

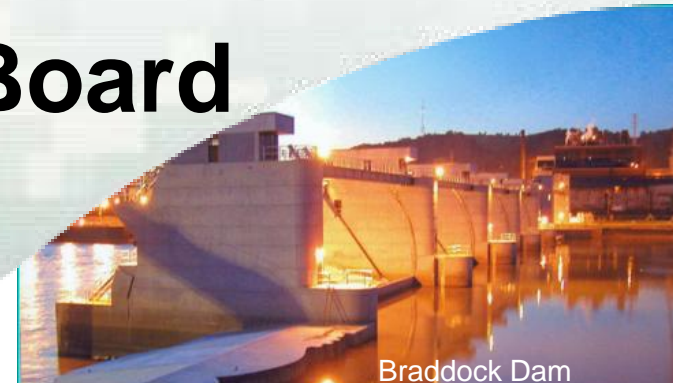
# Locks and Dams 2, 3, and 4 Monongahela River, PA (Lower Mon Project) Inland Waterways Users Board

MR. DAVID DALE, PE, PMP, SES

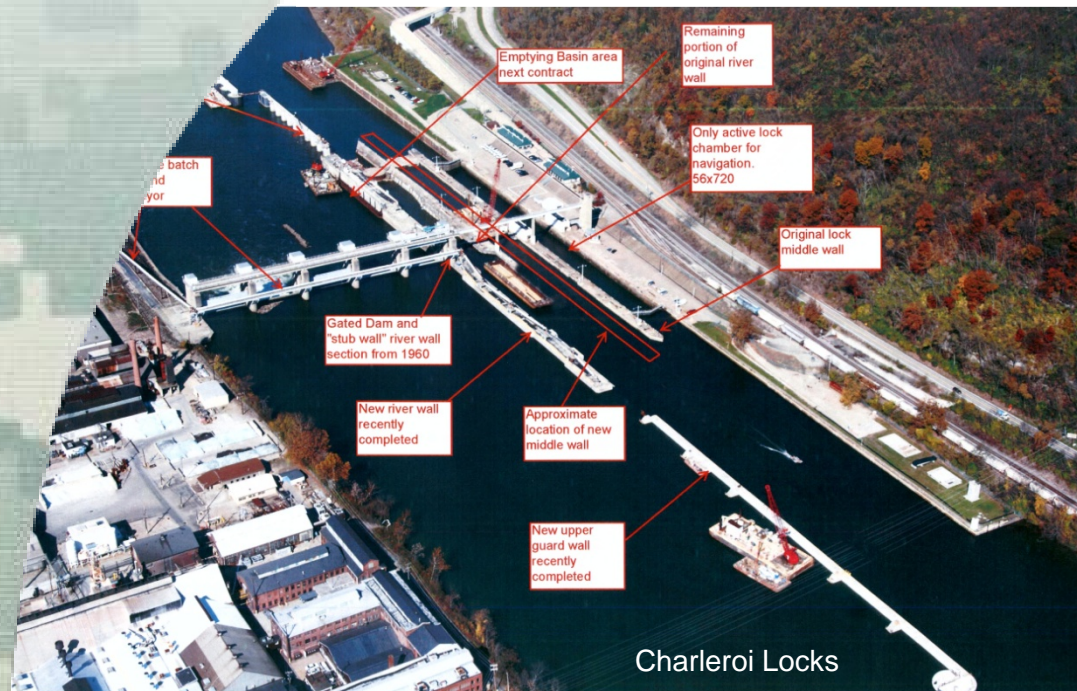
DIRECTOR, Programs

Great Lakes & Ohio River Division

14 May 2015



Braddock Dam



Charlevoix Locks



US Army Corps of Engineers  
**BUILDING STRONG**

# Agenda

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



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

Total Project Cost: \$2,733M*	ARRA	CG	IWTF	Total
FY13 Allocation:	\$1,510,007	\$11,093,652	\$11,093,652	\$23,697,311
FY14 Allocation:	\$0	\$36,336,500	\$36,336,500	\$72,673,000
FY15 Allocation:	\$(50,711)	\$28,016,000	\$28,016,000	\$55,981,289
FY16 Budget:	\$0	\$26,000,000	\$26,000,000	\$52,000,000

Remaining Balance:		\$997,149,337	\$997,149,337	\$1,994,298,674
Remaining Balance Change From Last Meeting				NA

