

Locks and Dams 2, 3, and 4 Monongahela River, PA (Lower Mon Project) Inland Waterways Users Board

MR. DAVID DALE, PE, PMP, SES

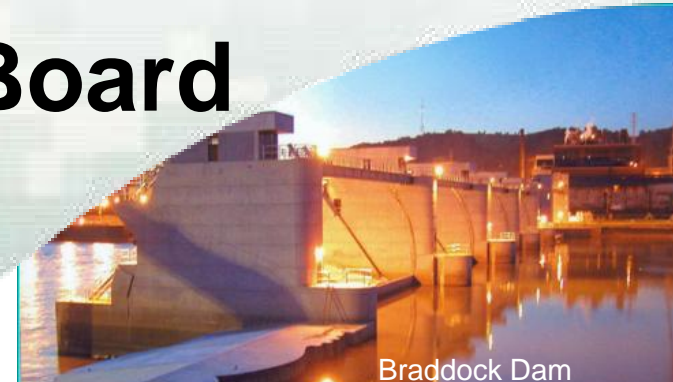
DIRECTOR, Programs

Great Lakes & Ohio River Division

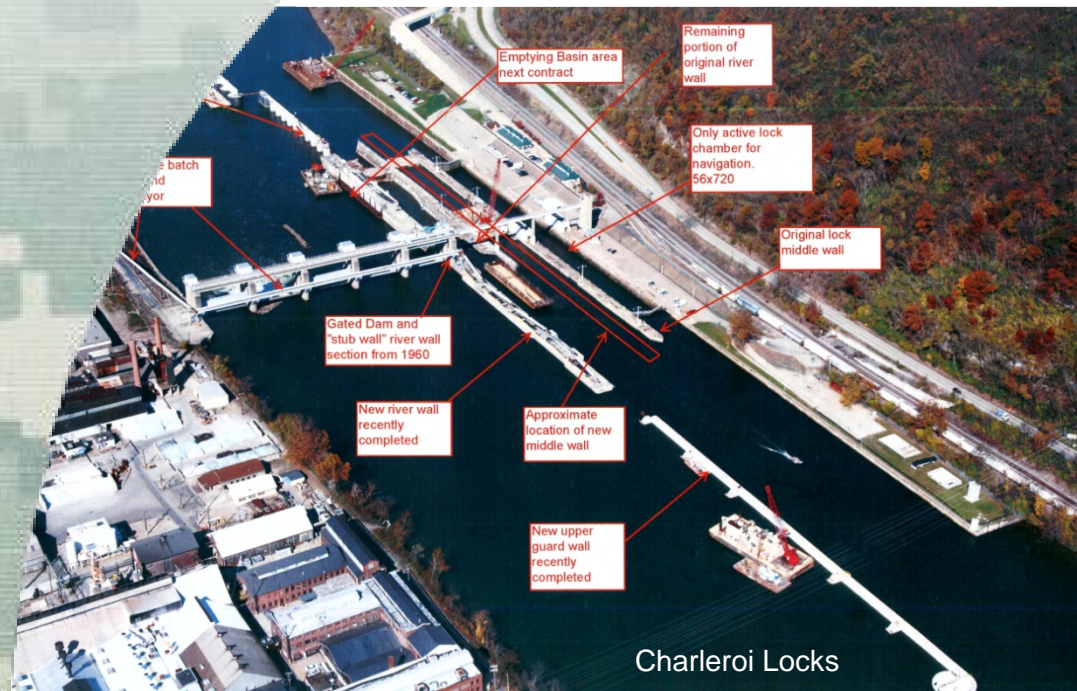
1 April 2016



US Army Corps of Engineers
BUILDING STRONG®



Braddock Dam



Charleroi Locks

Agenda

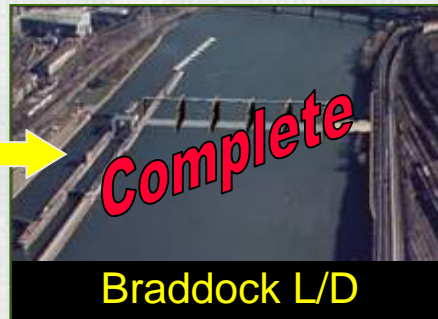
- **Project Overview**
- **Schedule**
- **Ongoing Construction at Charleroi**
- **Images of Charleroi Construction**
- **Scorecard**
- **“S” Curve**
- **Challenges**
- **Discussion**



