

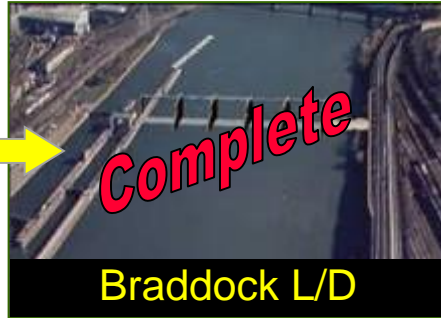
Lower Mon Bottom Line Up Front

- ✓ Current Schedule: **On Schedule**
 - ▶ **April 2023** (Early Project Operational, 90% benefits)
 - ▶ January 2024 (Early Project Complete)
- ✓ Current Cost: **On Budget**
 - ▶ TEP – Total Estimated Price, assuming efficient funding, at **\$1.10 B**, **\$1.23 B** including all contingencies.
- ✓ Keys:
 1. River Chamber Completion Option 3 awarded in FY 2018.
 2. Pool 3 Dredging Task Order # 2 awarded in FY 2018.
 3. Charleroi Stilling Basin awarded 30 Oct 2018.
 4. \$89M was requested thru FY2019 work plan.
 5. FY2019 President's budget = \$0, potential remains for cost and schedule growth.
 6. River Chamber Completion Option 4 to be awarded in 2019
 7. Continue to investigate alternatives to reduce the project's critical path.

Lower Mon - Project Overview

Pre-Project Condition

Post-Project Condition



■ Major Project Features

- New Dam at Braddock
- New Locks at Charleroi
- Dredging
- Removal of Locks and Dam 3
- Relocations

■ Financial

- 902 Limit: \$1.76 Billion
- Current Estimate at Completion **\$1.1** Billion, including contingencies ^{*1}

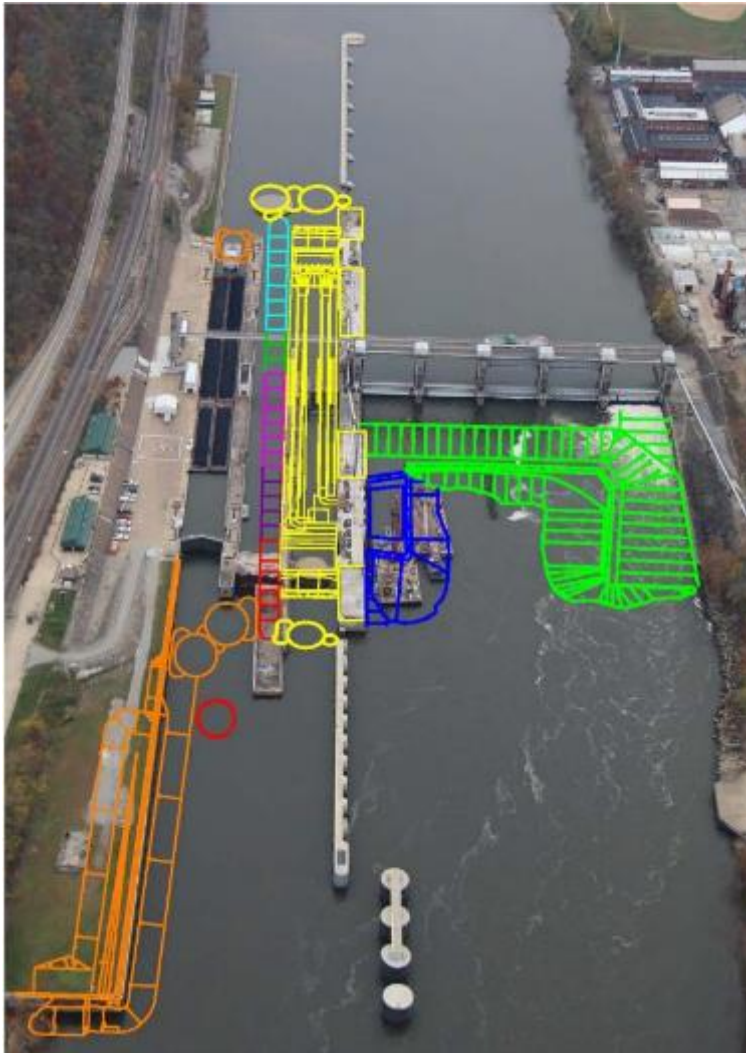
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Lower Mon - Project Schedule

