

## Kentucky Lock Project Update Inland Waterways Users Board Meeting No. 92

**Mr. Don Getty**  
**Project Manager**  
**Nashville District**  
**Great Lakes and Ohio River Division**  
**12 September 2019**



"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."

**BUILDING STRONG®**  
and Taking Care of People!



## Kentucky Lock Addition Bottom Line Up Front

- **Downstream Cofferdam Construction**
  - High water has extended contract completion date 8 months but project schedule impacts have been mitigated
- **Downstream Lock Excavation contract is on schedule and all options have been exercised**
- **Economic Update and Post Authorization Change Report have been delayed but all known significant hurdles have been crossed.**

**BUILDING STRONG®**  
and Taking Care of People!



# Kentucky Lock Project Overview

Bridges Superstructures - \$104M  
Completed Jul 2014

D/S Lock Excavation - \$54.8M  
Award – Sept. 2018

Bridges Substructures - \$44M  
Completed Mar 2006

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

D/S Cofferdam - \$67.1M  
Award - Sept. 2016

Upstream Cofferdam - \$17M  
Completed Nov 2006

D/S Lock Monoliths  
Award – Sept. 2020

Approach Walls  
Award – Sept. 2021

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

## Contract Legend

Completed

Current

Future

Upstream Lock - \$110M  
Completed Feb 2017

Lock & Associated Facilities	\$1,006M
TVA Transmission Towers	13M
P & L Railroad	97M
Hwy 62 and other roadways	100M
<b>Total</b>	<b>\$1,216M</b>

