

# KENTUCKY LOCK ADDITION PROJECT UPDATE

## INLAND WATERWAYS USERS BOARD MEETING #97

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U.S. Army Corps of Engineers  
Nashville District  
16 August 2022



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# KENTUCKY LOCK OVERVIEW OF SCOPE



## **Authorization:**

- Water Resources Development Act (WRDA) of 1996 (P.L 104-303)
- Reauthorized in WRDA 2020 (P.L. 116-260)

## **Purpose/Description:**

Construction of a new 110' x 1200' lock addition at Kentucky Lock. The existing navigation lock is too small to meet current and future traffic demands without significant delays. Kentucky Lock's delays are among the highest in the country. In the last three years, the average delay for vessels transiting the lock has been over 10 hours. The addition of a new larger lock will essentially eliminate these delays well into the future.

## **Major Project Features:**

- Relocations (High Voltage Transmission Towers, Highway and Railroad Bridges)
- Upstream and Downstream Cofferdams
- 110' x 1200' Lock Chamber
- Approach Walls
- Maintenance and Operations Building
- Site Development



# KY LOCK ADDITION – COMPLETED CONTRACTS



Bridges Superstructures - \$104M  
Completed Jul 2014

Bridge Substructure - \$44M  
Completed Mar 2008

D/S Cofferdam - \$67.1M  
Completed Jul 2021

Site, Demo, & Utilities - \$4.6M  
Completed Mar 2019

Upstream Lock - \$110M  
Completed Feb 2017

U/S Miter Gate Fab. - \$5.6M  
Completed Dec 2016

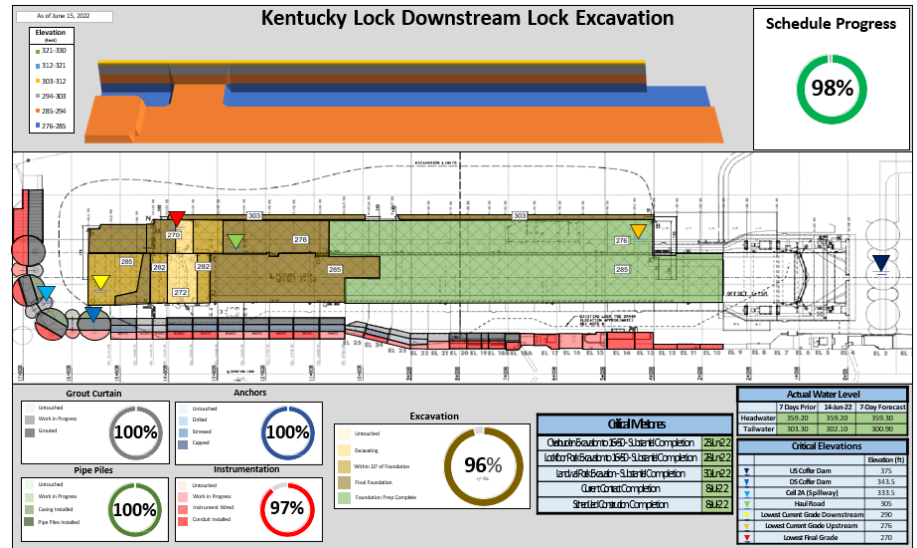
Upstream Cofferdam - \$17M  
Completed Nov 2006



# DOWNSTREAM LOCK EXCAVATION UPDATE



KYL DOWNSTREAM PIT VIEW JUNE 2022



## Scope:

- Install stability anchors, pipe piles, grout curtain, instrumentation
- Excavate soil and rock