Notes: None

## Changes

- No changes since last update

## Funding Overview

- Original Authorized Cost: \$556M
- 902 Limit: \$1.76B
- ARRA Funding (FY09-FY14): \$68.4M
- Engineering & Design Cost: \$603M \*
- Supervision & Admin Cost: \$207M
- Mitigation: \$12M

\* \$603M includes all Engineering & Engineering During Construction

## Next Steps

- Award Charleroi River Chamber Completion (Base plus Options) Contract in FY2015 – **On Schedule**

## Current Status of the Project

- Charleroi Emptying Basin Construction – On Schedule
- Charleroi M22-M27 Construction – On Schedule



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## Lower Mon - Project Costs (\$million)

Total Project	As Authorized	Without Land Chamber	Without Port Perry Bridge	Without Either
Authorized Cost (1992)	\$556	\$531	\$531	\$506
Authorized Cost Inflated (Oct 2014)	\$1,018	\$997	\$1,012	\$940
Certified Cost Estimate (Oct 2014)*1	\$1,661	\$1,203	\$1,584	\$1,126
Fully Funded Cost Estimate (Oct 2014)	\$2,773	\$1,395	\$2,625	\$1,287

- Project 902 Limit: \$1,761,250,000
- Certified cost estimate (\$2,773 M Fully Funded)
  - Certified March 2014 @ the Oct 2014 Price Level
  - Certification predated Olmsted cost share and IWTF revenue structure changes
  - Includes IWTF revenue & Olmsted schedule restrictions which adds \$185 million in escalation
  - Includes Charleroi Land Chamber deferment which adds \$797 million in escalation
- Estimated allocations thru FY 2015 - \$687 million
- Estimated sunk costs (investments) thru FY 2015 - \$579 million

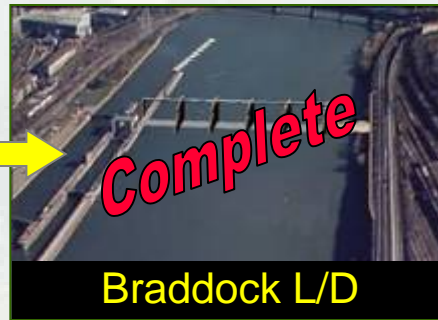
\*1-This new slide reflects estimated project costs if the Port Perry Rail Road Bridge and the Charleroi Land Chamber were not constructed. These “reduced costs” were not certified, but rather, the costs of these features were deducted from the from the total certified cost .



# 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

DONE



## Lower Mon - Project Schedule

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

- Revised schedule based on WRRDA 2014 implementation of Olmsted cost share and Lowermon Project as next priority and the expectation of efficient funding
- Specific relocations are associated with pool changes so their timing is variable
- Charleroi Land Chamber has been removed from this slide.



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

Schedule of Remaining Work	Design Initiated	Contract Award	Construction Complete *3	Project Benefits*4	Capitalized Cost Closeout*4
Charleroi River Wall	1-Oct-95	27-Sep-04	14-Dec-15 S	2028	2030
Charleroi Emptying Basin	1-Oct-95	30-Sep-13	26-Dec-15 S	2028	2030
Charleroi River Chamber (M22-M27)	1-Oct-95	15-Aug-14	December 2018	2028	2030
Charleroi Dam Stilling Basin	1-Oct-95	FY 2018 S	FY 2022 S	2028	2030
Charleroi River Chamber Completion	1-Oct-95	FY2015 S	FY 2022 S	2028	2030
L/D 3 Removal	2020	2021 S	FY 2023 S	2028	2030
Dredging	1-Oct-95	2017 S	FY 2022 S	2028	2030
Municipal Relocations *1	1-Oct-95	Multiple	Multiple	NA	2030
Port Perry Bridge Relocation	1-Oct-95	Deferring	NA	NA	
Charleroi Land Chamber *2	TBD	Deferring	NA	NA	

\*1: To complete all municipal relocations, multiple relocation agreements are required.