\$534.1M Obl thru Sep 2018 = 40% complete

3

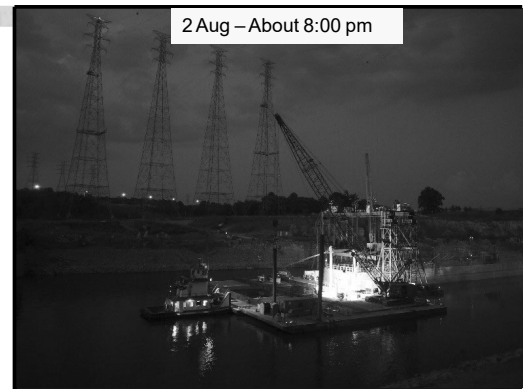


8 July – Setting 6<sup>th</sup> Shell

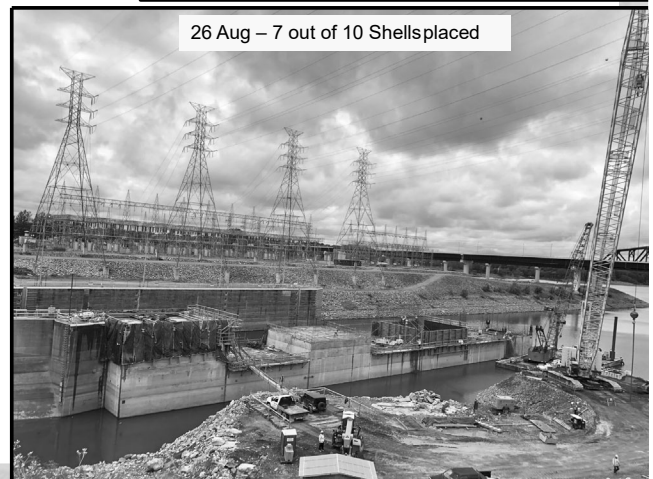


2 Aug – Setting 7<sup>th</sup> Shell

## Downstream Cofferdam Construction



2 Aug – About 8:00 pm



26 Aug – 7 out of 10 Shells placed

2 Aug 2019 – Safe Spanat DS Bridges



## Downstream Lock Excavation Construction



2Aug 2019 – Underneath bridges on Safe Span

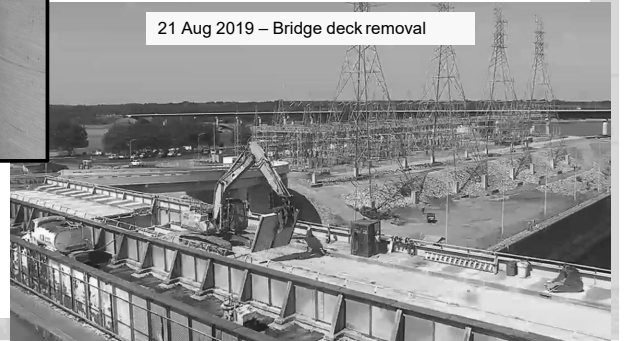
2 Aug 2019 – New Maint Bldg



2 Aug 2019 – Strand Anchor



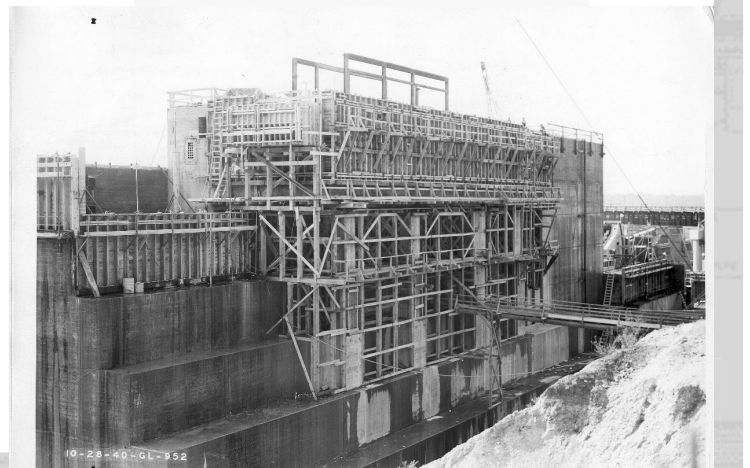
21 Aug 2019 – Bridge deck removal



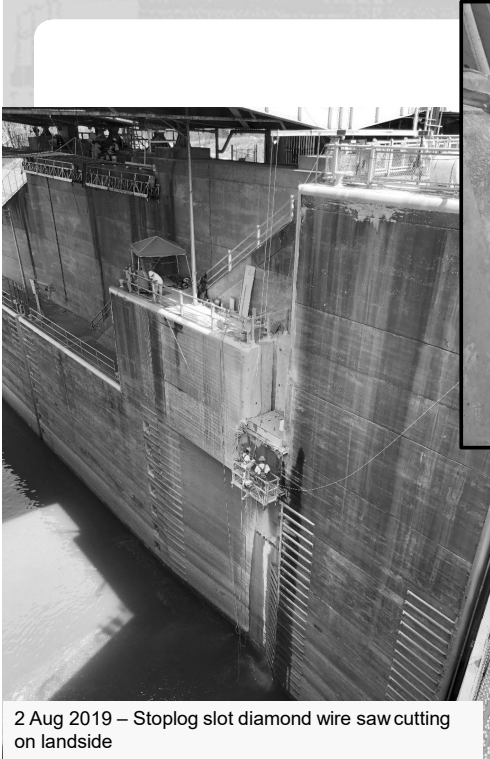
26 Aug 2019 – Excavation  
under Operations Building

