

IWTF Projects Update Inland Waterways Users Board Meeting No. 82

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KY Lock Addition BLUF

■ Bottom Line Up Front

- ▶ Critical Path Construction has resumed with the September award of Downstream Cofferdam. However, Options expiration date is 31 May 2017.
- ▶ New Risk-Based Total Project Cost Estimate
 - New Fully Funded Cost Estimate of \$1.25B represents a 41% increase from previous estimate
 - Current BCR of 1.7 at 7% will decrease if Benefits remain the same. Benefits will be updated upon completion of Level 3 Economic Update, just now getting underway.

KY Lock Project Overview

Bridges Superstructures - \$104M
Completed Jul 2014

Bridges Substructures - \$44M
Completed Mar 2006

D/S Excavation
Award – Sept. 2018

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

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

Upstream Cofferdam - \$17M
Completed Nov 2006

D/S Lock
Award – Sept. 2019

Upstream Lock - \$110M
Awarded Jan 2010, 100% Comp

Approach Walls
Award – Sept. 2021

Site, Demolition, &
Utilities
Award – Sept. 2017

Lock & Associated Facilities	\$1,044M
TVA Transmission Towers	13M
P & L Railroad	97M
Hwy 62 and other roadways	100M
Total	\$1,254M

\$471M Obl thru Sep 2016 = 38% complete



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1. 16 Feb 2017 D/S Cofferdam Marine Safety meeting with Port Captains and US Coast Guard; 2. 31 January 2017 dismantling of U/S Lock tower crane.



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KY Lock Project Schedule

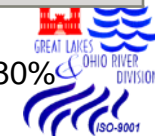
Major Feature Construction	Award	Complete ²	Revised
Upstream Lock Monoliths Construction	Jan 2010	Feb 2017	Complete
Downstream Cofferdam Construction	Sep 2016	Sep 2019	
Site, Demolition & Utilities	Sep 2017	Nov 2018	
Downstream Lock Excavation Construction	Sep 2018	Dec 2020	
Downstream Lock Construction	Sep 2019	Mar 2024	
Approach Walls Construction	Sep 2021	Nov 2023	
Risk Based Total Project Cost Estimate	Mar 2016	3 Jan 2017	Complete
Economic Update	Jan 2017 ³	Jan 2018	
Post Authorization Change Report for 902 Exceedance ¹	Jul 2017	Mar 2018	

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¹902 Exceedance expected by FY2022

² New schedule associated with new cost estimate. Assumes no risk. 80% confidence schedule adds 46 months to project completion date)

³Economic Update start delayed due to lack of funds.



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New Total Project Cost and Schedule

- **\$1.254B new vs. 874M Fully Funded previous**
- **Major reasons for the cost increase:**
 - ▶ New estimate is risk based with a 80% confidence level. New project contingencies are 31% vs. 8% for previous.
 - ▶ Unit prices, level of estimating effort, and design details are more refined for the new estimate.
 - ▶ More details on the cost differential will be available by next IWUB meeting.
- **New earliest completion date with new schedule is March 2024 vs. December 2023 in previous schedule. At an 80% confidence level, the risk based completion date will be extended 46 months to January 2028. 36 of the 46 months are due to the risk of inefficient funding.**