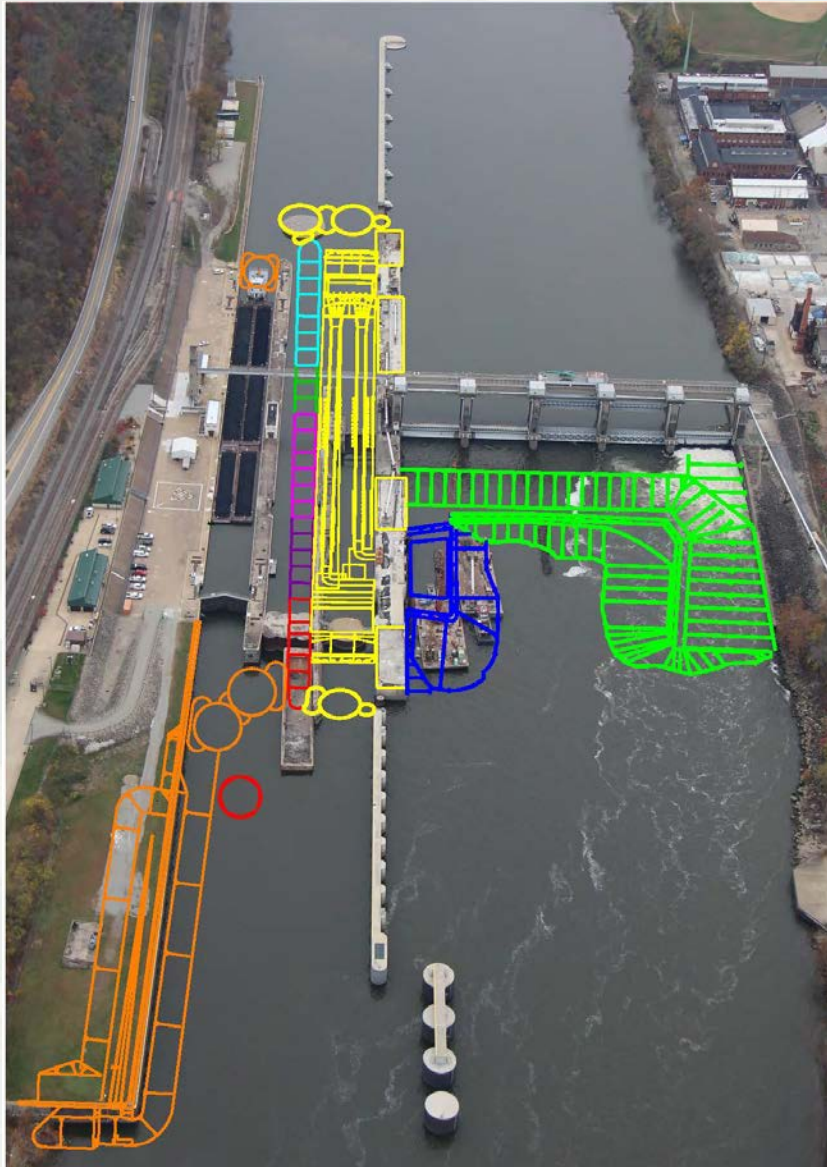
\*2: Over 90 % of project benefits can be achieved without constructing the Charleroi Land Chamber.

\*3 Dates are achievable based on an efficient funding profile.

\*4: **Project benefit and close out dates are based on the certified cost and schedule with the assumption that the Port Perry Bridge and the Charleroi Land Chamber will not be constructed. These dates can be approximately 5 years earlier (2023 and 2025, respectively) if an efficient funding profile is maintained.**



