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Locks and Dams 2, 3 and 4 Monongahela River Project (Lower Mon)



February 2011

**Steve Fritz, PE, PMP
Project Manager**

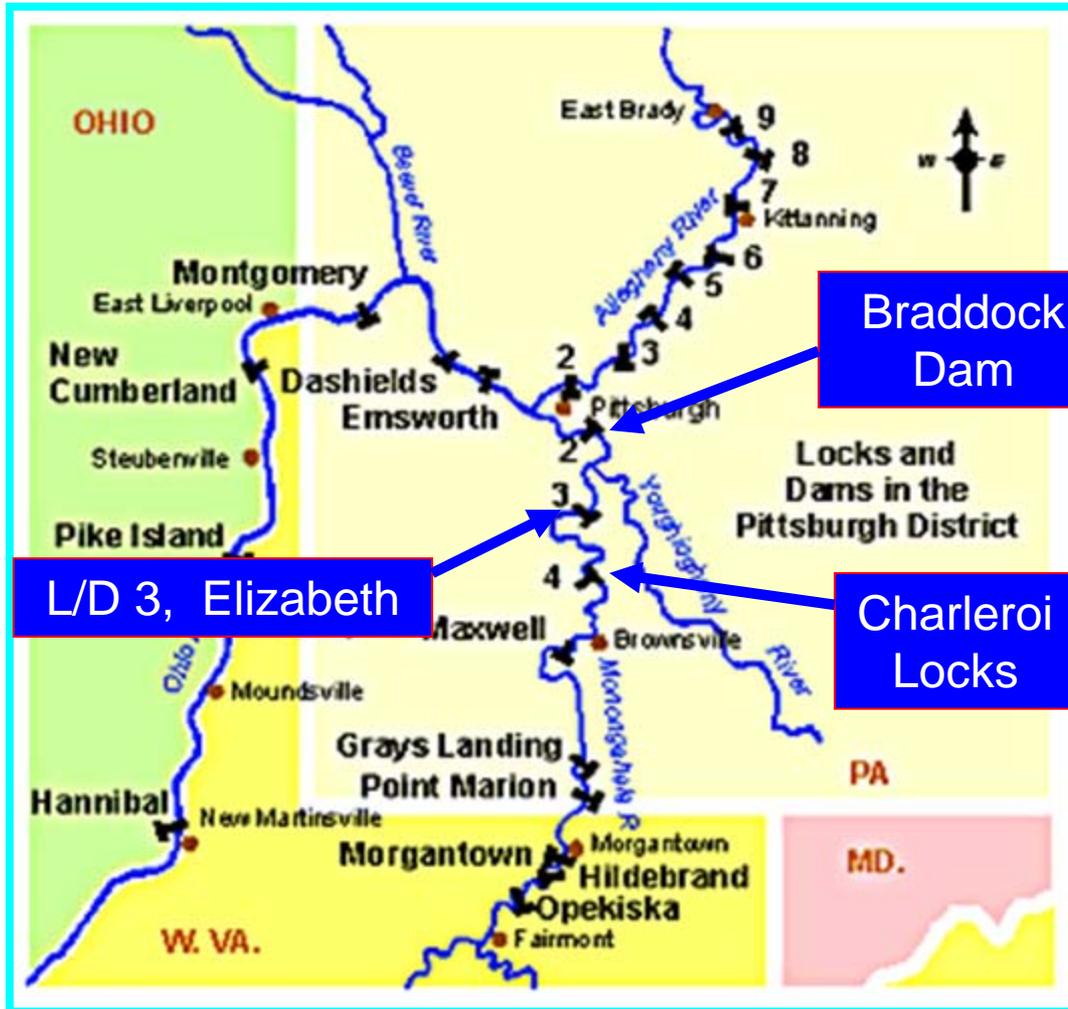


Lower Monongahela River Project Agenda

- Description
- Project Cost / Funding
- Risks
- Focus and Risk Reduction



Lower Monongahela River Project Project Description



- Located within 50 miles of the Point in Pittsburgh
- L/D 2 – Braddock Locks and Dam
- L/D 3 – At Elizabeth, PA
- L/D 4 – Charleroi Locks and Dam
- Authorized by WRDA 1992



Lower Monongahela River Project Project Description



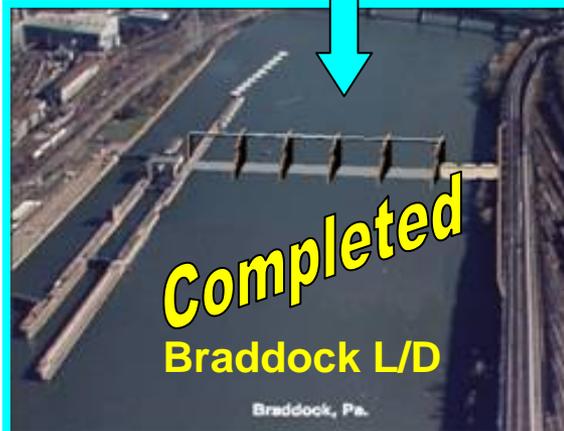
L/D 2



L/D 3



L/D 4



Completed

Braddock L/D

Braddock, Pa.



