

Kentucky Lock Project Update Inland Waterways Users Board Meeting No. 91

For Mr. Don Getty
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23 May 2019



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Kentucky Lock Addition

Bottom Line Up Front

- **Downstream Cofferdam Construction**
 - ▶ High water is extending Contract completion date by at least 6 months
 - Project schedule impacts are expected due to high water
- **Site, Demolition & Utilities contract is nearing completion.**
- **\$43.6M in FY19 funding will allow exercising all 5 remaining Options of the Downstream Lock Excavation contract – construction is going well.**
- **Economic Update and Post Authorization Change Report progressing.**

Kentucky Lock Project Overview

Bridges Superstructures - \$104M
Completed Jul 2014

Bridges Substructures - \$44M
Completed Mar 2006

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

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

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

D/S Lock Monoliths
Award – Sept. 2020

Upstream Cofferdam - \$17M
Completed Nov 2006

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

Approach Walls
Award – Sept. 2021

Upstream Lock - \$110M
Completed Feb 2017

Contract Legend

Completed
Current
Future

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

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

1 Mar 2019 – Near crest of high river



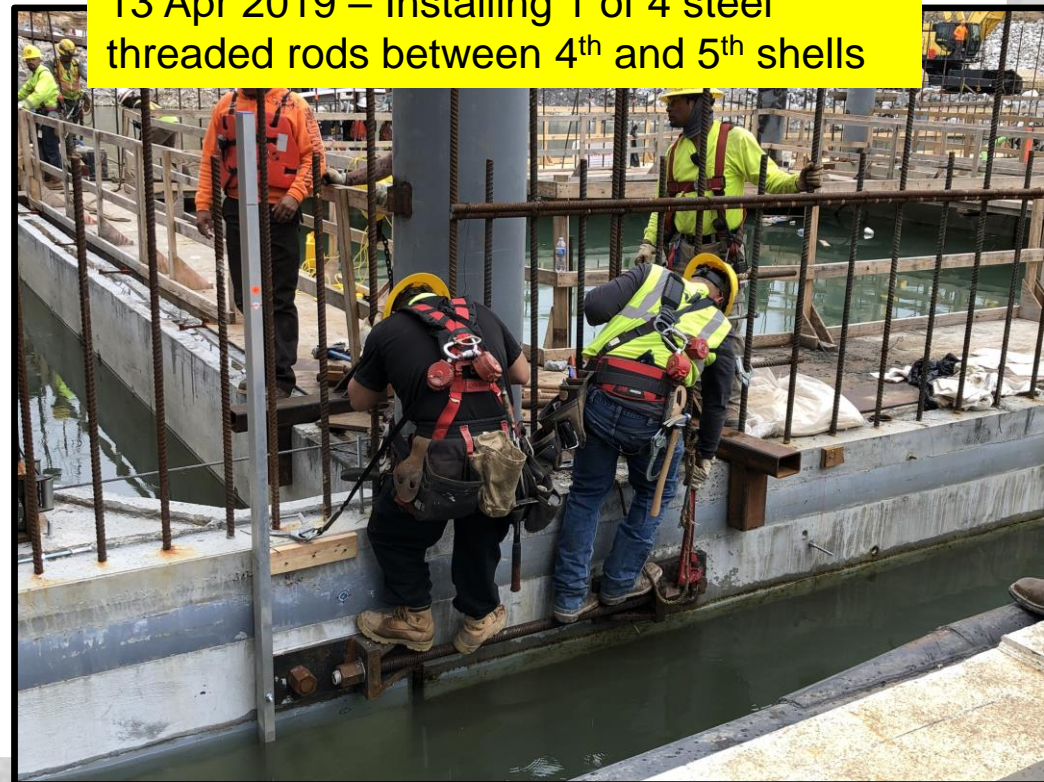
3 Shells

1 April 2019 -
4th Shell Placement



Downstream Cofferdam Construction

13 Apr 2019 – Installing 1 of 4 steel
threaded rods between 4th and 5th shells



13 Apr 2019 – 5th Shell lowering into place



DS Cofferdam Risk Reduction Discussion

Dive Time – Additional, targeted lock closures will reduce critical path dive time. Will shorten schedule in magnitude of weeks.