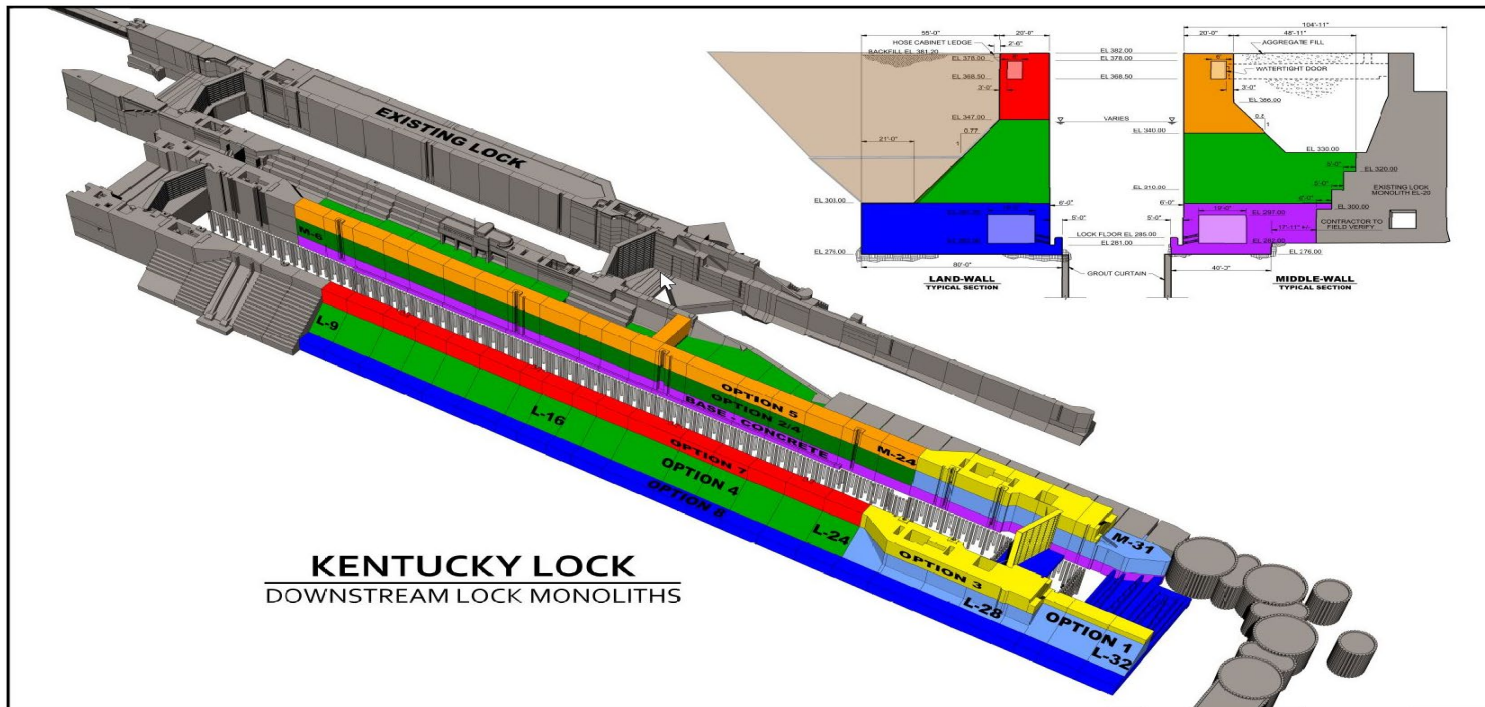
## Construction Status:

- \$54.8M Contract awarded 26 Sep 2018 to Heeter Geotechnical Construction
- Contractor has completed 98% of the required contract work.

