

LRD IWTF Projects Update Inland Waterways Users Board

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Kentucky Lock Addition BLUF

■ Bottom Line Up Front

- ▶ Existing construction is on schedule.
- ▶ Critical Path Construction has resumed with the September award of Downstream Cofferdam.
- ▶ New Risk-Based Total Project Cost Estimate by End of December 2016:
 - Cost Estimate will increase
 - Current BCR of 1.7 at 7% will likely decrease upon completion of Economic Update, just now getting underway.

Kentucky Lock Project Overview

Bridges Superstructures - \$104M
Completed Jul 2014

Bridges Substructures - \$44M
Completed Mar 2006

D/S Excavation
Award – Sept. 2018

D/S Cofferdam - \$67.1M
Sept. 2016 Base Award
at \$42.4M.

U/S Miter Gate Fab. - \$5.6M
Awarded Sep 2013, 99% Comp

D/S Lock
Award – Sept. 2019

Upstream Cofferdam - \$17M
Completed Nov 2006

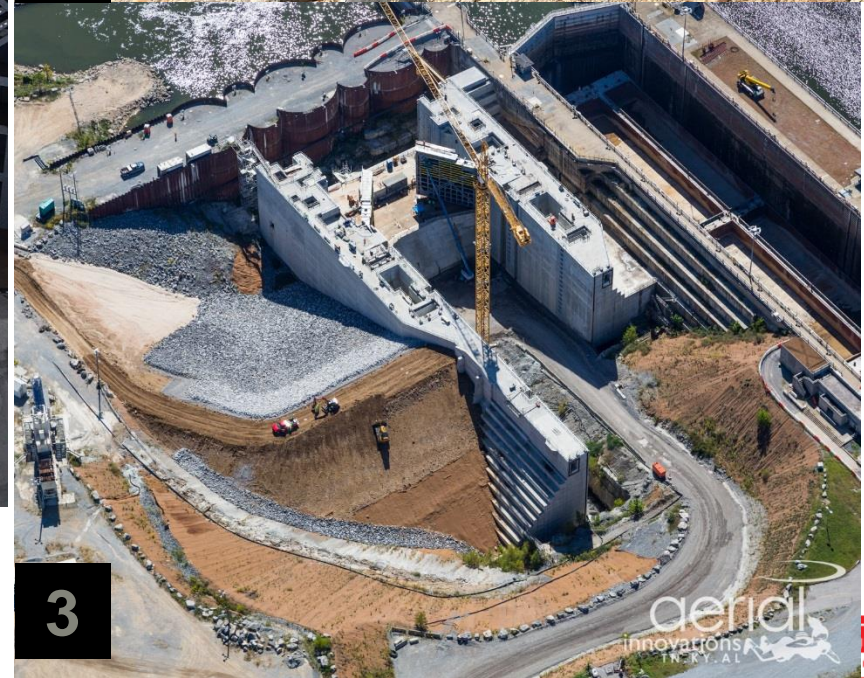
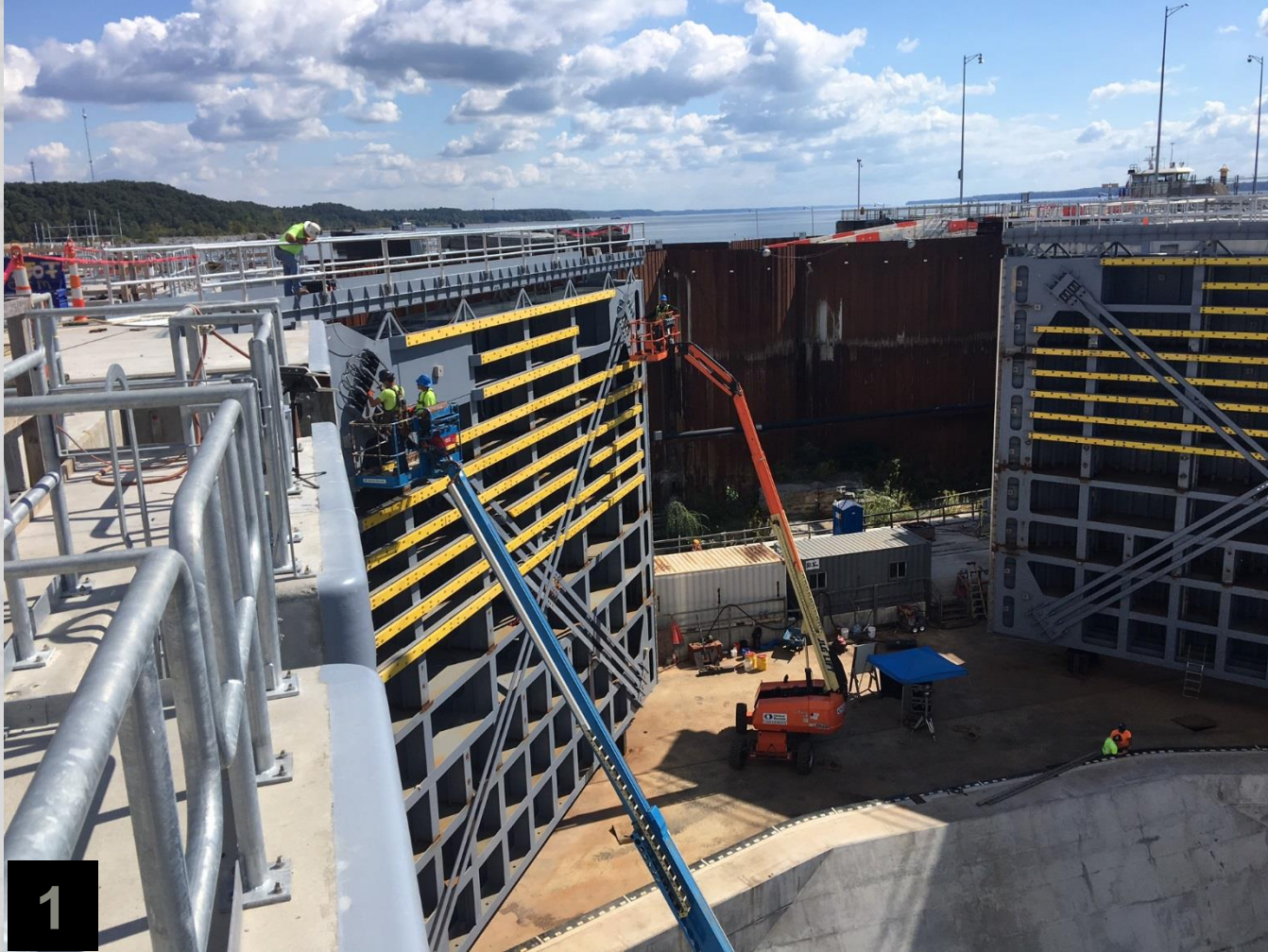
Upstream Lock - \$110M
Awarded Jan 2010, 96% Comp