Lower Mon - Project Overview

Pre-Project Condition

Post-Project Condition

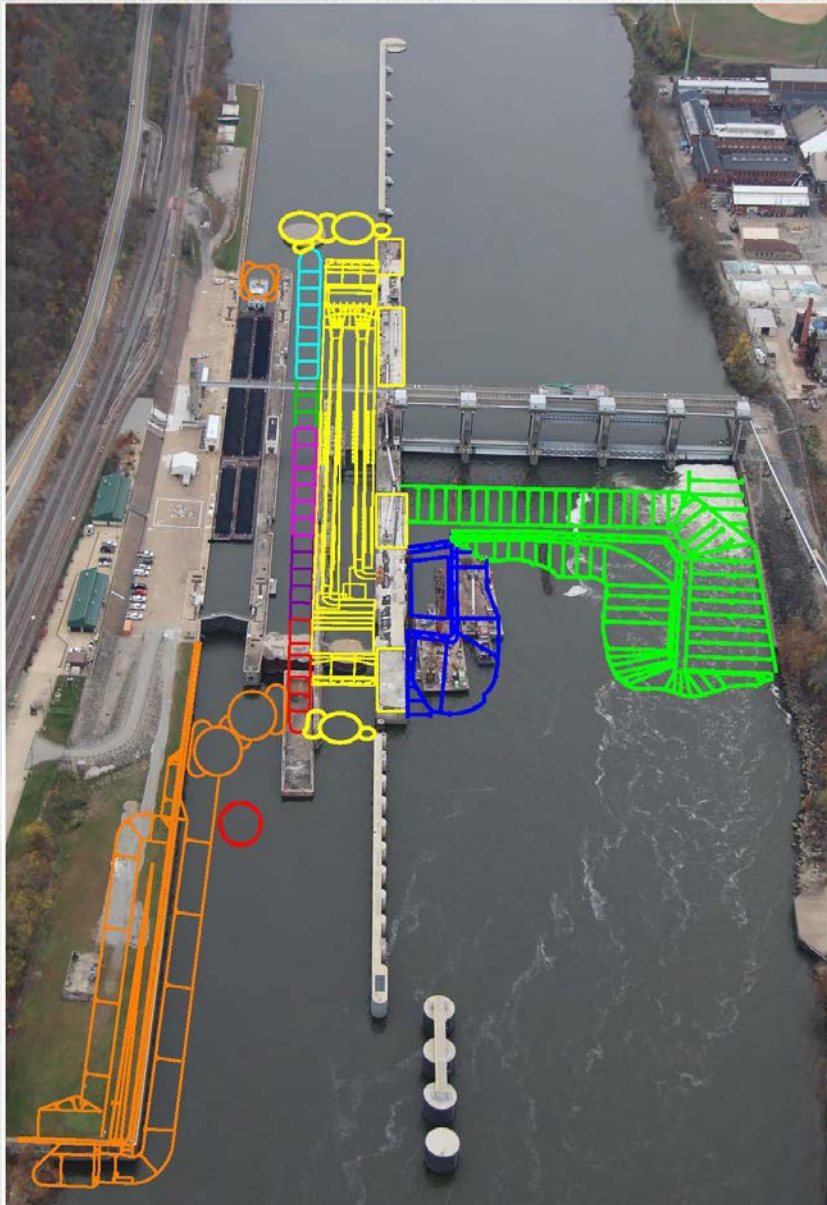


■ Major Project Features

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



Lower Mon – Charleroi Ongoing / Pending Construction (Plan - Visual)