**Estimated Completion:** September 2022



# DOWNSTREAM MONOLITHS CONTRACT SCOPE



## Scope:

Final Excavation, Concrete Monoliths, Downstream Miter Gates, Land Wall Backfill, Embedded Metals, Conduits and Grounding

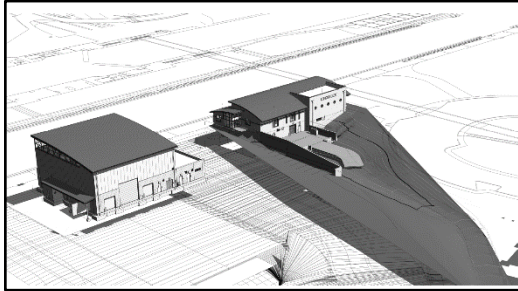
## Construction Status:

- \$380M Contract awarded 30 September 2021 to Thalle Construction
- Contractor was granted access to the PIT on 06 July 2022

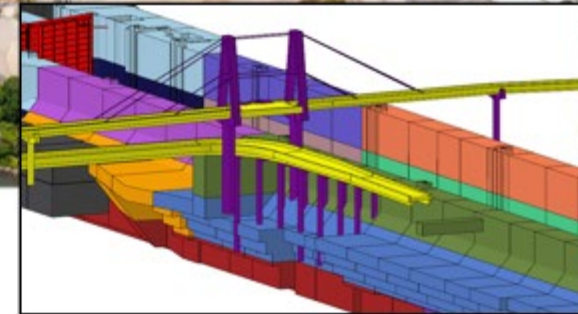
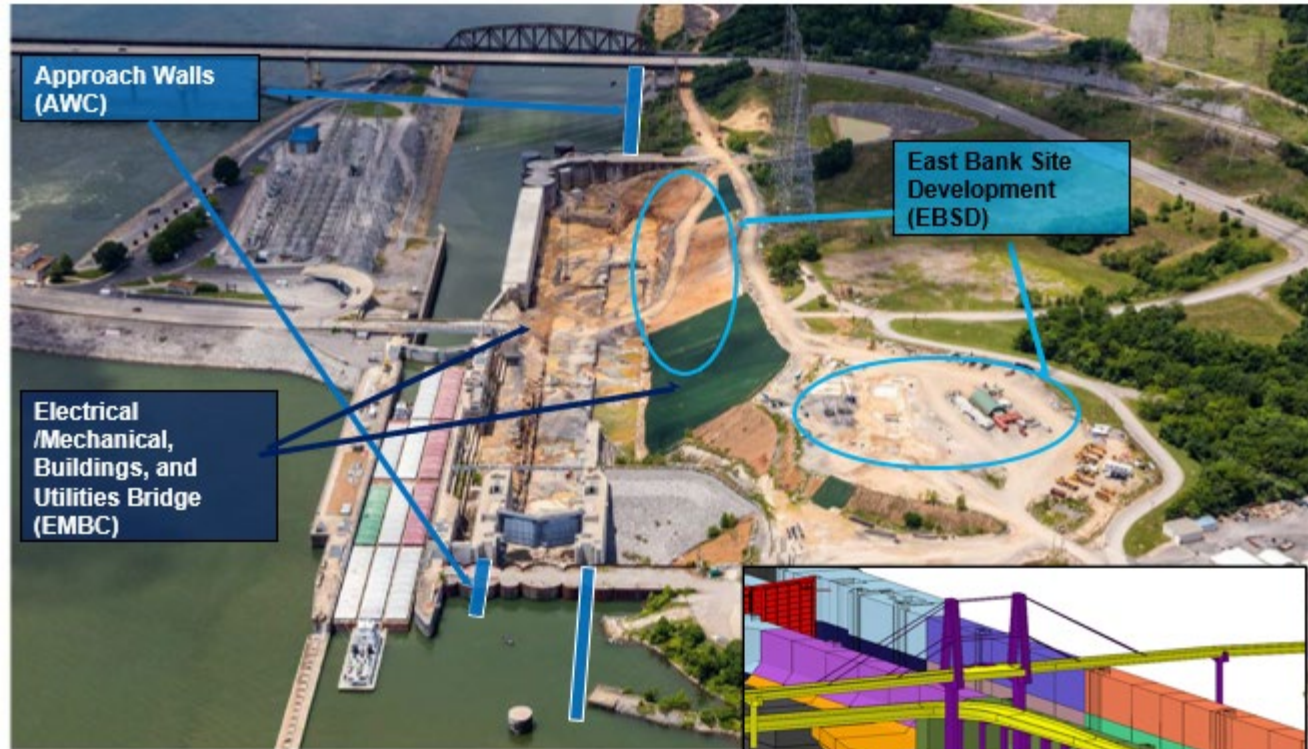
**Estimated Completion:** 16 May 2027



