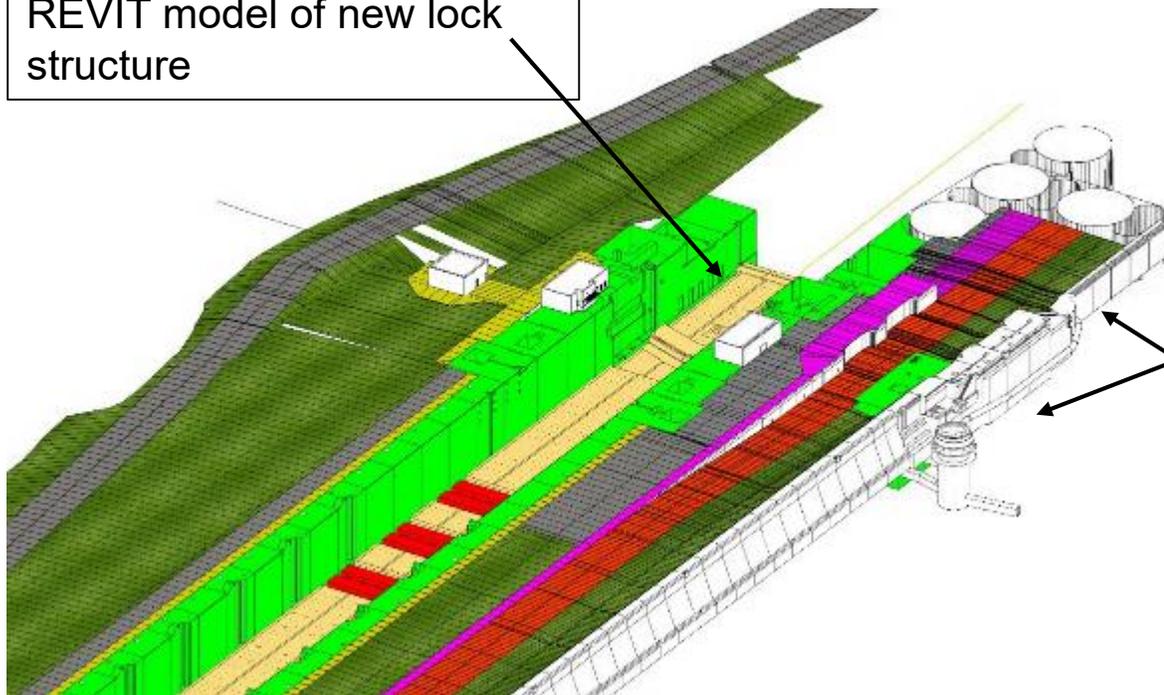


# NEW LOCK CHAMBER- TOOLS USED FOR DESIGN



REVIT model of new lock structure

Virtual reality used for 70% design review by Soo Locks Operations and Maintenance Personnel



REVIT model of existing lock structure

## Changes Made Based on Virtual Reality Review

- Operating shelter sightlines
- Additional lock floor catch basins
- Addition of miter gate tie back recesses



# VIRTUAL REALITY VIDEO



[New Lock Chamber 3D Model video](#)



# PROJECT'S ECONOMIC IMPACT



**\$1.03B** Total Project Cost

Estimated **7-10** years of construction

**1,240** jobs created on an annual basis

- 600 direct jobs
- 210 indirect jobs
- 430 induced jobs

**735,000** tons of domestically-quarried limestone or granite

**35,000** tons of American-made cement

**20,000** tons of American-made steel





# NEW LOCK UPCOMING DATES



- Upstream Approach Walls Contract Award: September 2020
- New Lock Chamber Construction Industry Webinar: 01 Oct 2020
- New Lock Chamber Construction Industry Site Visit: 06 Oct 2020
- New Lock Chamber Construction Industry Individual Meetings: 06-08 Oct 2020
- New Lock Chamber Construction Contract Advertisement: Spring 2021
- Upstream Channel Deepening Construction Completion: Fall 2021
- New Lock Chamber Construction Award: Spring 2022

