

Lower Monongahela River 2-3-4 Project Update Inland Waterways Users Board (Meeting No. 90)

FOR Mr. Steve Fritz
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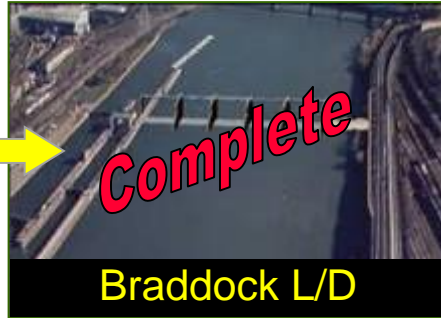
Lower Mon Bottom Line Up Front

- ✓ Current Schedule: **On Schedule**
 - ▶ **May 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 Billion**, **\$1.23 Billion** 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 (FY 2019).
 4. \$89M is approved thru FY 2019 Work Plan.
 5. **FY 2020 President's Budget TBD. 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

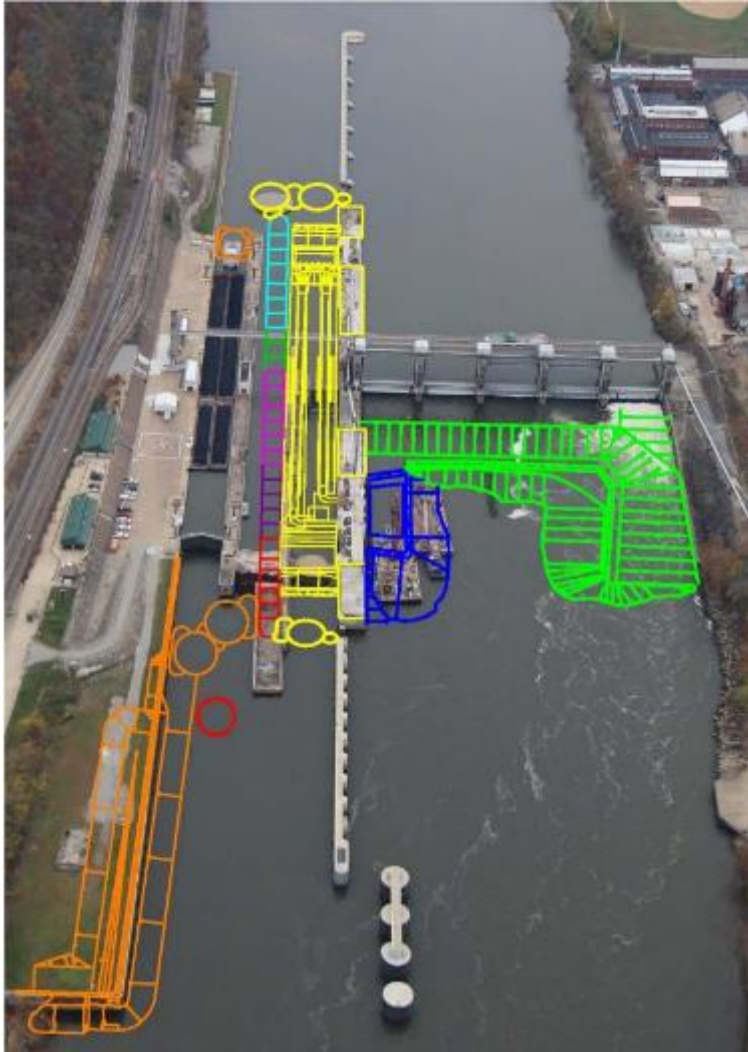
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Lower Mon - Project Schedule

Major Feature Construction	Last Reported Completion (Nov 2018)	Revised
Charleroi M22-M27	FY 2020	Jan 2020
Charleroi Dam Stilling Basin	FY 2022	Nov 2022
Charleroi River Chamber Completion (RCC)	FY 2023	May 2023
Dredging Pool 3	FY 2020	TBD *
Relocations	Variable	May 2023
Lock and Dam 3 Removal	FY 2023	May 2023