2 days of closure for diving were expected per shell, but only one day closures were required for Shells 4 and 5.



KENTUCKY LOCKS & DAM, TENNESSEE RIVER, KY

	ARRA	CG	IWTF	Total
Total Project Cost (TPC):				\$1,215,858,000¹
Allocations through FY2014:	\$88,833,626	\$175,955,288	\$141,460,987	\$406,249,901
FY15 Allocation:	\$0	\$7,350,000	\$7,350,000	\$14,700,000
FY16 Allocation:	NA	\$22,850,000	\$22,850,000	\$45,700,000
FY17 Allocation:	NA	\$18,000,000	\$18,000,000	\$36,000,000
FY18 Allocation:	NA	\$20,600,000	\$20,600,000	\$41,200,000*
FY19 Allocation:	NA	\$21,800,000	\$21,800,000	\$43,600,000
Total Allocations to Date:	\$88,833,626	\$243,905,288	\$209,410,987	\$585,749,901
Remaining TPC Balance:				\$630,108,099
Remaining Balance Change From Last Meeting				-\$38,627,000

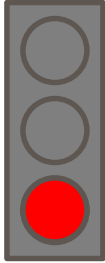
Note: ¹Project cost data is reflective of **27 Feb 19** certified cost at a price level adjustment (**OCT 18 \$'s**), Fully Funded, 2024 completion

Changes
New Total Project Cost Estimate is reflected in above table.

Funding Overview	
• Authorized Cost:	\$752,790,000 (Oct18 \$)
• 902 Limit:	\$885,623,000 (Oct18 \$)
• ARRA (FY09-13):	\$ 88,833,628
• Engineering & Design Cost:	\$112,162,000 (Thru FY18)
• Supervision & Admin Cost:	\$ 21,391,000 (Thru FY18)
• Mitigation Cost: TBD;	
alternative analysis on hold pending funding	

Current Status of the Project
<ul style="list-style-type: none"> • Downstream Cofferdam construction is 52% complete; Site Demolition Utilities contract is 99% complete; and Downstream Lock Excavation construction contract 5% completed.
Next Steps
<ul style="list-style-type: none"> • Economic Update & PACR by summer 2019. • Progress Downstream Monolith P&S to 30% by summer 2019.

Kentucky Lock Project Time and Cost Scorecard



Expenditures

31 Mar

Planned (BCWS)	\$513.4M
Earned (BCWP)	\$490.9M
Actual (ACWP)	\$480.3M

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

31 Mar

(Baseline)/(Current)

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

Measures: Planned project completion and Lock operational dates

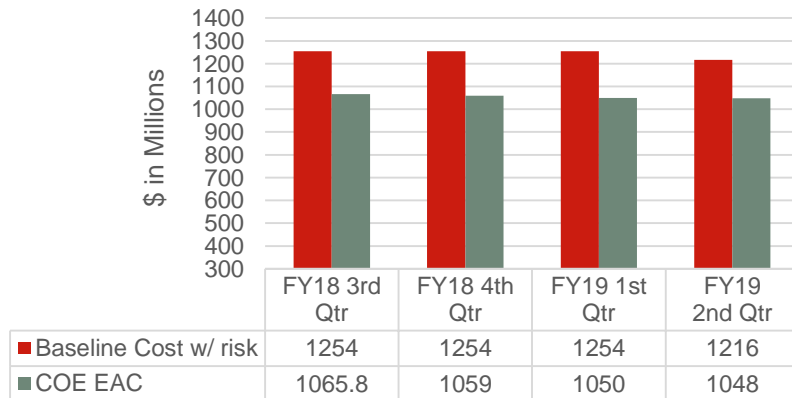
Target:

PACR Anticipated in FY19.