Approach Walls
Award – Sept. 2021

Site, Demolition, &
Utilities
Award – Sept. 2017

Lock & Associated Facilities	\$664M
TVA Transmission Towers	13M
P & L Railroad	97M
Hwy 62 and other roadways	100M
Total	\$874M

\$471M Obl thru Sep 2016 = 54% complete
BCR = 1.7 & RBRCR = 3.9 (both @ 7%)



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1. Upstream Miter Gates diagonal tensioning 3 Oct 2016; 2. Completed east bank tie-in embankment; 3. Aerial Sept 2016

Kentucky Lock Project Schedule

Major Feature Construction	Award	Complete ²	Revised
Upstream Lock Monoliths Construction	Jan 2010	Dec 2016	
Downstream Cofferdam Construction	Sep 2016	Sep 2019	
Site, Demolition & Utilities	Sep 2017	Nov 2018	New
Downstream Lock Excavation Construction	Sep 2018	Mar 2020	Sep 2017 award date
Downstream Lock Construction	Sep 2019	Dec 2023	
Approach Walls Construction	Sep 2021	May 2023	
Risk Based Total Project Cost Estimate	Mar 2016	Dec 2016 ³	Nov 2016 completion
Economic Update	Nov 2016	Jul 2017	
Post Authorization Change Report for 902 Exceedance ¹	Jul 2017	Mar 2018	

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¹902 Exceedance expected by FY2022

² not risk informed, 80% confidence level schedule available in Dec 2016

³TPCE currently under ATR by Walla Walla Cost CX

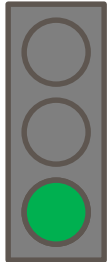


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Kentucky Lock Project

Time and Cost Scorecard – Dec 2016



Expenditures

Planned (BCWS)	NA
Earned (BCWP)	NA
Actual (ACWP)	\$423.2M

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

Target:

Earned value analysis to be performed upon completion of pending risk based cost estimate and schedule.

