

Lower Mon Project Update Inland Waterways Users Board Meeting No. 88

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Lower Mon Bottom Line Up Front

- ✓ Current Schedule: **On Schedule**
 - ▶ March 2023 (Early Project Operational, 90% benefits)
 - ▶ January 2024 (Early Project Complete)
- ✓ Current Cost: **On Budget**
 - ▶ TEP – Total Estimated Price, assuming efficient funding, at \$1.12 B, \$1.23 B including all contingencies.
- ✓ Keys:
 1. \$98M was received thru FY2018 work plan.
 2. River Chamber Completion Option 3 to be awarded in FY 2018.
 3. Pool 3 Dredging Task Order # 2 to be awarded in FY 2018.
 4. Charleroi Stilling Basin to be awarded in FY 2018
 5. FY2019 President's budget = \$0, potential remains for cost and schedule growth.
 6. Continue to investigate alternatives to reduce the project's critical path.

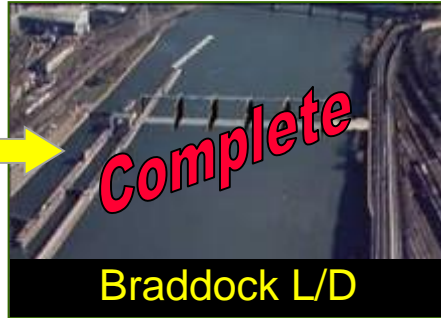
Lower Mon - Project Overview

Pre-Project Condition

Post-Project Condition



L/D 2



Braddock L/D



L/D 3



L/D 3



L/D 4



Charleroi L/D

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 \$1.2 Billion, including contingencies ^{*1}

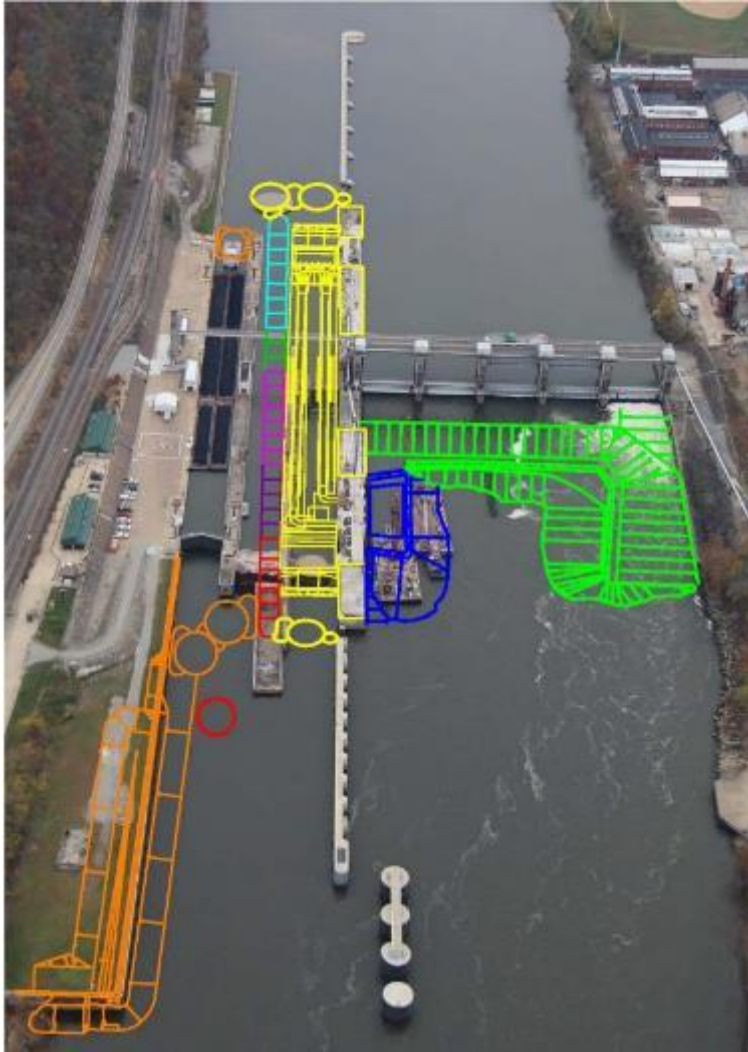
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Lower Mon - Project Schedule