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

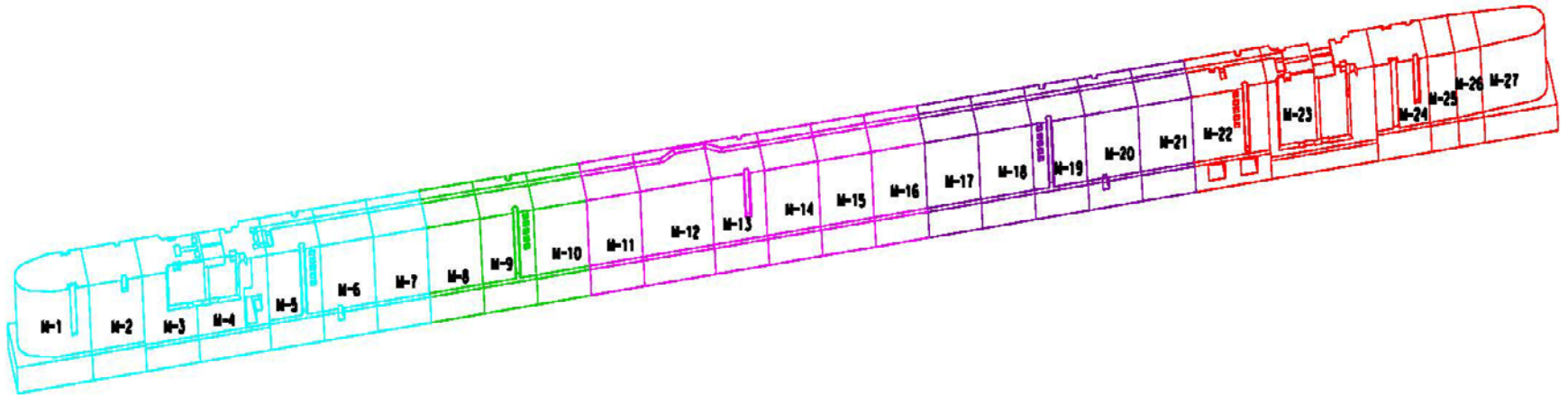







- Emptying Basin – Planned Complete FY 2016
- M22-M27 – Planned Complete FY 2018
- RCC – Base Contract (M1-M7) Planned Complete FY 2022
- RCC – Option 1 (M11-M16) Planned Complete FY 2022
- RCC – Option 2 (M8-M10) Planned Complete FY 2022
- RCC – Option 3 (M17-M21) Planned Complete FY 2022
- RCC – Option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

Completion date of the Charleroi River Chamber could be as late as 2039 if not awarded efficiently



# Lower Mon – Charleroi Middle Wall (Isometric)



-  M22-M27 – Planned to Complete in FY 2018 (Under Contract)
-  RCC – Base Contract (M1-M7) Planned to Complete in FY 2022
-  RCC – Option 1 (M11-M16) Planned to Complete in FY 2022
-  RCC – Option 2 (M8-M10) Planned to Complete in FY 2022
-  RCC – Option 3 (M17-M21) Planned to Complete in FY 2022

Option 4 and Option 5 not shown in isometric view.

Completion date of the Charleroi River Chamber could be as late as 2039 if not awarded efficiently



# Charleroi Construction Images



Emptying Basin Contract: 1 - Pre-Cast Basin Units; 2 - Foundation Drilled Shafts .  
M22-M27 Contract: 3 - Emergency Generator Pad Reinforcement; 4 - Emergency Generator Platform



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

## Time and Cost Scorecard – Thru Jan 2015



### Expenditures

Planned (BCWS)           \$554.3 M  
 Earned (BCWP)         \$ 565.5 M  
 Actual (ACWP)         \$ 563.1 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 March 2015



### Schedule

*(Baseline)/(Current Early)*

Overall Project Completion           2071 / 2061  
 Realize over 90% of project Benefits   2039 / 2023

Reserve Balances (estimated):  
 -Contingency to >90% of benefits:   95 Months  
 -Management Reserve not yet determined

Opportunity to move project benefits to the left due to Olmsted cost share revision and an increase in the fuel tax

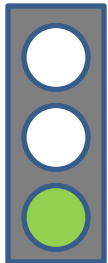


### Estimated Cost at Completion

**>90% benefits**      Total project  
 BAC(FF)   \$1.40 B      \$ 2.73 B  
 EAC(FF)   \$1.40 B      \$ 2.73 B

*Based on CSRA and Cost to Date*

Reserve Balances (FF):  
 Estimated Cost           \$ 2.73 B  
 Project Contingency     \$ 0.464 Billion  
 Sunk Cost (thru FY14) \$ 0.55 Billion



### Milestones Status for the Next 6 Months

J&A for concrete production DOC Approval: **Approved**  
 Acquisition Plan PARC Approval: **Approved**  
 Real Estate Risk Memos: **Approved**  
 Charleroi River Chamber Completion RTA: **23 Apr 2015 – Actual completion 23 April 2015**  
 Advertise River Chamber Completion: **June 2015**