Schedule

(Baseline)/(Current)

Project Complete	NA/Dec 2023
Lock Operational	NA/Dec 2023

Measures: Planned project completion and Lock operational dates

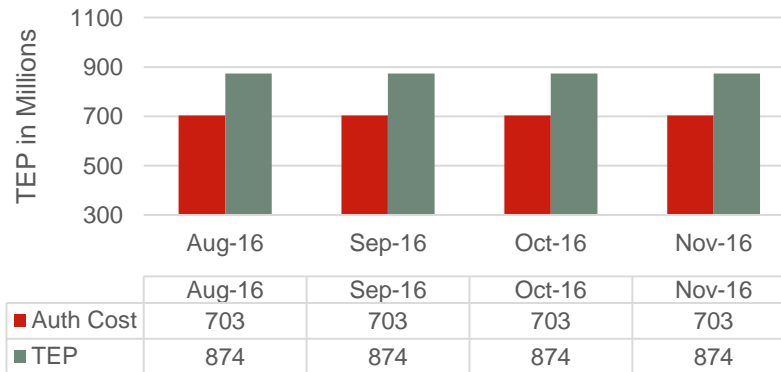
Target:

1. PACR is pending in FY18
2. Risk based schedule complete in Dec 2016

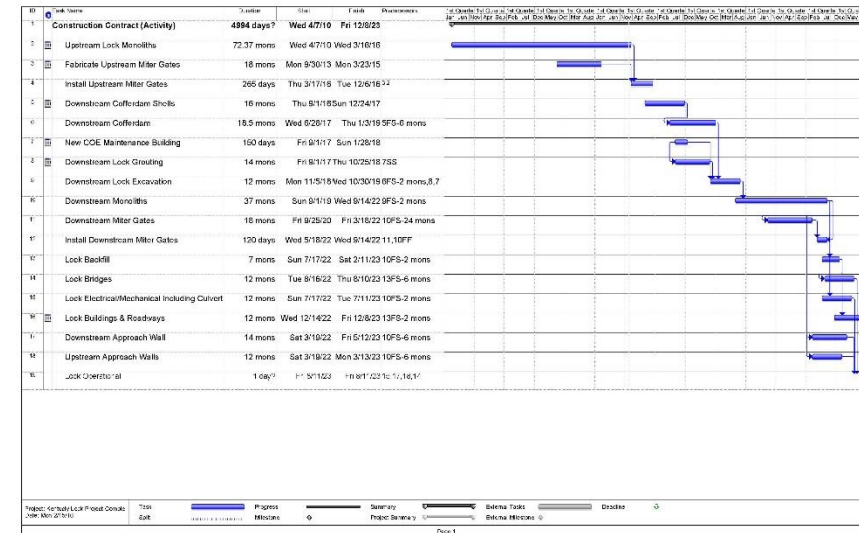


Budget

Kentucky Lock Project TEP Trend



Major Activity Schedule



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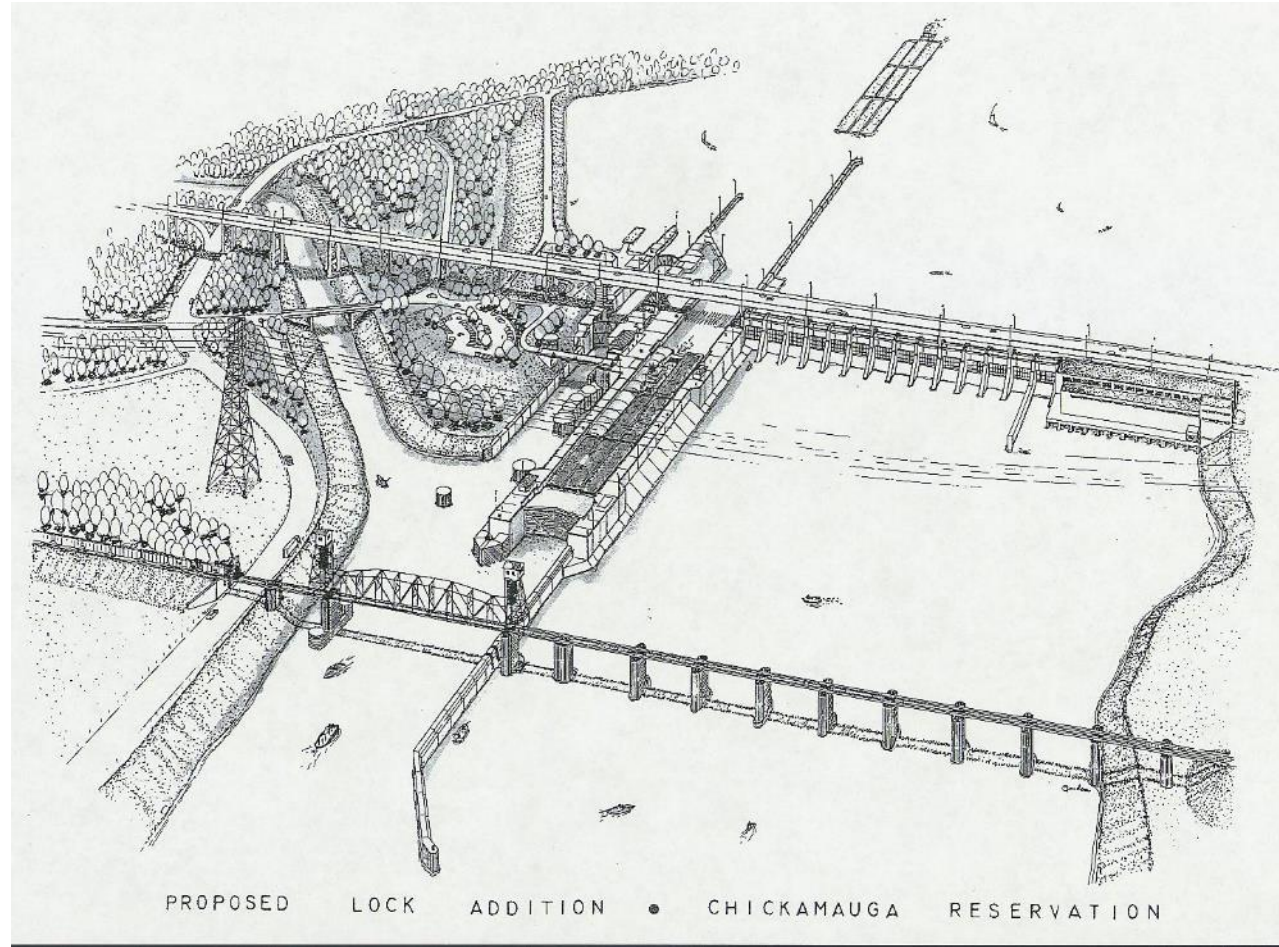
Kentucky Lock

Summary and Challenges

- Project is ramping-up design & construction to reflect Work Plan Funding.
- Recent years average delays >9 hours. CY15 were >14 hours (due to Barkley dewatering). CY16 to date >13 hours.
- New Risk informed estimate will likely increase schedule and budget
- 902 Limit is \$811M vs. current TPCE of \$874M - PACR required

Chickamauga Lock Replacement Agenda

- BLUF / Project Overview
- Construction Photos
- Schedule
- Challenges



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Chickamauga Lock Replacement BLUF

- **Bottom Line Up Front**
 - Economic Update – Approved 11 October 2016
 - New BCR / RBRCR @ 7% = 0.8 / 1.8
 - New BCR / RBRCR @ 3.125% = 2.4 / 8.8
 - Critical Path Construction resumes with September award of Lock Excavation contract.
 - FY17 Efficient funding remains at \$37M, District developing plans for potential FY17 award of Lock Chamber contract.

Chickamauga – Project Overview

Road & Bridges - \$6M
Completed Feb 2007

Lock & Associated Facilities	\$749M
Road and Bridges	6M
Total	\$755M

\$211M Obl thru FY 16 = 28% completed

Decommissioning/Site Work
Award scheduled: Sep '20

Bridge Fabrication - \$400K
Completed June 2011

Lock Chamber
Award scheduled: Sep '17

Gates & Valves - \$17M
Awarded Sep 2009, Comp 2012

Lock Excavation - \$33.2M
Sep '16 Award Base and 2
Options at \$26M.