# REMAINING SCOPE: LOCK OPERATIONAL CONTRACT



Maintenance and Operations Buildings



Middle Wall Bridge, Pedestrian/Utility Bridge

## Scope:

- Approach Walls
- Electrical/Mechanical
- Buildings, Bridges, Utilities
- East Bank Site Development

**Construction Status:** Planned FY25 Award

**Estimated Completion:** Sep 2030



# Kentucky Lock Scope, Schedule, Cost Update



## Scope Includes:

### One Follow-on Contract that includes all remaining scope:

Approach Walls - Electrical/Mechanical, Buildings, Bridges, Utilities - East Bank Site Development

### Implement the following Value Engineering Proposals:

Seek Alternate Concrete Type in Downstream Approach Wall Contract

Expedite delivery of Floating Guide Wall elements

Use Temporary Utilities to expedite commissioning

Expedite Upstream Cofferdam demolition - protect Lock intake

**Earliest Possible Online Operational Date = July 2029**

**Project Completion Date (Baseline) = September 2030**

**(80% Confidence Level) Project Completion Date = March 2033**

**Cost Estimate = \$1,561,073,000**

**Section 902 Limit = \$1,630,303,000**

## Funding Requirements:

	FY 2025	FY 2026	FY 2027	FY 2028	Total
Amount	\$75M	\$168M	\$62M	\$26.7M	\$331.7M



# FUNDING / SCHEDULE - OVERVIEW



Total Project Cost Estimate = **\$1,561,073,000** (FY2022 Price Level)

	ARRA	CG	IWTF	IIJA	Total
Allocations through FY 2016:	\$88,833,626	\$211,381,288	\$171,660,987	NA	\$471,875,901
FY17 Allocation:	NA	\$18,000,000	\$18,000,000	NA	\$36,000,000
FY18 Allocation:	NA	\$20,600,000	\$20,600,000	NA	\$41,200,000
FY19 Allocation:	NA	\$21,800,000	\$21,800,000	NA	\$43,600,000
FY20 Allocation:	NA	\$30,530,000	\$30,530,000	NA	\$61,060,000
FY21 Allocation:	NA	\$71,565,000	\$38,535,000	NA	\$110,100,000
FY22 Allocation (IIJA):	NA	\$0	\$0	\$465,492,000	\$465,492,000
<b>Total Allocations to Date:</b>	<b>\$88,833,626</b>	<b>\$373,876,288</b>	<b>\$301,125,987</b>	<b>\$465,492,000</b>	<b>\$1,229,327,901</b>
<b>Remaining TPC Balance:</b>					<b>\$332,000,000</b>

Contracts	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031					
	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4					
HWY/RR Superstructures		Construction																														
Upstream Lock Monoliths							Construction																									
Upstream Miter Gate Fabrication									Construction																							
Downstream Cofferdam (DSCD)													Construction																			
Downstream Lock Excavation (DSLE)																Construction																
Downstream Lock Monoliths (DSLML)																		Construction														
Operational Contract (COA3)																						Acq	Construction									





# KENTUCKY LOCK ADDITION CRITICAL RISK ITEMS



## MAJOR RISKS:

1. Increased costs and availability issues associated with Construction Labor and Supply Markets required to complete remaining scope.
2. Geologic conditions in Lock Foundations - Countermeasures: Providing for Early Pit Access to DS Monoliths Contractor and effective management of the Joint Risk Register
3. Tailwater Fluctuations - Countermeasures: Active schedule and risk management.



# THANK YOU



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