Budget

KY Lock Project EAC Trend



Major Activity Schedule

Activity	Baseline	Current
Certification of Total Project Cost Estimate	Jan 2019	Feb 2019(A)
Site, Demolition, & Utilities – Complete	Jan 2019	Mar 2019(A)
Economic Update/PACR to HQ	Feb 2018	July 2019



Kentucky Lock Project Schedule

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

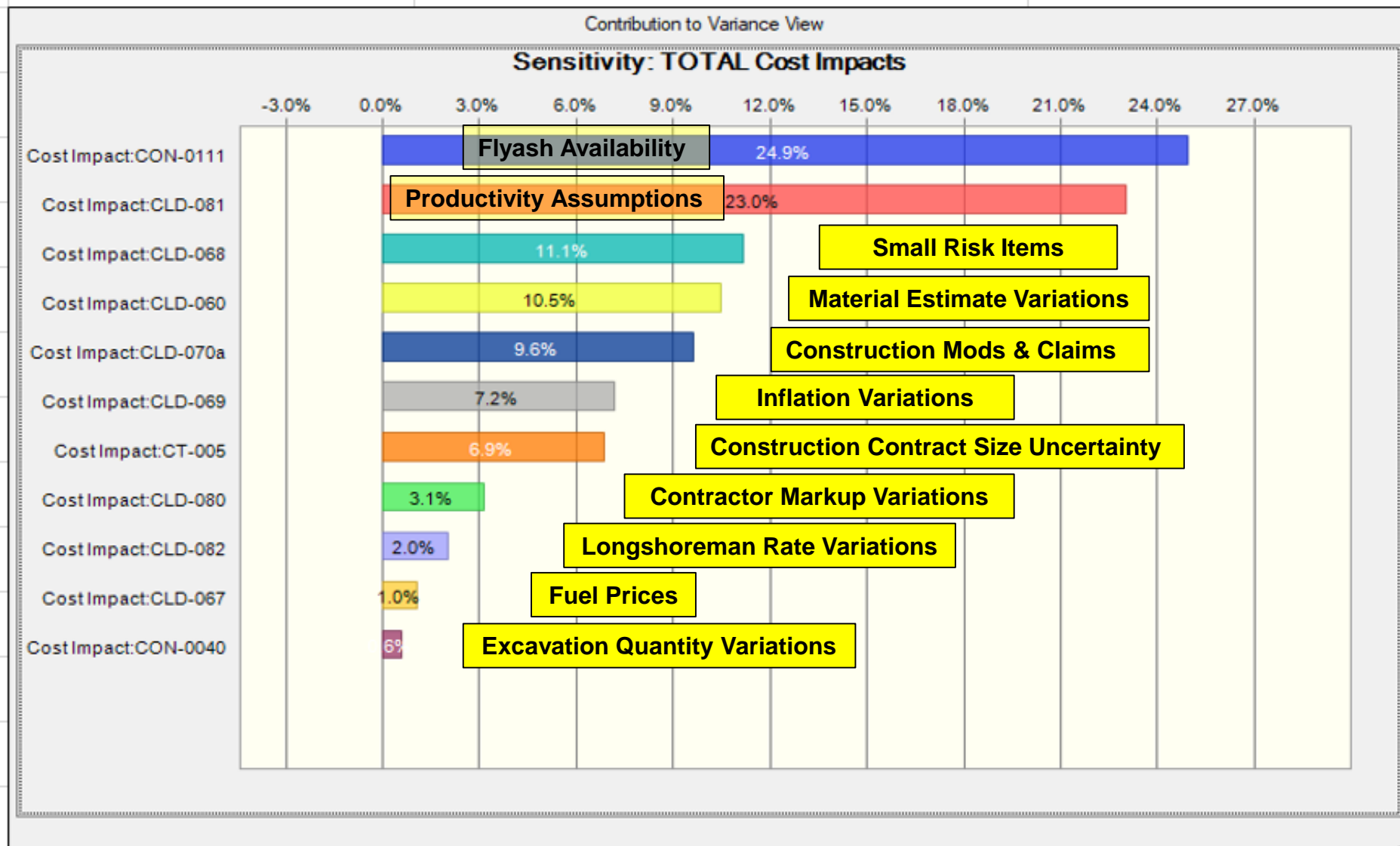
Note: Red indicates revised date from previously reported