Approach Beams - \$14M
Awarded Apr 2010, Comp 2013

Cofferdam - \$89M
Awarded Sep 2006, Comp 2012

Cofferdam Stabilization - \$3.1M
Awarded Sep 2015, Comp 2016

Approach Walls
Award scheduled: Sep '21



1. Cofferdam completed in 2012; 2. Cofferdam dewatered looking Upstream in June 2016 during Cofferdam Stabilization contract

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Chickamauga Lock Project Schedule

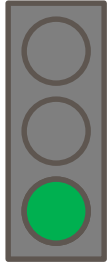
Major Feature Construction	Award	Complete	Revised
Lock Excavation Construction	Sep 2016	Sep 2018	
Lock Chamber	Sep 2017	Sep 2022	
Site Work and Decommission Existing Lock	Sep 2020	Oct 2022	
Approach Walls Construction	Sep 2021	Oct 2023	
Risk Based TPCE	Aug 2015	Jun 2016	
Economic Update	Jan 2015	Oct 2016	
PACR for 902 Exceedance ¹	Oct 2016	TBD ²	Completion milestone

¹ 902 Exceedance expected by FY2020

² Project to be briefed to HQ Change Control Board (CCB) prior to PACR Submission

Chickamauga Lock Project

Time and Cost Scorecard – Dec 2016



Expenditures

Planned (BCWS)	NA
Earned (BCWP)	NA
Actual (ACWP)	\$185.5M

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)

Earned Value Analysis not yet developed.

Schedule

(Baseline)/(Current)

Project Complete	NA / Oct 2023
Lock Operational	NA / Oct 2023

Measures: Planned project completion and Lock operational dates

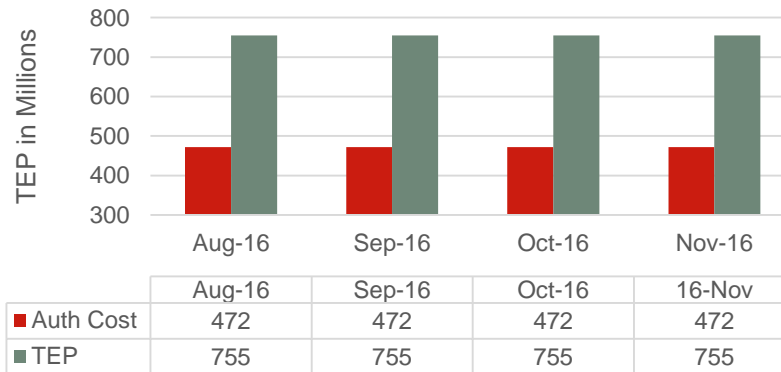
Target:

PACR Development Pending in FY17.

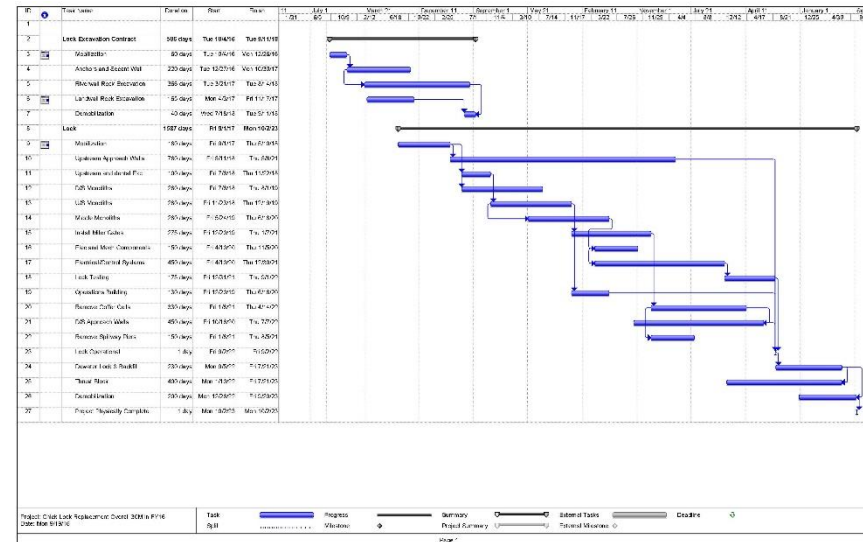


Budget

Chickamauga Project TEP Trend



Major Activity Schedule



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Chickamauga Lock Summary and Challenges

- Project is ramping up construction and design to reflect Work Plan funding.
- Project schedule has been adjusted to reflect Efficient Funding.
- New Economic Update results in BCR below 1.0 @ 7% discount rate due to reduced benefits. But BCR @ 3.125% and RBRCR at both rates are healthy.
- 902 Limit is \$472M (FY15) vs. current TPCE of \$755M (FY17) - PACR required