

Kentucky Lock Project Update Inland Waterway Users Board

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KY Lock Addition

Bottom Line Up Front

- **Downstream Cofferdam Construction**
 - ▶ High water is extending Contract completion date by at least 6 months
 - No significant Project impacts yet due to experienced 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.**
- **Total Project Cost Estimate Complete(?). Economic Update and Post Authorization Change Report progressing.**

KY 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 - \$4.1M
Award – Jan 2018

Approach Walls
Award – Sept. 2021

Upstream Lock - \$110M
Completed Feb 2017

Contract Legend

Completed
Current
Future

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

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



26 Oct 2018
3rd Shell Placement



12 Feb 2019 - High River Elevations

3 Shells

Downstream
Cofferdam
Construction



28 Jan 2019 - Shells 4 & 5 Ready to Set



28 Jan 2019 - Shell 6 of 10 in progress

e!



12 February 2019

Kentucky Lock

Downstream Cofferdam

Partnering “Rocks in the River” Session



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DS Cofferdam Risk Reduction Discussion

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

Concrete delivery to 10 monoliths/shells – Pumping instead of Conveyor system. Will require changing/approving new concrete mixes. Pumping adds significant flexibility and time savings. Will shorten schedule in magnitude of weeks/months.

Flyash Supply Interruptions – Add onsite stockpile (e.g., silos) for approximately 30 days worth of supply. Will reduce schedule and cost risk. Will benefit future contractors.