- Emptying Basin – Planned Complete FY 2016 (Physically complete)
- M22-M27 – Planned Complete FY ~~2018~~ 2019 (24% complete)
- RCC – Base Contract (M1-M7) Planned Complete FY 2022 (8% complete)
- RCC – Option 1 (M11-M16) Planned Complete FY ~~2022~~ 2026
- RCC – Option 2 (M8-M10) Planned Complete FY ~~2022~~ 2026
- RCC – Option 3 (M17-M21) Planned Complete FY ~~2022~~ 2026
- RCC – Option 4 (In-Chamber) Planned Complete FY ~~2022~~ 2026
- RCC – Option 5 (Chamber-Operational) Planned Complete FY ~~2022~~ 2026
- Stilling Basin – Planned Completion FY 2021

Notes:

Revised dates shown reflect \$0 Funding in FY2017

Completion date of the Charleroi River Chamber could be as late as 2027 if not awarded efficiently

Remaining project features not shown on this slide:

- Dredging
- Pool Clearing
- Lock and Dam 3 Removal
- Relocations



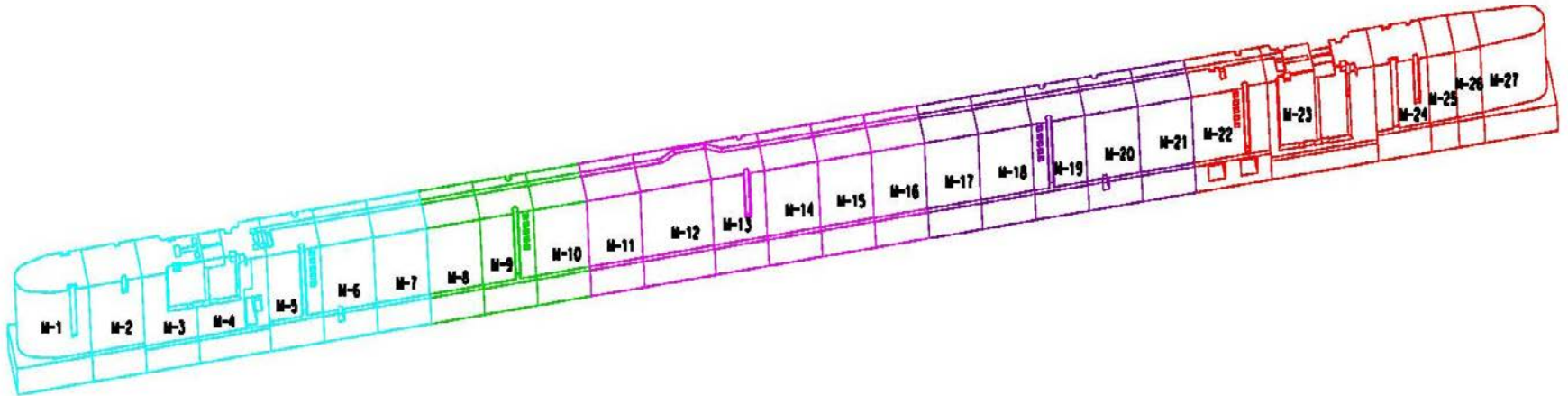
Lower Mon - Project Schedule

Major Feature Construction	Last Reported Completion (Dec 2015)	Revised
Charleroi River Wall	FY 2016	
Charleroi Dam Emptying Basin	FY 2016 (Actual)	
Charleroi M22-M27	FY 2018	FY 2019
Charleroi Dam Stilling Basin	FY 2021	
Charleroi River Chamber Completion	FY 2022	FY 2026
Dredging Pool 3	FY 2022	FY 2026
Relocations	Variable	
Lock and Dam 3 Removal	FY 2023	FY 2027