Major Feature Construction	Last Reported Completion (Jun 2018)	Revised ^{*1}
Charleroi M22-M27	FY 2020	
Charleroi Dam Stilling Basin	FY 2021	FY 2022
Charleroi River Chamber Completion (RCC)	FY 2023	
Dredging Pool 3	FY 2020	
Relocations	Variable	
Lock and Dam 3 Removal	FY 2023	

*1 – Assumes receipt of FY 2019 capability

Lower Mon – Charleroi Ongoing / Pending Construction Plan



Description	Last Reported Completion	Current Completion (FY18 Work Plan)	Current Completion (No FY18 Work Plan)	Previously Planned Award	Current Planned Award	Option Expires	% Complete
M22-M27	2020	2020	2020	Completed	Aug 14 A	NA	66%
RCC Base	2023	2023	2019	Completed	Sep 15 A	NA	88%
RCC Opt 1	2023	2023	2027	Completed	Aug 17 A	30 Sep 17	14%
RCC Opt 2	2023	2023	2027	Completed	Aug 17 A	30 Sep 18	8%
RCC Opt 3	2023	2023	2027	Nov 17	Sep 18 A	30 Sep 18	0%
RCC Opt 4	2023	2023	2027	Dec 18	Aug 19	31 Mar 20	NA
RCC Opt 5	2023	2023	2027	Nov 20	Sep 20	31 Mar 21	NA
Stilling Basin	2021	2022	NA	Sep 18	Oct 18 A	NA	0%

Notes:

- Risk informed RCC completion is 2027

- Remaining project features not shown on this slide:

- Dredging Award Task Order 2 Sept 2018
- Pool Clearing (FY21 planned award)
- Lock and Dam 3 Removal (FY21 planned award)
- Relocations
- RCC Option 4 at risk (funding)
- Dredging Task Order 3 at risk (funding)

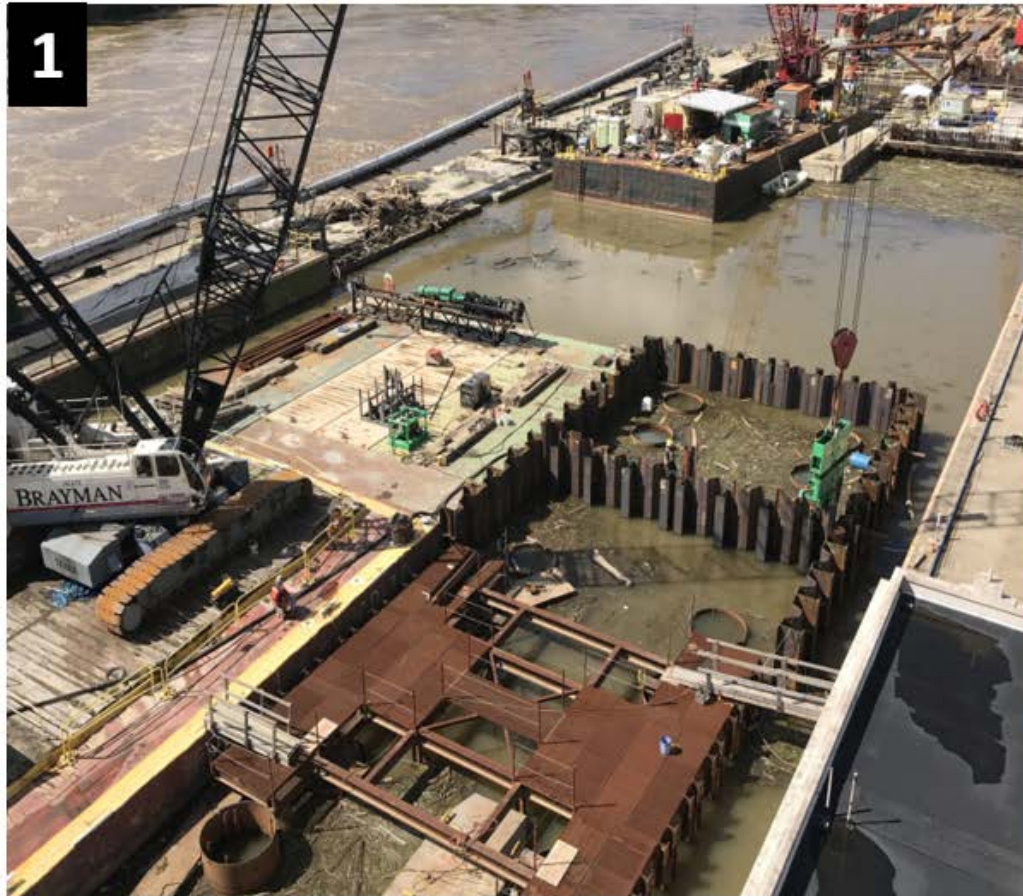
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Charleroi Construction Images