* May not be required

Lower Mon – Charleroi Ongoing / Pending Construction Plan



Description	Last Reported Completion	Current Completion (FY19 Work Plan)	Previously Planned Award	Current Planned Award	Option Expires	% Complete
M22-M27	2020	Apr 2020	Completed	Aug 14 A	NA	70%
RCC Base	2023	June 2019	Completed	Sep 15 A	NA	90%
RCC Opt 1	2023	Sep 2020	Completed	Aug 17 A	NA	22%
RCC Opt 2	2023	Oct 2020	Completed	Aug 17 A	NA	10%
RCC Opt 3	2023	Oct 2020	Completed	Sep 18 A	NA	0%
RCC Opt 4	2023	Oct 2022	Dec 18	Jun 19	31 Mar 20	NA
RCC Opt 5	2023	Sep 2023	Nov 20	Sep 20	31 Mar 21	NA
Stilling Basin	2021	Nov 2022	Sep 18	Oct 18 A	NA	5%

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
- Dredging Task Order 3

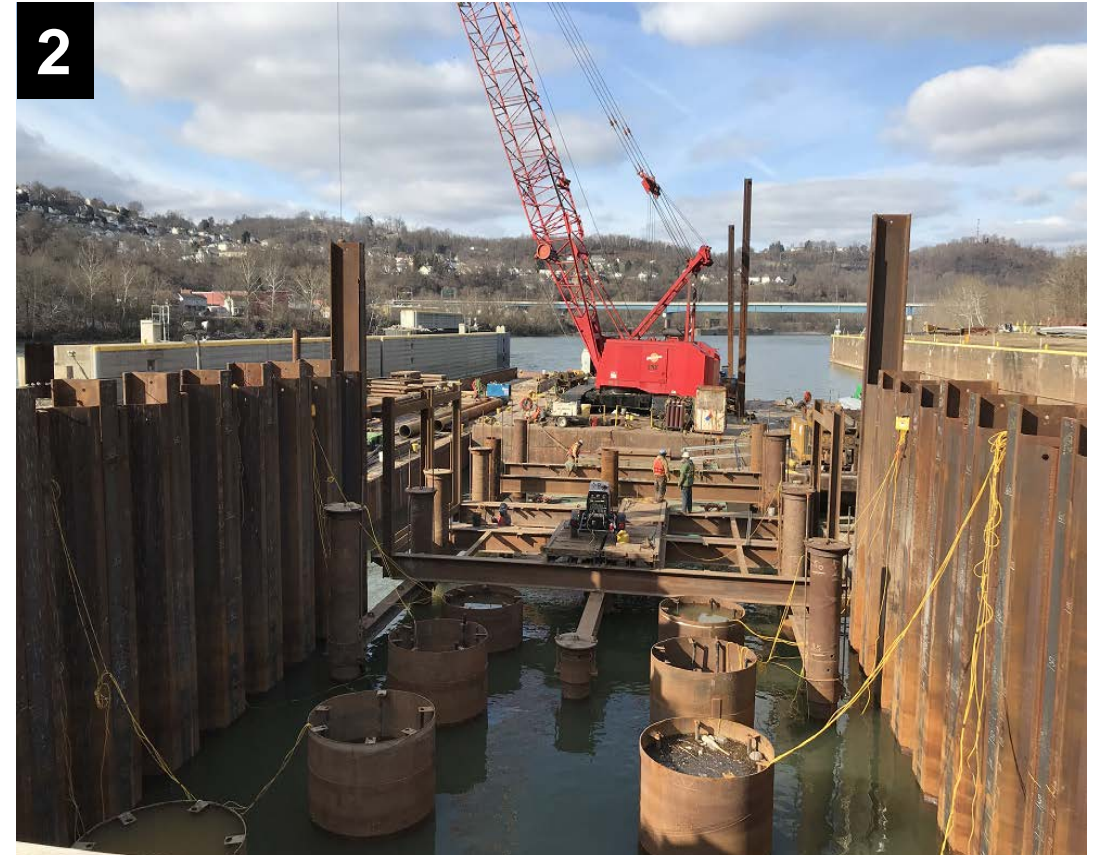
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Charleroi Construction Images