Major Feature Construction	Last Reported Completion (Mar 2018)	Revised ^{*1}
Charleroi M22-M27	FY 2020	
Charleroi Dam Stilling Basin	FY 2021	
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 2018 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	65%
RCC Base	2023	2023	2019	Completed	Sep 15 A	NA	88%
RCC Opt 1	2023	2023	2027	Completed	Aug 17 A	30 Sep 17	12%
RCC Opt 2	2023	2023	2027	Completed	Aug 17 A	30 Sep 18	7%
RCC Opt 3	2023	2023	2027	Nov 17	30 Sep 18	30 Sep 18	NA
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	2021	TBD	Sep 18	Sep 18	NA	NA

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 Dewatered M2-M6 Cofferdbox
2 - M22-M27, Installation of Lower Water in M23/M24 Cofferdbox

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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	\$49,000,000	\$49,000,000	\$98,000,000
FY19 Budget:	NA	\$0	\$0	\$0
Total Allocations to Date:	\$68,261,203	\$428,645,646	\$428,645,652	\$925,552,501
Remaining Balance:		\$154,141,253	\$154,141,247	\$308,282,499
Remaining Balance Change From Last Meeting:				\$ 0

Changes: Revised table to show allocations thru 2014 vice 2013. FY18 Work Plan Funding Approved for \$98 M. Not in FY19 Budget.

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 – **5%** 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.

Note: Red indicates revised from previously reported

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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	FY 2018 S	FY 2021 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 June 18
Planned (BCWS)	\$766.3M	\$689.2M	
Earned (BCWP)	\$672.8M	\$712.1M	
Actual (ACWP)	\$706.2M	\$706.2M	
	CPI = 0.95	CPI 1.01	

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)

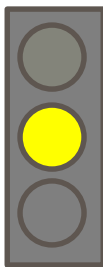
Values shown reflect project sunk cost of \$550.6M thru FY 2014.