1 - River Chamber Completion Contract, M16 Cofferdbox after high water event first week of October
2 - M22-M27 Contract, Airlifting in Cofferdbox M23

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Charleroi Construction Images



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Locks and Dams 2, 3, and 4, Monongahela River, PA

Current Project Estimate*1: \$1.23B (\$2.76B)	ARRA	CG	IWTF	Total
Allocations through FY2014:	\$68,402,740	\$281,175,646	\$281,175,652	\$630,754,038
FY15 Allocation:	(\$141,537)	\$28,015,000	\$28,015,000	\$55,888,463
FY16 Allocation:	NA	\$29,450,000	29,450,000	\$58,900,000
FY17 Allocation:	NA	\$41,005,000	\$41,005,000	\$82,010,000
FY18 Allocation:	NA	\$48,150,000	\$48,150,000	\$96,300,000
FY19 Budget:	NA	\$0	\$0	\$0
Total Allocations to Date:	\$68,261,203	\$427,795,646	\$427,795,652	\$923,852,501
Remaining Balance:		\$154,991,250	\$154,991,250	\$309,982,499
Remaining Balance Change From Last Meeting:				\$ 0

Changes: \$1.7 M FY 18 Work Plan Funds Reprogramed to Kentucky Lock

Funding Overview

- Original Authorized Cost: \$556M
- 902 Limit: \$1.76B
- ARRA Funding (FY09-FY15): \$68.3M
- Engineering & Design Cost: \$694M*2
- Supervision & Admin Cost: \$183M*3
- Mitigation: \$12M
- Fully Funded Estimate: \$2.76B

Next Steps

- Stilling Basin package for Award – FY18 (September)
- Award Dredging Task Order #2 – FY18 (September)
- Award RCC Option 3 Award – FY18 (September)

Current Status of the Project

- Charleroi M22 – M27 Construction – Considering alternatives to de-conflict RCC Option 3 work area
- Charleroi RCC Construction – **4%** behind schedule

*1. Total Project Cost update – May 2018. Cost for 90% of project benefits increased from \$1.22B to \$1.23B. Total project cost increased from \$2.73B to \$2.76B.

*2. \$694M includes all Engineering & Engineering During Construction, including \$473M for the Charleroi Land Chamber, \$378 million of which is inflation.

*3. \$183M includes all construction contract Supervision and Administration, including \$120M for the Charleroi Land Chamber, \$102 million of which is inflation.