Site, Demolition, and Utilities Construction



Operations Building modifications and catwalk



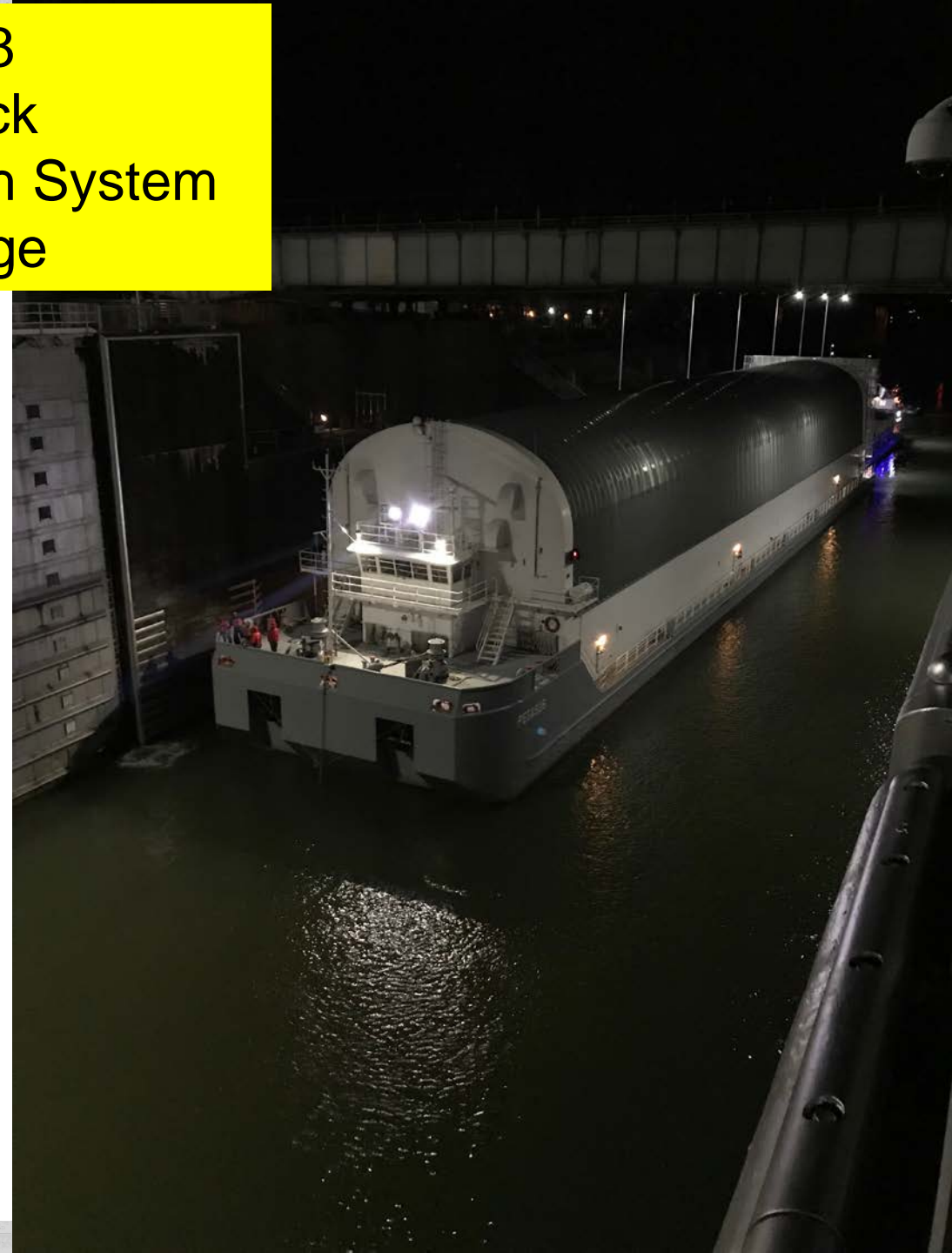
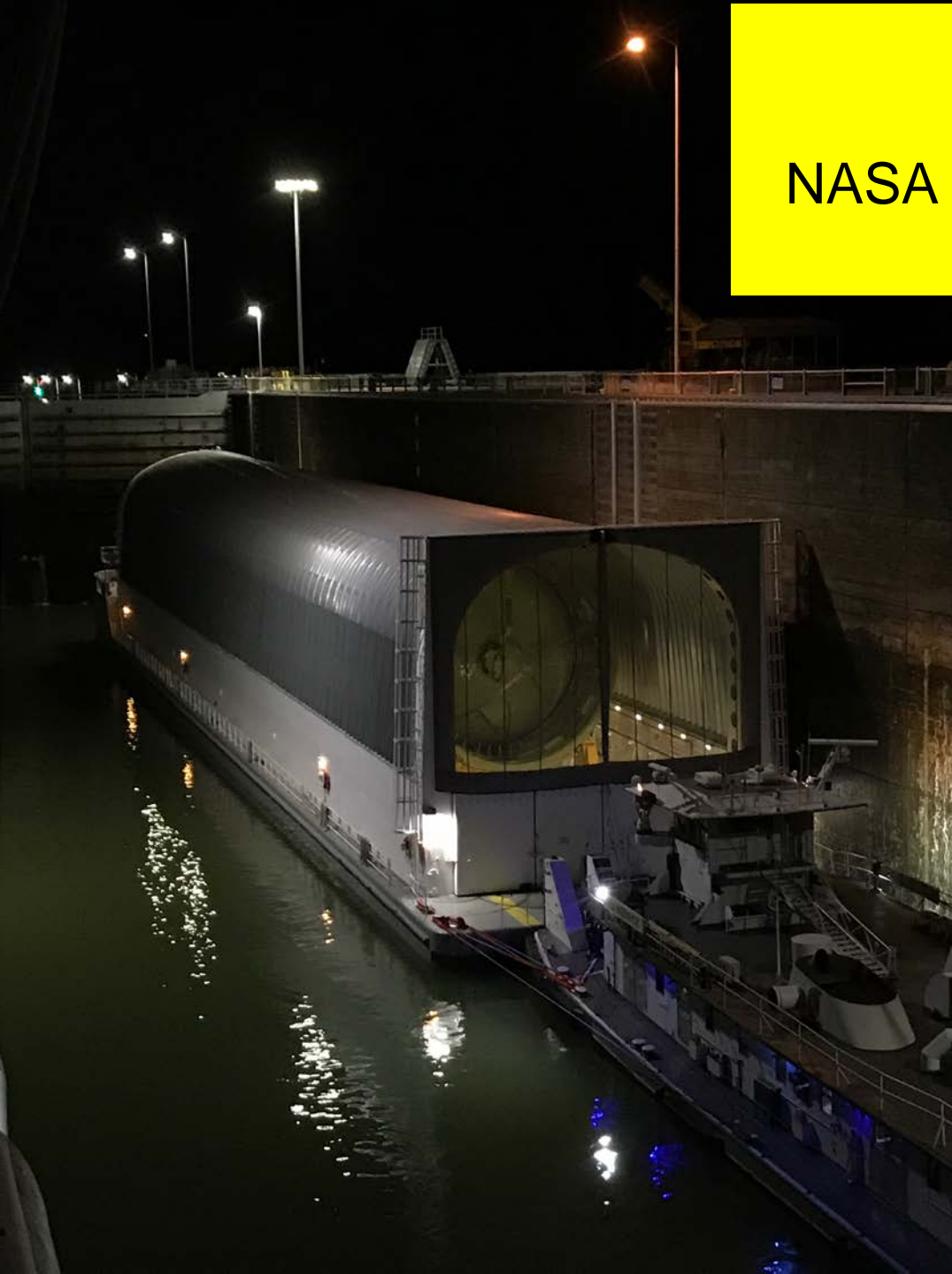
Utility brackets & jib crane on lock wall