¹902 Exceedance expected as early as FY2022

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

Cost Risk Factors

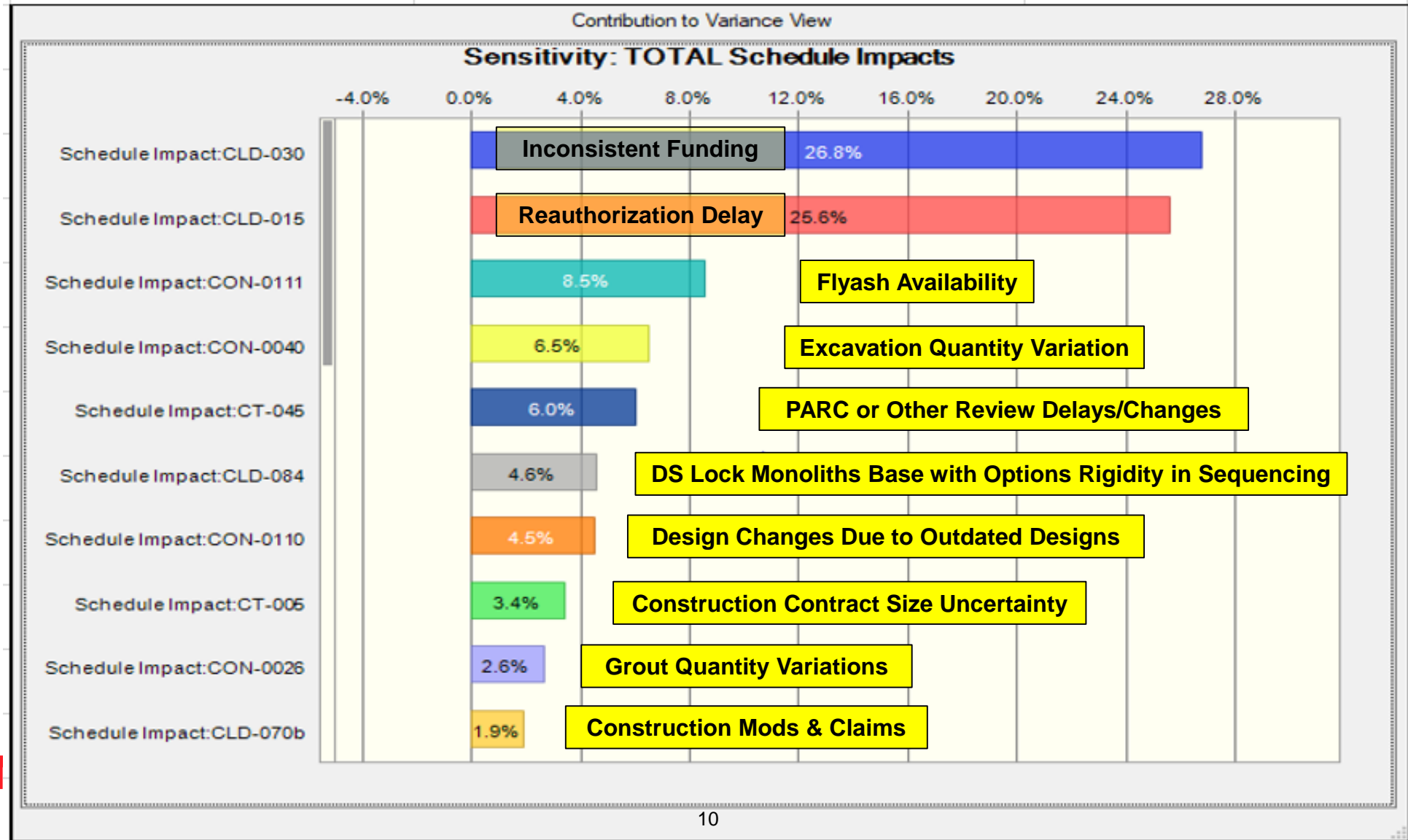
Cost Contingency = \$156M (24.5%)



BUILD

Schedule Risk Factors

Schedule Contingency = 41 months



BUILDII

Kentucky Lock

Summary and Challenges

- High river levels have and are likely to continue to negatively affect Project schedule.
- 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 Kentucky Lock >8 hours traffic levels remain robust. This bodes 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