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Locks and Dams 2, 3, and 4, Monongahela River, PA

Schedule of Remaining Work	Design Initiated	Contract Award	Construction Complete *2	Project Benefits*3	Capitalized Cost Closeout*3
Charleroi River Wall	1-Oct-95	27-Sep-04	30-May-16	2023	2025
Charleroi Emptying Basin	1-Oct-95	30-Sep-13	11-Nov-15	2023	2025
Charleroi River Chamber (M22-M27)	1-Oct-95	15-Aug-14	FY 2020 S	2023	2025
Charleroi Dam Stilling Basin	1-Oct-95	30 Oct -18	FY 2022 S	2023	2025
Charleroi River Chamber Completion	1-Oct-95	16-Sep-15	FY 2023 S	2023	2025
L/D 3 Removal	2020 S	2021 S	FY 2023 S	2023	2025
Dredging	1-Oct-95	29-Sep-17	FY 2020 S	2023	2025
Municipal Relocations *1	1-Oct-95	Multiple	Multiple	NA	2025

- * 1: To complete all municipal relocations, multiple relocation agreements are required.
- * 2: Dates are achievable based on the most efficient funding profile (early schedule).
- * 3: Project benefit and close out dates are based on the most efficient funding profile & breaching of Dam 3. Early contract completion for Dam 3 removal extends into 2023.

Actual

"S"= Scheduled

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Lower Monongahela River Project

Time and Cost Scorecard



Expenditures

	No Contingency	Contingency Included	30 Sept 18
Planned (BCWS)	\$784.0M	\$694.1M	
Earned (BCWP)	\$704.2M	\$753.0 M	
Actual (ACWP)	\$724.2M	\$724.2M	
	CPI = 0.97	CPI 1.04	

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

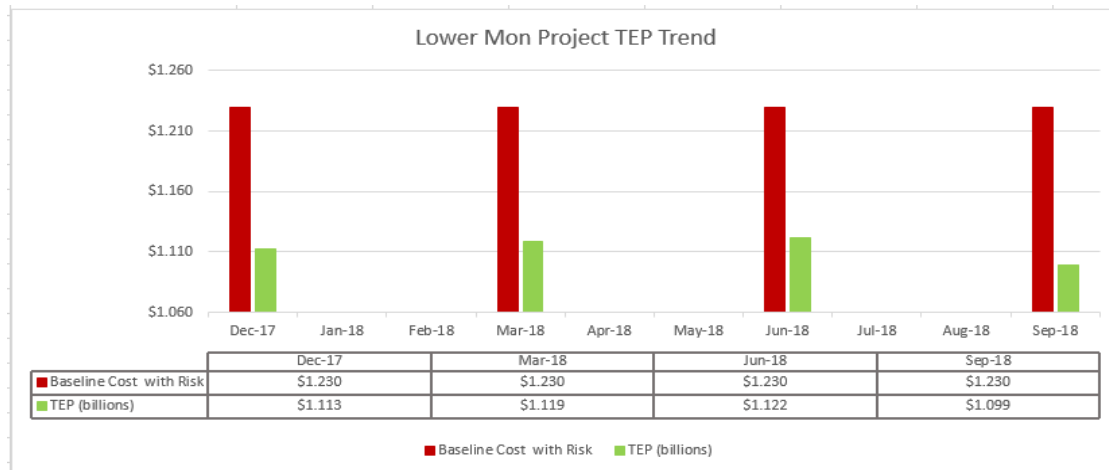
Target:

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

Values shown reflect project sunk cost of \$550.6M thru FY 2014.

EAC = \$1.10B TPC = \$1.23 B

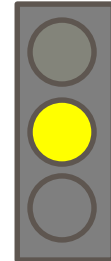
Budget



Schedule

(Baseline)/(Current Early) 30 Sept 18

Operational (Realize over 90% of project Benefits) 2027 / 2023
Project Complete 2029 / 2028



Major Activity Schedule

Activity	Baseline	Current
RCC Option 3 Award	Nov 2017	27 Sep 2018 (A)
Dredging Award T.O. 2	30 Sep 2018	27 Sep 2018 (A)
Stilling Basin Award	30 Sep 2018	30 Oct 2018 (A)
RCC Option 4 Award	31 July 2019	31 July 2019
Dredging T.O.3	TBD	TBD