## Downstream Lock Excavation Construction

Oct 1940 – Operations Building under construction



**BUILDING STRONG®**  
*and Taking Care of People!*

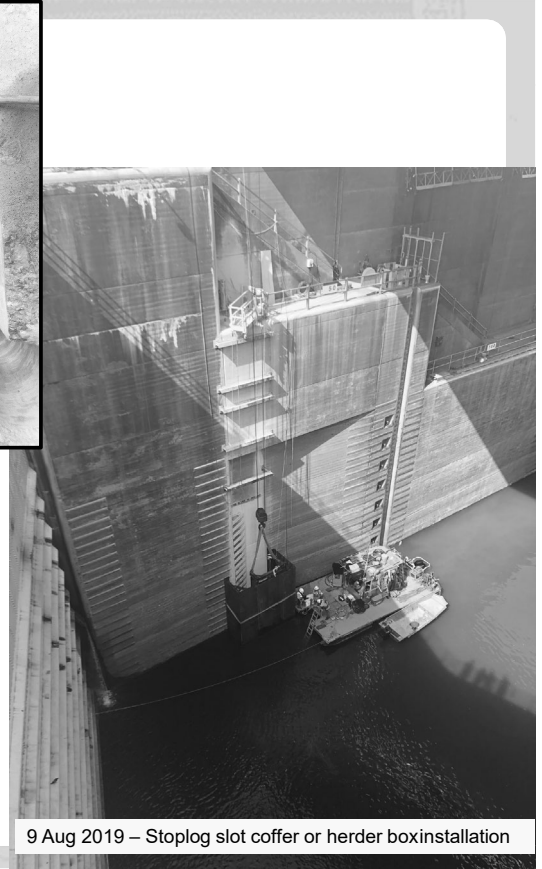


2 Aug 2019 – Looking down at slot cutting on landside

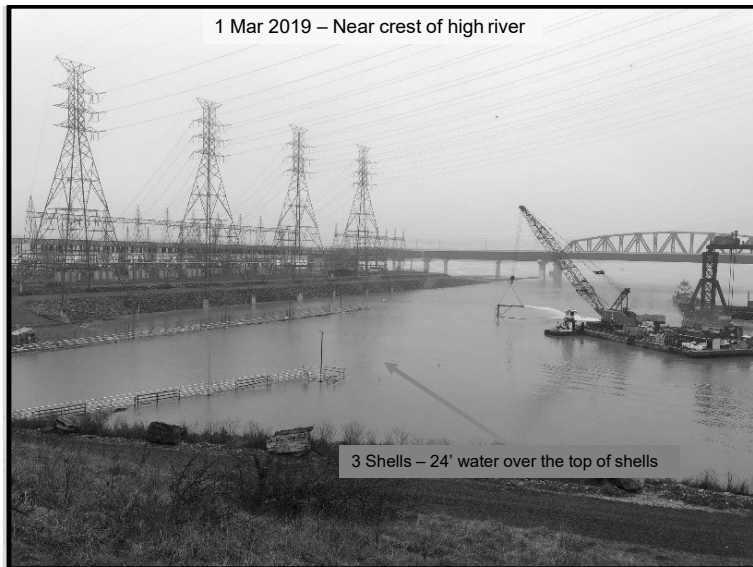
## Downstream Lock Excavation Construction

2 Aug 2019 – Stoplog slot diamond wire saw cutting on landside

**BUILDING STRONG®**  
and Taking Care of People!



9 Aug 2019 – Stoplog slot coffer or herder box installation



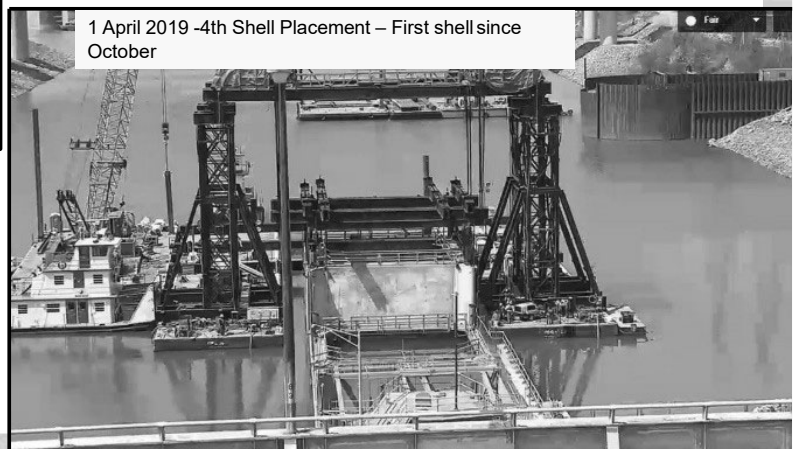
1 Mar 2019 – Near crest of high river

3 Shells – 24' water over the top of shells

## High Water Impacts to Downstream Cofferdam Construction

8 Months Delay  
due solely to  
High Water

**BUILDING STRONG®**  
and Taking Care of People!



1 April 2019 -4th Shell Placement – First shell since October



Downstream Lock Excavation

Work Area based original contract dates

Work Area after 15 May 2020 for Options 8, 9 & 10 (Not available now until mid-Aug 2020)

