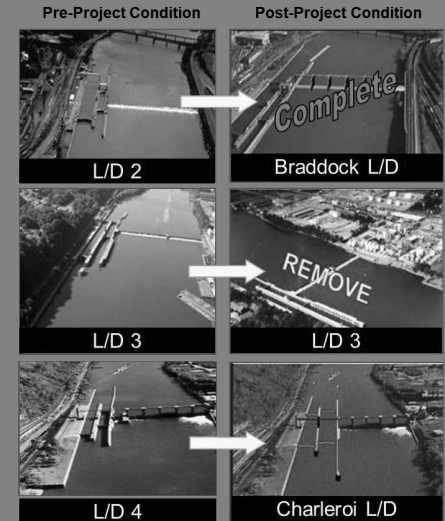


Lower Monongahela River 2-3-4 Project Update Inland Waterways Users Board Meeting No. 92

Mr. Steve Fritz
MEGA Program Manager
Pittsburgh District
Great Lakes and Ohio River Division
12 September 2019



"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."

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Lower Mon Bottom Line Up Front

- ✓ Current Schedule: **On Schedule**
 - ▶ June 2023 (Early Project Operational, 90% benefits)
 - ▶ January 2024 (Early Project Complete)
- ✓ Current Cost: **On Budget**
 - ▶ TEP – Total Estimated Price, assuming efficient funding, at \$1.09 Billion, \$1.23 Billion including all contingencies.
- ✓ Keys:
 1. FY 2020 President's Budget for \$111 Million.
 2. River Chamber Completion Options 4 & 5 awarded 7 June 2019.
 3. Continue to investigate ways to reduce construction congestion at Charleroi.
 4. All foundation drilled shafts for the Charleroi Middle Wall are complete.
 5. Addressing long-term closure on the Charleroi Land Chamber.

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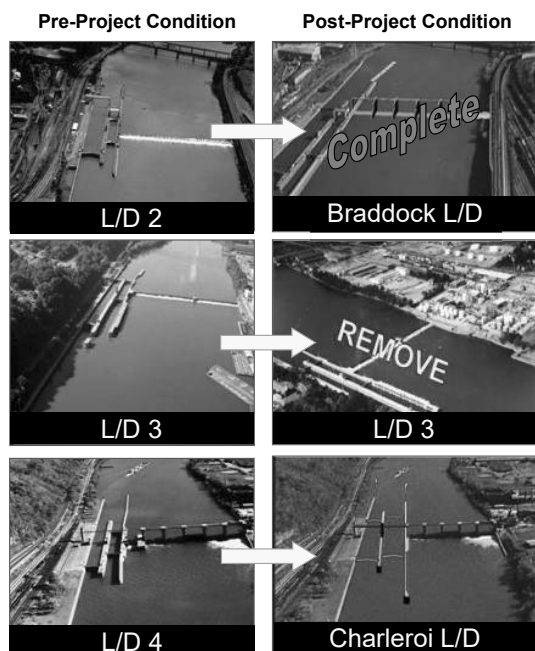
NOTE: Funding & schedule information reported does not include the Charleroi Land Chamber or the Port Perry Bridge relocation.



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Lower Mon - Project Overview



Major Project Features

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

Financial

- 902 Limit: \$1.76 Billion
- Current Estimate at Completion \$1.09 Billion, including reasonable contingencies *1

*1 does not include Land Chamber nor Port Perry Bridge

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Lower Mon - Project Schedule

Major Feature Construction	Last Reported Completion (May 2019)	Revised
Charleroi M22-M27	Jun 2020	
Charleroi Dam Stilling Basin	Nov 2022	
Charleroi River Chamber Completion (RCC)	Oct 2023	
Dredging Pool 3 TO 3 Award	TBD	Nov 2019
Relocations	Variable	
Lock and Dam 3 Removal	Oct 2023	

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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	Jan 2020	Completed	Aug 14 A	NA	79%
RCC Base	2023	Oct 2023	Completed	Sep 15 A	NA	99%
RCC Opt 1	2023	Oct 2023	Completed	Aug 17 A	NA	65%
RCC Opt 2	2023	Oct 2023	Completed	Aug 17 A	NA	35%
RCC Opt 3	2023	Oct 2023	Completed	Sep 18 A	NA	12%
RCC Opt 4	2023	Oct 2023	Dec 18	Jun 19 A	NA	0%
RCC Opt 5	2023	Oct 2023	Nov 20	Jun 19 A	NA	0%
Stilling Basin	2021	Nov 2022	Sep 18	Oct 18 A	Nov 2021	6%

Notes:

- Risk informed RCC completion is 2027

• Remaining project features not shown on this slide:

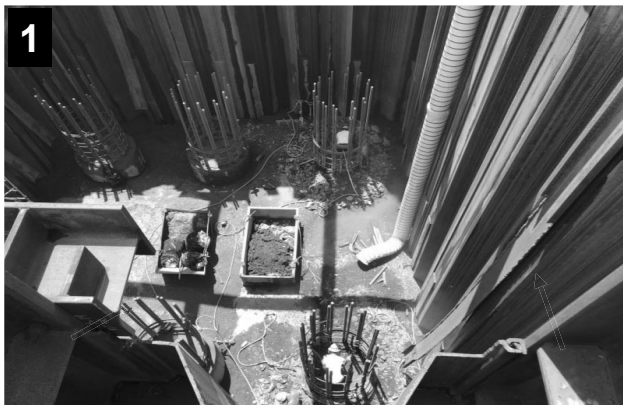
- Pool Clearing (FY21 planned award)
- Lock and Dam 3 Removal (FY21 planned award)
- Relocations
- Dredging Task Order 3

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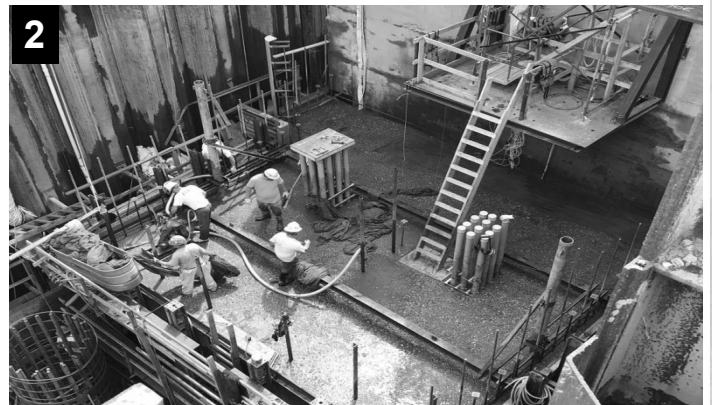
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Charleroi Construction Images



1 – River Chamber Completion Contract, M11 Drilled Shafts



2 – M22-M27 Contract, M23 Lift 3

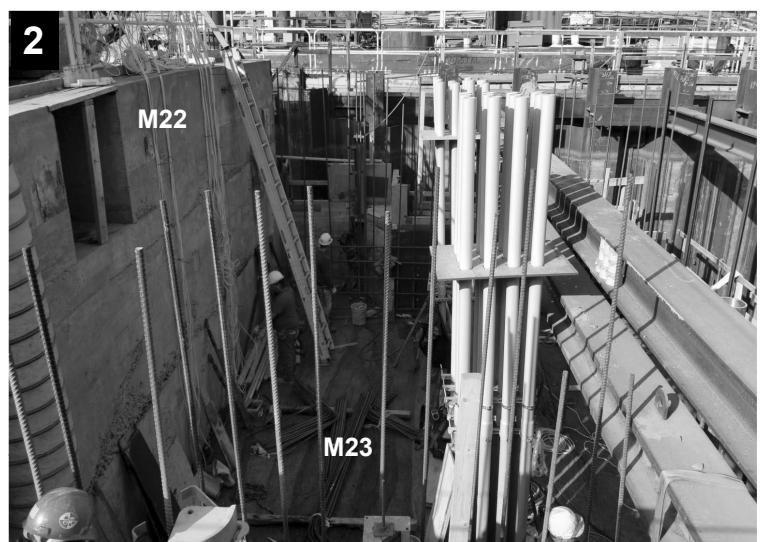


3 – Dredged Material Placement at Victory Hollow

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Charleroi Construction Images



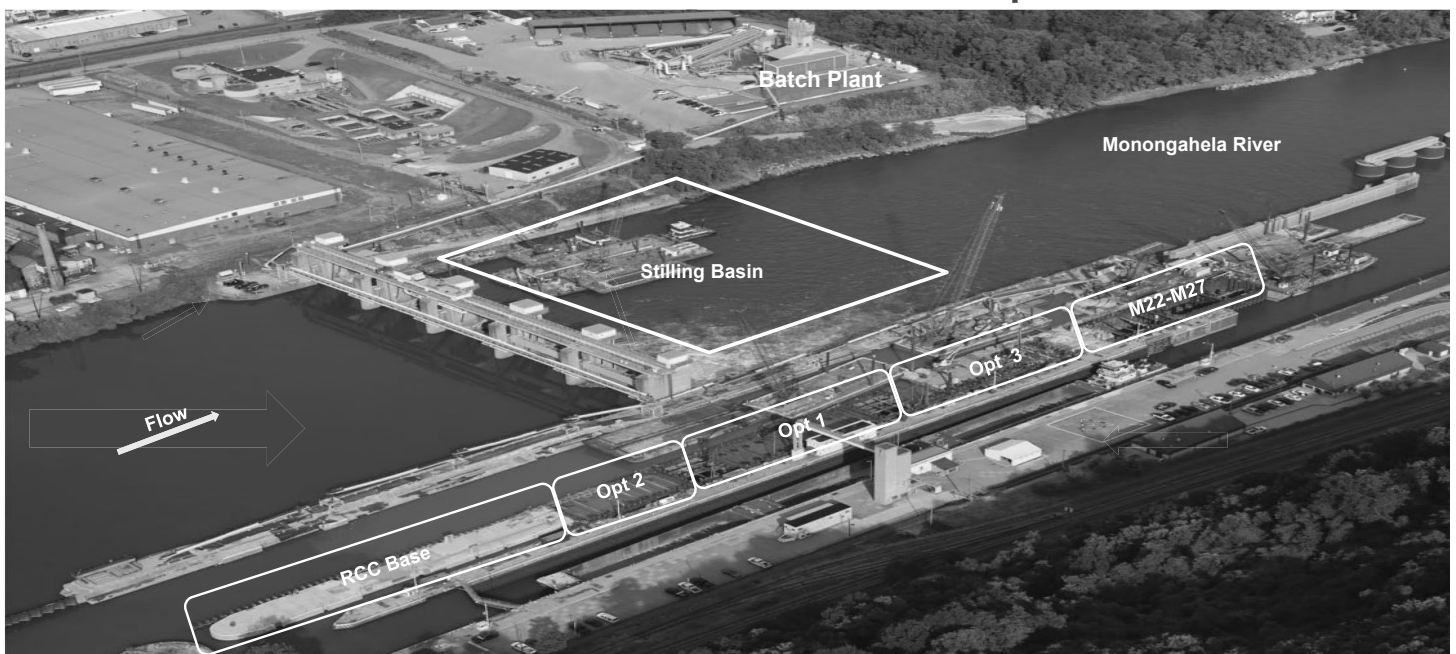
1 – RCC Contract, substantially completed Base and Drilled Shafts in Options 1 & 2
 2 – M22-M27 Contract, M22 and M-23 Lift 3