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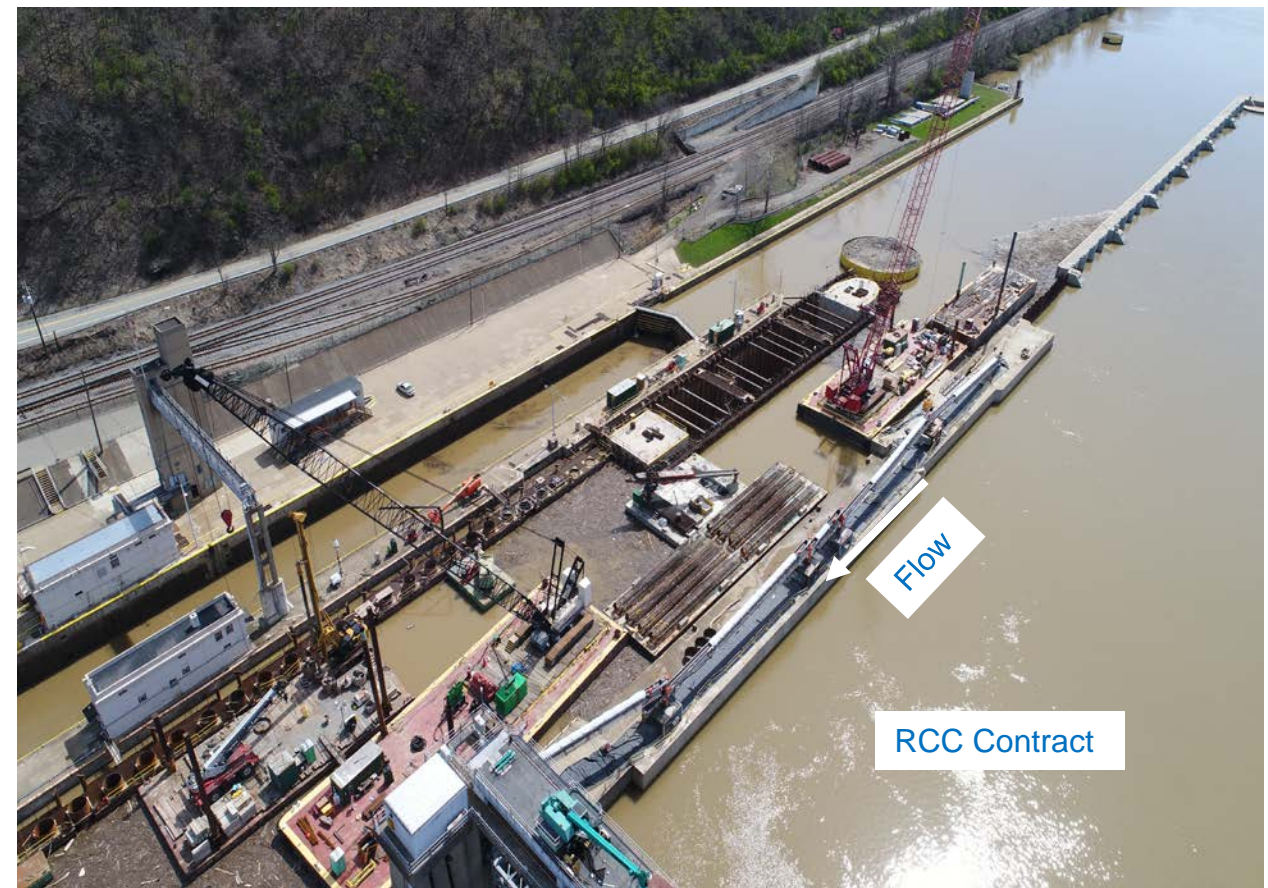
Efficient Funding Profile

FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Total
\$89M	\$59M	\$15M	\$37M	\$0	\$0	\$200M

Profile Assumptions/Comments:

1. Efficient funding at these funding levels
2. Reasonable, but not all, contingency is included
3. Contingency
 - a. Contingency on the \$90% benefits: ~~ \$151M (FY2014)
 - b. Used/Pending: ~~\$28M
 - c. Remaining: ~~\$123M
 - d. Expected/Reasonable Remaining: ~~\$45-\$55M

Discussion



Aerial views of Concrete Batch Plant and Charleroi Lock Construction

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