- This chart depicts the early schedule based on the revised Olmsted cost share, the projected increase in IWTF revenue, and the Lower Mon remaining the second priority for inland navigation construction, and efficient funding resuming in FY 2018 (FY2017 budget = \$0)
- Specific relocations are associated with pool changes so their timing is variable



Lower Mon – Charleroi Middle Wall (Isometric)



- M22-M27 – Planned to Complete in FY 2019 - (24% complete)
- RCC – Base Contract (M1-M7) Planned to Complete in FY 2022 – (8% complete)
- RCC – Option 1 (M11-M16) Planned to Complete in FY 2022 2026
- RCC – Option 2 (M8-M10) Planned to Complete in FY 2022 2026
- RCC – Option 3 (M17-M21) Planned to Complete in FY 2022 2026

Notes:

Isometric view only depicts middle wall component of the construction which includes the Base and Options 1, 2, and 3. Option 4 and Option 5 not shown in isometric view.

Revised dates shown reflect \$0 Funding in FY2017

Completion date of the Charleroi River Chamber could be as late as 2027 if not awarded efficiently



Charleroi Construction Images



Emptying Basin Contract: 1 – Tremie infill under submerged emptying basin segments. **M22-M27 Contract:** 2 – Prepping for drilled shaft concrete placement; 3- Drilled shaft reinforcing cage



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

Time and Cost Scorecard – Thru August 2015

Expenditures

Planned (BCWS) \$ 591.8 M
 Earned (BCWP) \$ 588.6 M
 Actual (ACWP) \$ 584.6 M

Target: Actual as compared to Planned: (<5% = Green); (>5% and <10% = Yellow); and (>10% = Red)

Values shown reflect project sunk cost of \$550.6M thru FY 2014 and Current data thru December 2015
 CPI=1.01

Schedule

(Baseline)/(Current Early)

~~Operational~~ (Realize over 90% of project Benefits) ~~2027 / 2022~~ *

Operational (Realize over 90% of project Benefits) 2027 / 2026

Project Complete 2029 / 2028

* Slipped due to zero funding in 2017

Estimated Cost at Completion

>90% benefits
 BAC(FF) \$1.22 B
 EAC(FF) \$1.21 B

Estimated from revised cost and schedule forecast fully funded thru 2029 and estimated costs thru FY 2015, not certified

Reserve Balances (FF): \$540M
 Project Contingency \$ 0.151 Billion
 Sunk Cost (thru Dec 2015): \$ 0.584 Billion
 Contingency

Used: \$9.2M (6%)
 In process: \$22.6M (15%)
 Total: \$31.7M (21%)

Milestones Status for the Next 6 Months

Concrete Production Obligation: Base awarded December 2015

Award for RCC Option 1 and Concrete Option 1: September 2016 (Basic Schedule)