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24 Dec 2018
Kentucky Lock
NASA Space Launch System
Pegasus Barge





17 February 2019
Kentucky Lock
Fort Campbell Unit
Three Tows



RIVER, KY

	ARRA	CG	IWTF	Total
Total Project Cost (TPC):				\$1,254,485,000 ¹
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:				\$668,735,099
Remaining Balance Change From Last Meeting				\$0

Note: ¹Project cost data is reflective of 03 Jan 17 certified cost at a price level adjustment (OCT 17 \$'s), Fully Funded, 2024 completion

Changes

None

Funding Overview

- Authorized Cost: \$796,318,000 (Oct16 \$)
- 902 Limit: \$819,736,000 (Oct15 \$)
- 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

- Downstream Cofferdam construction is **49%** complete; Site Demolition Utilities contract is **75%** complete; and Downstream Lock Excavation construction contract **<2%** completed.

Next Steps

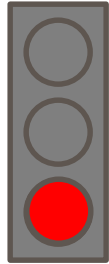
- Certify new TPCE by **28 February 2019**.
- Economic Update & PACR by spring 2019.
- Progress Downstream Monolith P&S to 30% by summer 2019.



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Kentucky Lock Project Time and Cost Scorecard



Expenditures

31 Dec

Planned (BCWS)	\$494.1M
Earned (BCWP)	\$482.0M
Actual (ACWP)	\$472.7M

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 Dec

(Baseline)/(Current)

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

Measures: Planned project completion and Lock operational dates

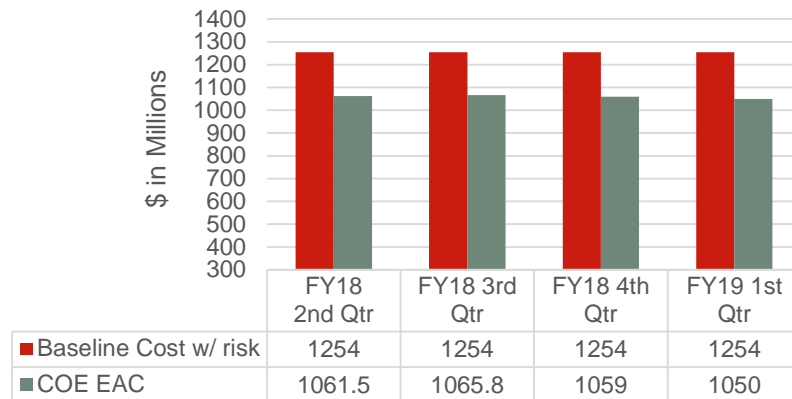
Target:

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
Level 3 Economic Update – Draft Report	14 Nov 2017	Mar 2019
Site, Demolition, & Utilities – Complete	Jan 2019	Mar 2019
PACR to HQ	Feb 2018	Sep 2019



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KY 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	May 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
Economic Update	Jan 2017	June 2019
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.

Results of New Total Project Cost Estimate

(all at FY19 Price Level & 80% Confidence Level Contingencies)

2017 TPCE	2019 TPCE	Difference
\$1,284M	\$1,216M	\$68M (5% reduction)

Primary reasons for cost reduction:

- 1) Favorable bids on Downstream Lock Excavation in Sep 2016.
- 2) Reduction in future contingencies due in large part to reduction in funding uncertainty risk.

Note: Cost reduction will not affect FY20 Efficient Funding level. FY20 Efficient Funding amount is based primarily on scope of Downstream Lock Monoliths Base Contract – award Sept 2020.

KY Lock

Summary and Challenges

- High river levels are likely 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 KY Lock >8 hours and traffic levels remain robust. This should bode well for benefits in ongoing Economic Update.