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Charleroi Overall Construction Footprint



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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 FY2016:	\$68,261,203	\$338,640,646	\$338,640,652	\$745,542,501
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	\$44,606,606	\$44,606,606	\$89,213,213
FY20 Budget: (\$111 M, not yet allocated)	NA			TBD
Total Allocations to Date:	\$68,261,203	\$472,402,253	\$472,402,258	\$1,013,065,714
Remaining Balance:		\$110,384,643	\$110,384,643	\$220,769,286
Remaining Balance Change From Last Meeting:				

Changes:

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

- Award Pool 3 Dredging (FY 2020) Task Order #3

Current Status of the Project

- Charleroi M22 – M27 – Placing mass concrete in M23 and M24
- Charleroi RCC – All options awarded. All middle wall drilled shafts are complete.
- Pool 3 Dredging 37% 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 2023 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 2024 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.

4. Charleroi dam stilling basin completion is scheduled for November 2022.

Actual

"S"= Scheduled

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Lower Monongahela River Project Time and Cost Scorecard (Data Date 30 June 2019)

Expenditures

	No Contingency	Contingency Included
Planned (BCWS)	\$837.3M	\$706.7M
Earned (BCWP)	\$755.9M	\$820.1M
Actual (ACWP)	\$776.4M	\$776.4M

CPI = 0.97

CPI 1.06

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.

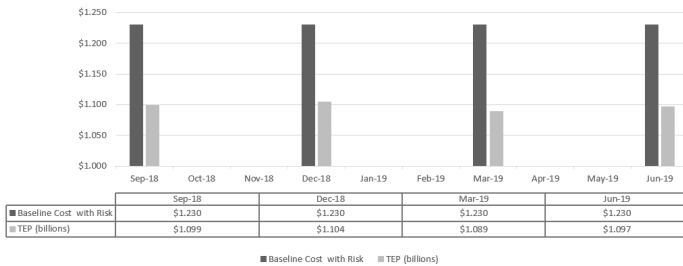
EAC = \$1.10 B TPC = \$1.23 B

Schedule

(Baseline)/(Current Early)

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

Lower Mon Project TEP Trend



Major Activity Schedule

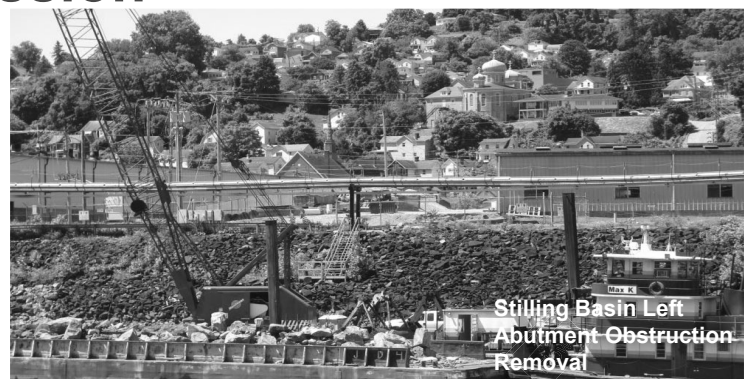
Activity	Baseline	Current
RCC Option 4 Award	31 July 2019	7 Jun 2019 (A)
RCC Option 5 Award	30 Sep 2019	7 Jun 2019 (A)
Dredging T.O.3	30 Sep 2019	30 Nov 2019
Middle Wall Complete	29 Feb 2021	29 Feb 2021

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Discussion



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