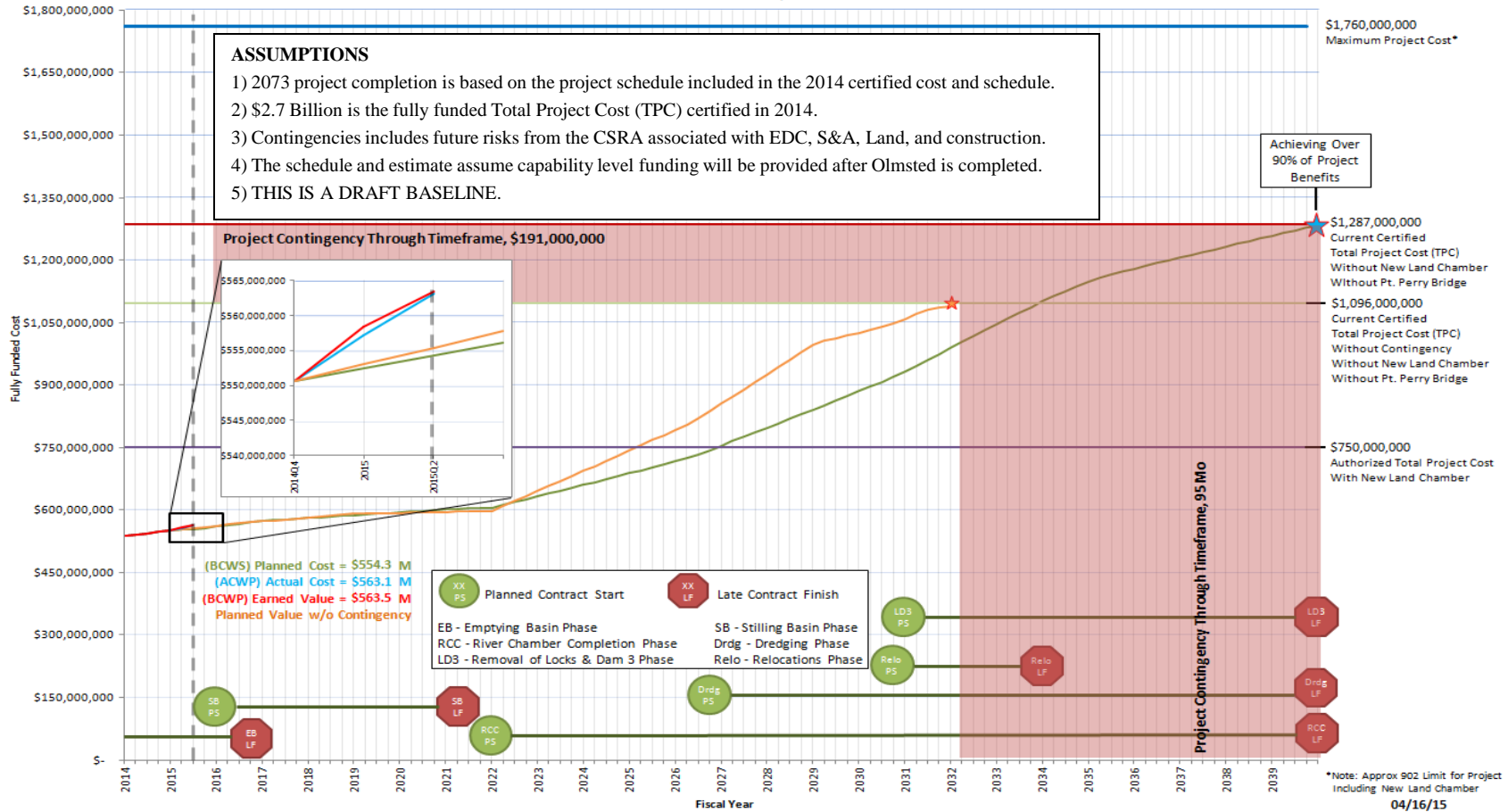
		Gantt Chart												06-Apr-15
		2015												2016
Activity Name	Activity ID	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
RCC RTA (LRD CW400)	RCC 19620			◆ 23-Apr-15										
Open bids	RCC 19820							◆ 03-Aug-15						
Award (Early) Milestone	RCC 23920									◆ 31-Aug-15				
River Chamber Contract Award (HQ CC800)	RCC 24020											◆ 31-Aug-15		

# Lower Mon "S" Curve

## Lower Monongahela River Project Baseline Estimate

Without New Land Chamber or the Port Perry Bridge

All Costs are Fully Funded



**Basis** = March 2014 Certified Total Project Cost Estimate  
**Originator** = Steve Fritz, Project Manager and Sean Weston, Cost Engineer  
**Approved By** = NOT READY FOR APPROVAL

↑  
**Current Estimated Completion Date Including Contingency**

# Future Challenges

- **Most Efficient Schedule & Funding**
  - **Continue to move project schedule left at every opportunity**
  - **Funding available when needed**
- **Site constraints at Charleroi and Victory Hollow**



# Lower Mon - Discussion