## Contact Info:

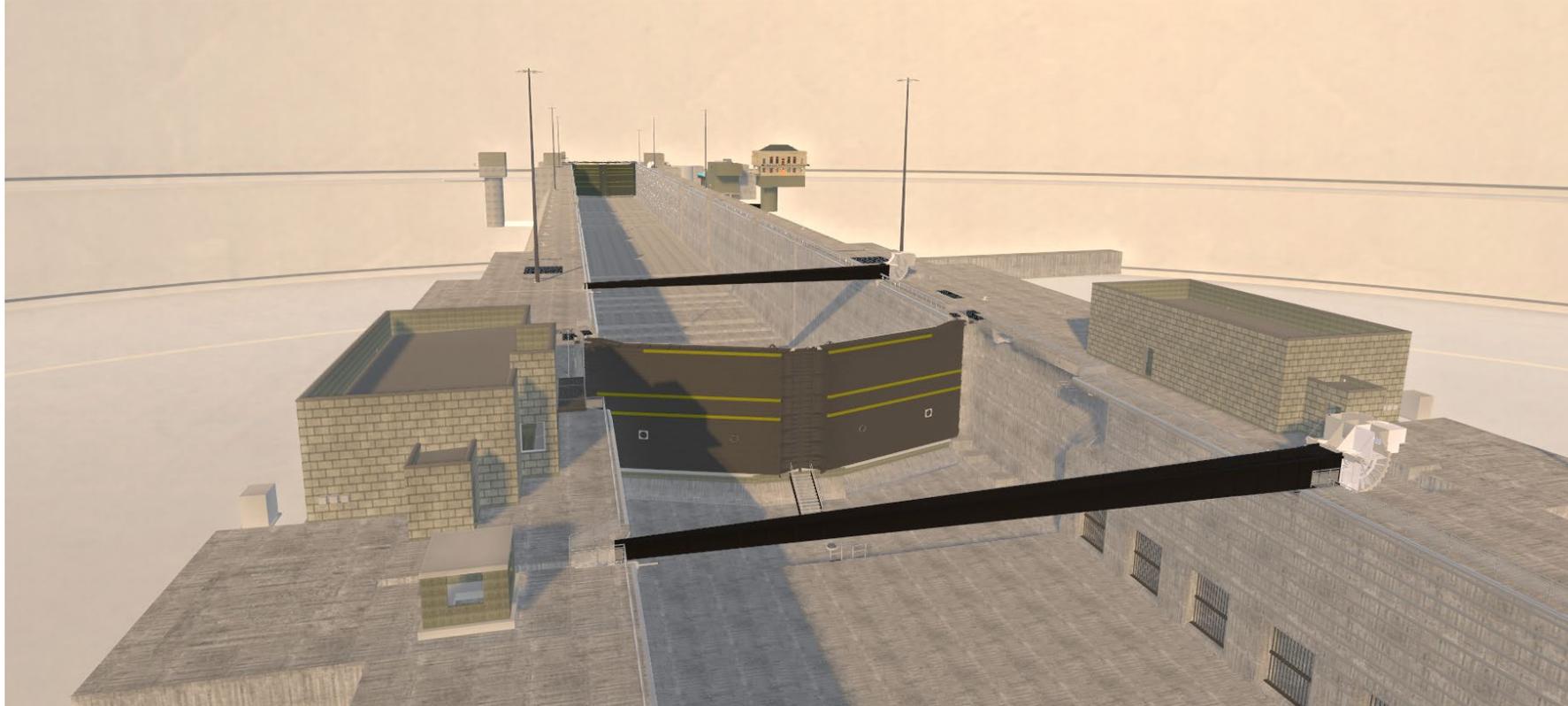
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# OPEN DISCUSSION



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