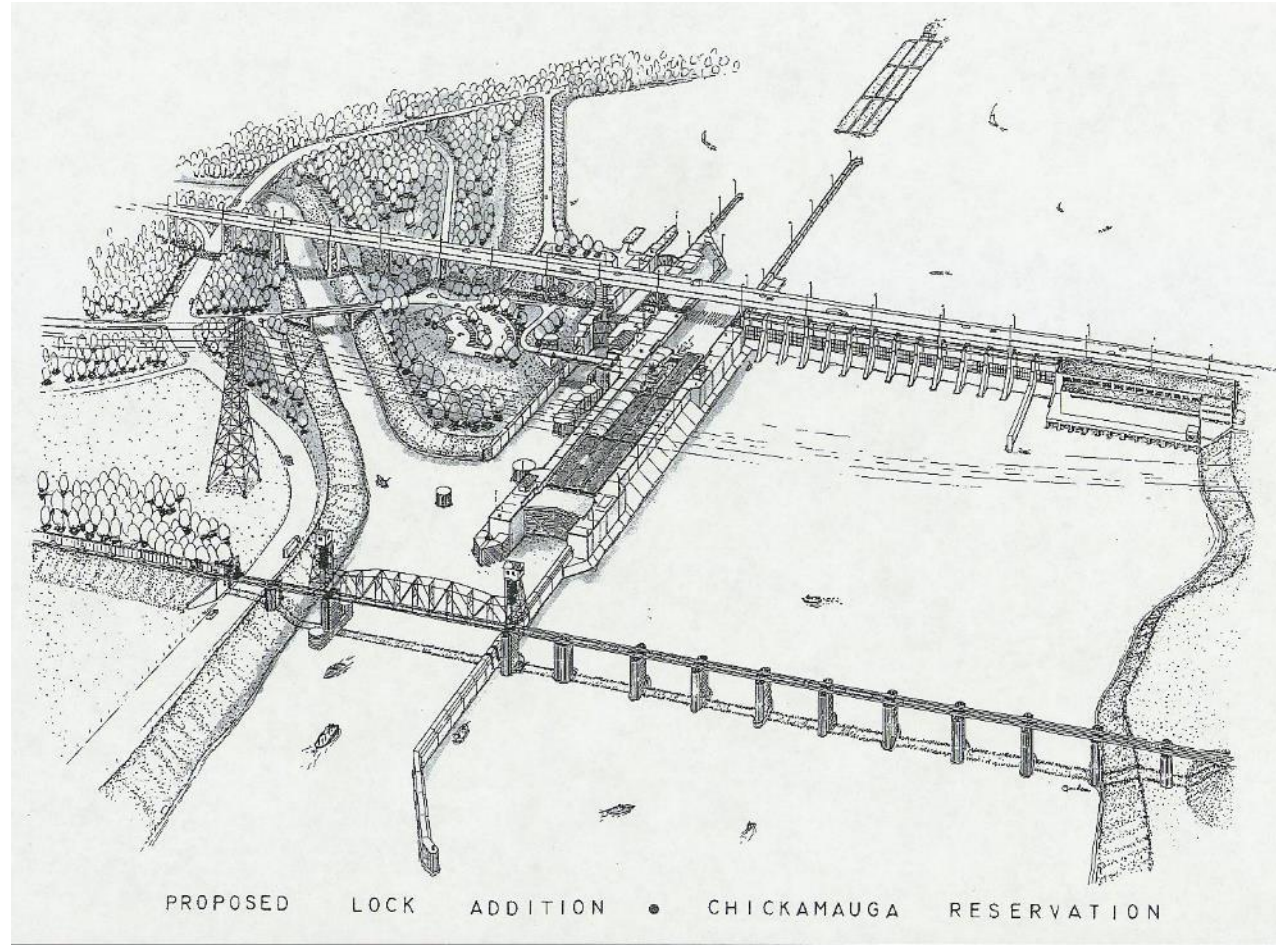
KY Lock

Summary and Challenges

- **\$27.5M in Downstream Cofferdam Options expire on 31 May 2017.**
- **New Risk informed estimate will have negative consequences on the project's economic metrics and will place further strain on IWTF.**
- **However, recent years average delays at KY Lock >9 hours and traffic levels remain robust. This should bode well for upcoming Economic Update.**
- **902 Limit is \$819M vs. current TPCE of \$1.25B - PACR required**

Chickamauga Lock Replacement Agenda

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



Chickamauga Lock Replacement BLUF

- **Bottom Line Up Front**
 - Economic Update – Approved 11 October 2016
 - New BCR / RBRCR @ 7% (OMB rate) = 0.8 / 1.8
 - New BCR / RBRCR @ 3.125% (FY16 rate) = 2.4 / 8.8
 - New BCR / RBRCR @ 2.875% (FY17 rate) = 2.7 / 14.2
 - Lock Excavation contract underway, includes 6 unexercised options valued at \$7.25M. Options are currently set to expire on 31 May 2017.
 - 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; 3. Site visit by LRD Commander, BG Mark Toy, Congressional Staffers, and Navigation Representatives on 25 January 2017.

Chickamauga Lock Project Schedule

Major Feature Construction	Award	Complete	Revised
Lock Excavation Construction	Sep 2016	Sep 2018	
Lock Chamber	Sep 2017	Dec 2023	Completion date ³
Site Work and Decommission Existing Lock	Sep 2020	Sept 2024	Completion date ³
Approach Walls Construction	Sep 2021	Dec 2023	Completion date ³
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

³ Completion dates revised to reflect latest risk based cost and schedule analysis.

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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 and risk based cost and schedule analysis.
- New Economic Update results in BCR below 1.0 @ 7% discount rate due to reduced benefits. But BCR and RBRCR at current rates are healthy.
- 902 Limit is \$482M (FY17) vs. current TPCE of \$755M (FY17) - PACR required