EAC = \$1.12B TPC = \$1.23 B

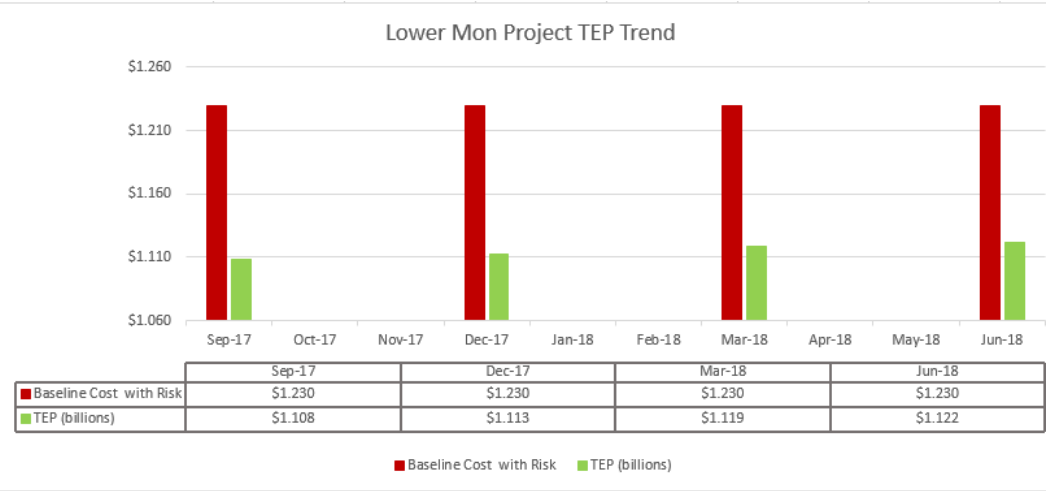
Schedule

(Baseline)/(Current Early) 30 June 18

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



Budget



Major Activity Schedule

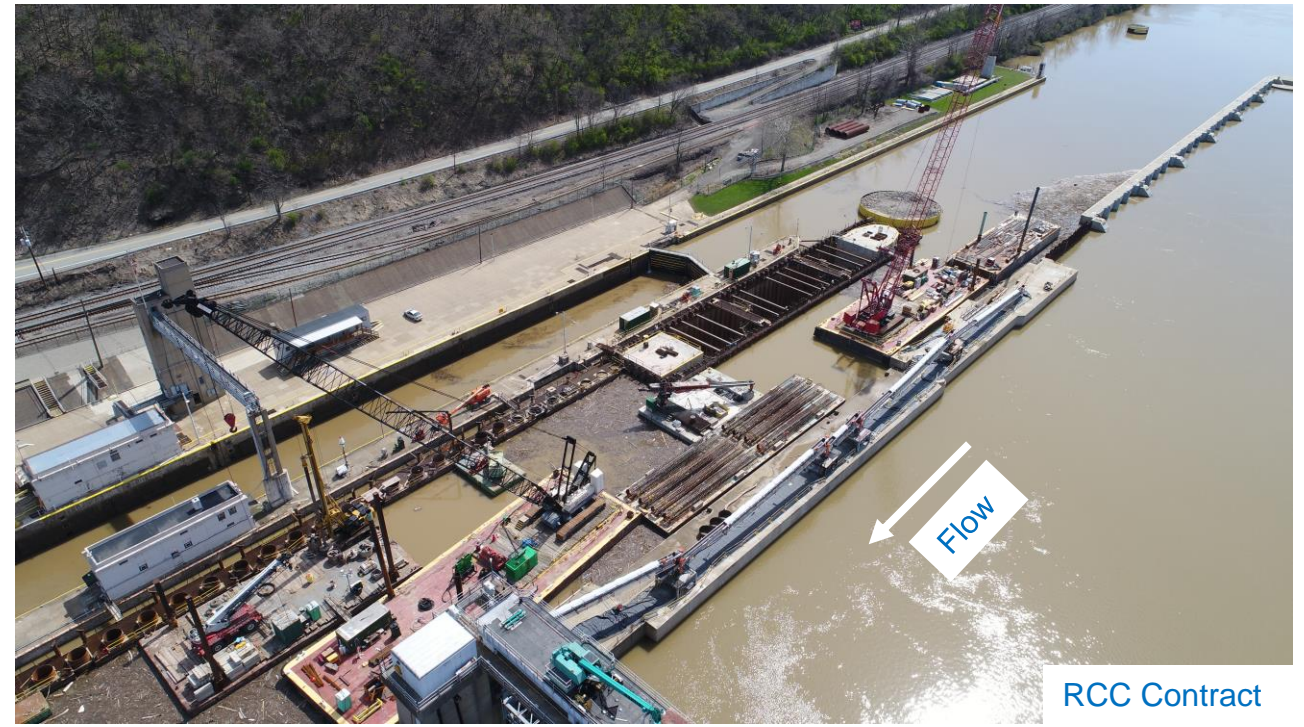
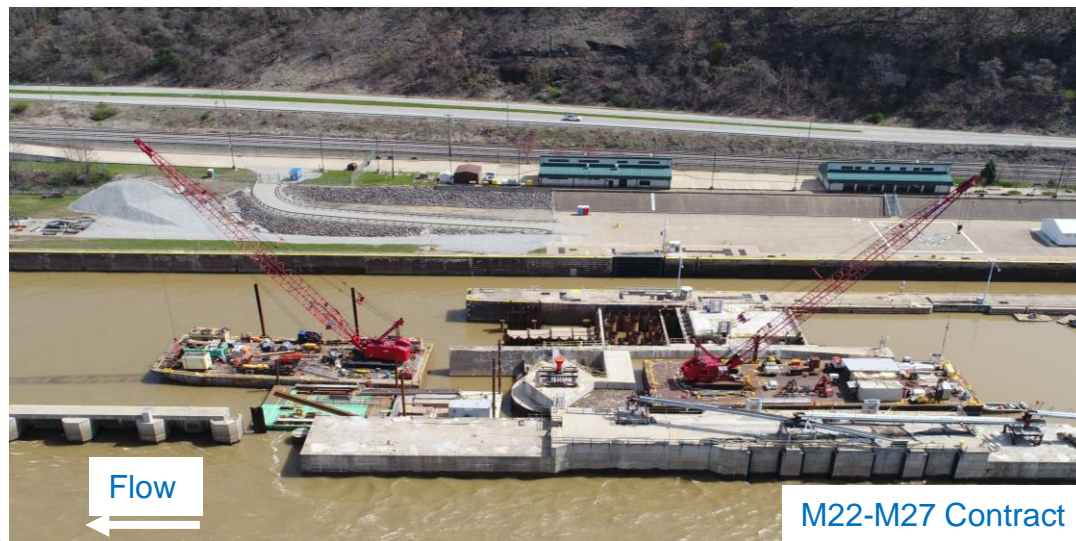
Activity	Baseline	Current
RCC Option 3 Award	Nov 2017	30 Sep 2018*
Dredging Award T.O. 2	30 Sep 2018	30 Sep 2018*
Stilling Basin Award	30 Sep 2018	30 Sep 2018*

*Requires Work Plan Funding

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Discussion



Aerial views of Charleroi Lock Construction

Back Up Slide if Needed

- Not for presentation unless needed



Funding Glide Path and Contingency

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Total
Previous	\$106M	\$72.5M	\$31M	\$16.3M	Not reported thru 2027	Not reported thru 2027	\$225.8M
Revised	\$89M	\$59M	\$15M	\$37M	\$0	\$0	\$200M

Glide Path 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