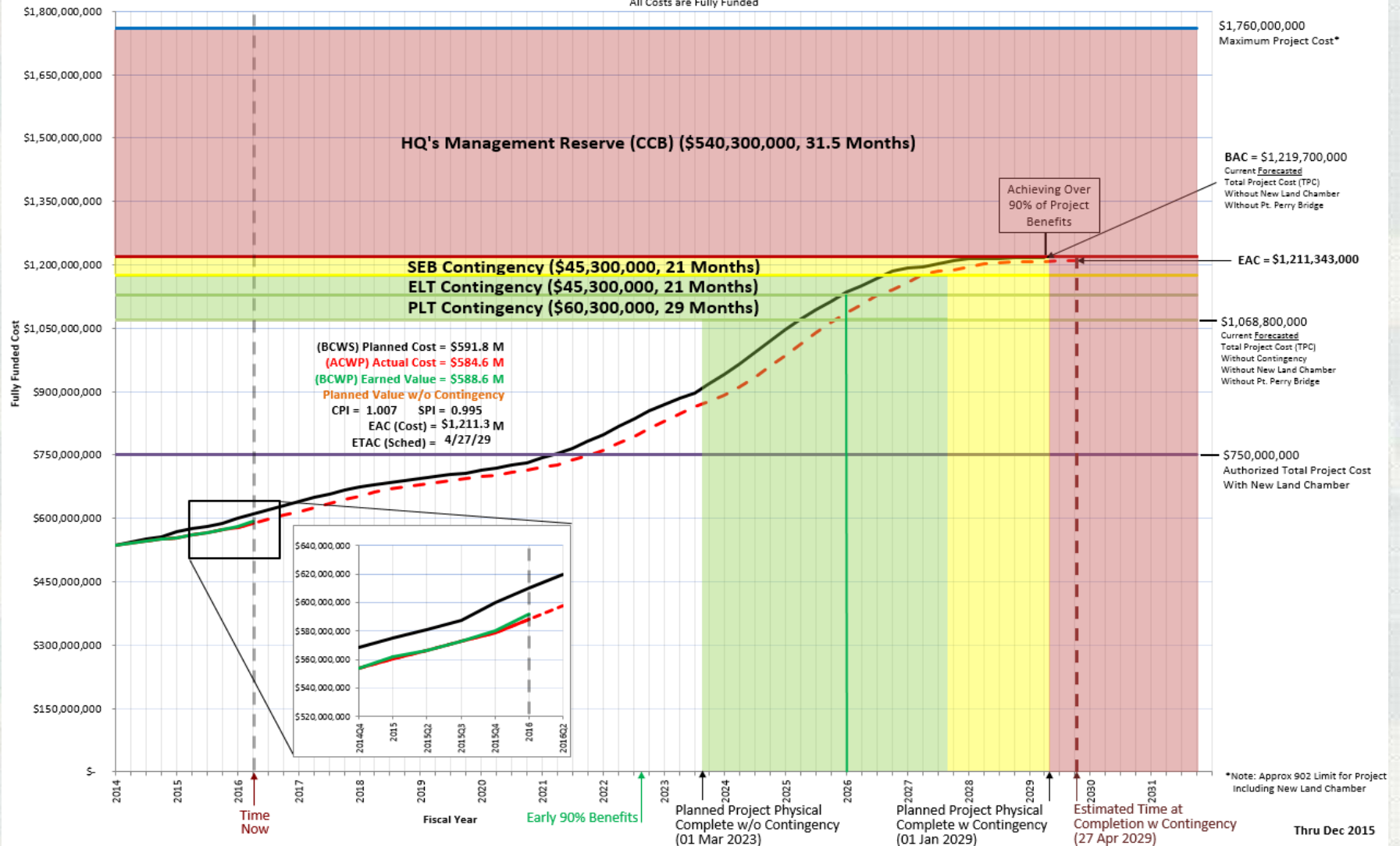
Developing Courses of Action for FY17 Budget Impacts and FY16 Modifications on FY16 Awards

		Gantt Chart												01-Feb-16	
Activity Name	Activity ID	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
RCC Option 1 Award (LRD CW802)	RCC 24221														
RCC Concrete Production - Option 1 Obligation MS	RCC CONC OPT1 MS														

Lower Mon “S” Curve

Lower Monongahela River Project Baseline Estimate

Based on Revised Funding Conditions
Without New Land Chamber and Port Perry Bridge
All Costs are Fully Funded



Future Challenges

- **Most Efficient Schedule & Funding**
 - **FY2017 President Budget implications and way ahead**
 - **Continue to move project schedule left at every opportunity**
 - **Funding available when needed**
- **Site constraints/impacts at Charleroi and/or Victory Hollow**
 - Emptying Basin Contract (completed)
 - M22-M27 Contract
 - River Chamber Completion Contract
 - Dredging Contract (2021 contract start)
 - Stilling Basin Contract (2018 contract start)



Lower Mon – Discussion/Questions