Initial Work Area

BUILDING

Army Corps  
Engineers



Downstream Lock Excavation

Negotiated No-Cost Phased Work Area

Will require construction of upstream land access berm

Does not change DS Lock Excavation contract completion date

Four Phase Work Area

Phase 4 – 8/10/2020

Phase 3 – 6/1/2020

Phase 2 – 3/7/2020

Phase 1 – 8/30/2019

Initial Work Area

BUILDING

Army Corps  
Engineers



## Kentucky Lock Project Time and Cost Scorecard

### Expenditures

30 June

Planned (BCWS)	\$533.1M
Earned (BCWP)	\$507.4M
Actual (ACWP)	\$495.0M

**BCWP:** Reports the value (based on % complete) of the work performed to date.

**Target:**

Actual as compared to Planned: (<1% = Green) (>1% and <3% = Yellow) and (>3% = Red)

### Schedule

30 June

(Baseline)/(Current)

Project Complete	May 2028 / Sep 2024
Lock Operational	May 2028 / Sep 2024

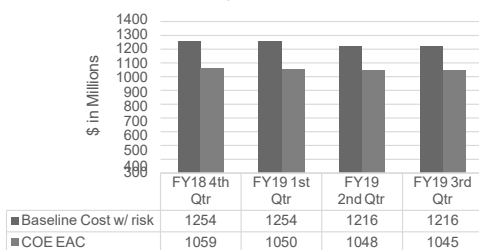
**Measures:** Planned project completion and Lock operational dates

**Target:**

PACR Anticipated in FY19.

### Budget

KY Lock Project EAC Trend



### Major Activity Schedule

Activity	Baseline	Current
Set 10 <sup>th</sup> Cofferdam Shell	Dec 2019	Dec 2019
Award Downstream Lock Monoliths Contract	Sep 2020	Sep 2020
Economic Update/PACR to HQ	Feb 2018	Sep 2019

11



## Kentucky Lock Project

12

Major Project Activity	Start/Award	Complete <sup>2</sup>
Upstream Lock Monoliths Construction Contract	Jan 2010	Feb 2017
Downstream Cofferdam Construction Contract	Sep 2016	Aug 2020
Site, Demolition & Utilities Construction Contract	Jan 2018(A)	Mar 2019(A)
Downstream Lock Excavation Construction Contract	Sep 2018(A)	Nov 2021
Downstream Lock Monoliths Construction Contract	Sep 2020	Sep 2024
Approach Walls Construction Contract	Sep 2021	Nov 2023
Total Project Cost Estimate (2 year cycle)	Sep 2018	Feb 2019(A)
Economic Update/PostAuthorization Change Report for 902 Exceedance <sup>1</sup>	Jul 2017	Jan 2020

Note: Red indicates revised date from previously reported

<sup>1</sup>902 Exceedance expected as early as FY2022

<sup>2</sup> Assumes no risk. 80% confidence schedule adds 46 months to project completion date.

## Kentucky Lock Summary and Challenges

- Project schedule impacts due to high river levels have been mitigated to date but project will be vulnerable to above average high water for the next year.
- Downstream Cofferdam construction is a high risk contract due to constricted marine area and geology.
- Progress on Downstream Cofferdam has reached a point where it is reducing lockage efficiency until its completion.
- Recent years average delays at KY Lock >10 hours and traffic levels remain robust. This should bode well for benefits in ongoing Economic Update.
- Efficient Funding Profile:

FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Total
\$66.1M	\$164.5M	\$159.4M	\$170.5M	\$66.4M	\$626.9M

**BUILDING STRONG<sup>®</sup>**  
*and Taking Care of People!*