1 - River Chamber Completion Contract, Base Contract M1-M7 last lift at M-5
2 - M22-M27 Contract, M-27 Progress

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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 FY 2014:	\$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 Allocation:	NA	\$44,500,000	\$44,500,000	\$89,000,000
Total Allocations to Date:	\$68,261,203	\$472,295,646	\$472,295,652	\$1,012,852,501
Remaining Balance:		\$110,491,250	\$110,491,250	\$220,982,499
Remaining Balance Change From Last Meeting:				\$ 89,000,000

Changes: N/A

<u>Funding Overview</u>	
• 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

<u>Next Steps</u>
<ul style="list-style-type: none"> • Award RCC Option 4 Award – FY 19 (June) • Evaluate funding risks and consider early award of RCC Option 5
<u>Current Status of the Project</u>
<ul style="list-style-type: none"> • Charleroi M22 – M27 Construction – Plan to de-conflict the option 3 work area implemented, monitoring for success • Charleroi RCC – Base contract substantially complete • Pool 3 Dredging 18% complete

*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	31 Dec 18
Planned (BCWS)	\$801.8M	\$699.0M	
Earned (BCWP)	\$735.7M	\$771.6M	
Actual (ACWP)	\$742.4M	\$742.4M	
	CPI = 0.99	CPI 1.07	

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

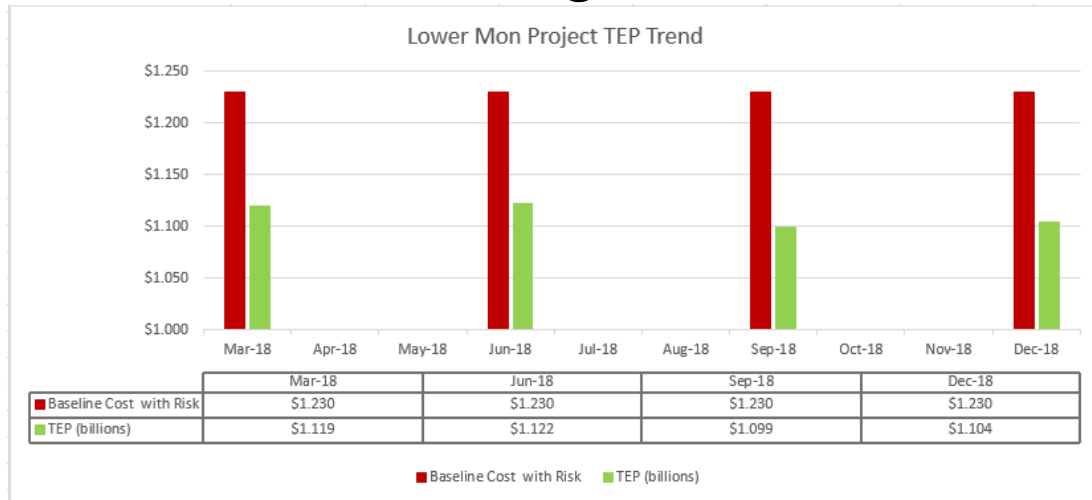
Target:

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 = \$1.10 B TPC = \$1.23 B

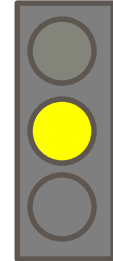
Budget



Schedule

(Baseline)/(Current Early) 31 Dec 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 June 2019
Dredging T.O.3	TBD	TBD

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Efficient Funding Profile

FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Total
\$59.0M	\$15.0M	\$37.0M	\$0	\$0	\$111.0M
\$46.8M	\$8.0M	\$30.4M	\$0	\$0	\$85.2M **

* \$111.0M represents the cost to complete with “reasonable” as opposed to “full” contingency as shown on slide 8.

** \$85.2M represents an additional contingency reduction plan that is currently under consideration.

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 (FY 2014)
 - b. Used/Pending: **\$28.3 M**
 - c. Remaining: **\$121.5M**
 - d. Expected/Reasonable Remaining: ~~\$45-\$55M

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Discussion



Aerial views of Concrete Batch Plant and Charleroi Lock Construction

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