REMOVE



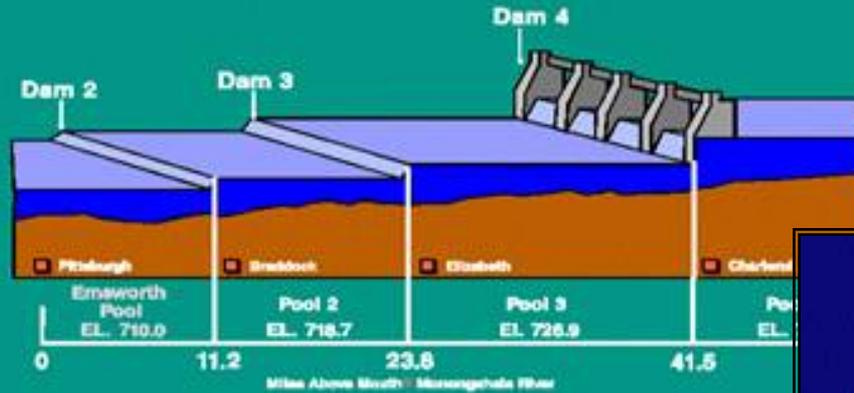
Charleroi L/D

Charleroi, Pa.



Lower Monongahela River Project Project Description

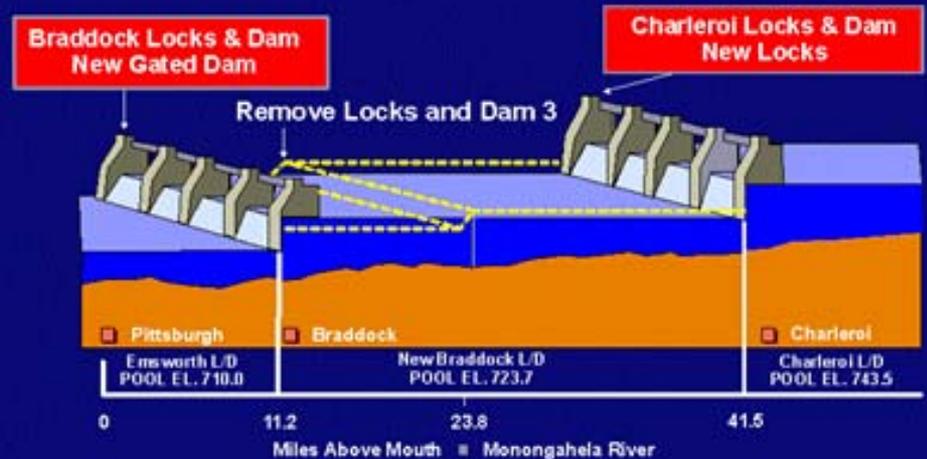
Monongahela River Existing River Profile



Existing Profile

Future Profile

Monongahela River Proposed River Profile

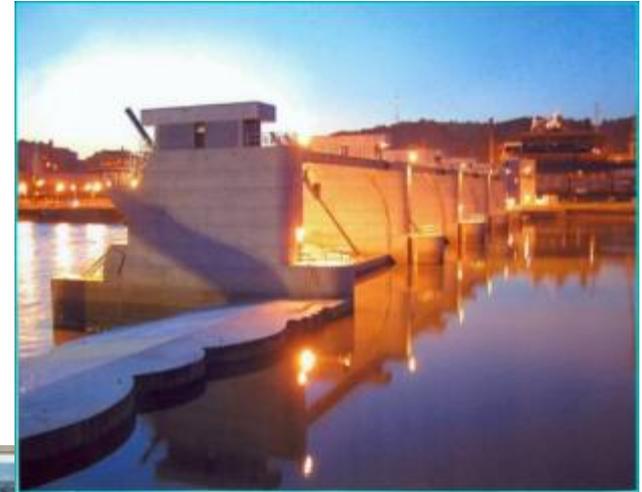




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Lower Monongahela River Project Project Description, Braddock Dam





Lower Monongahela River Project Project Description, Relocations

- Section 10 Rivers and Harbors Act 1899
- Section 111 River and Harbors Act 1958
- Municipal Relocations (over 60)
- Port Perry Rail Road Bridge
- Private Relocations (over 70)



Lower Monongahela River Project Project Description, Relocations





Lower Monongahela River Project Project Description, Relocations

Main Span





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Lower Monongahela River Project Project Description, Locks and Dam 3 Removal





Lower Monongahela River Project Project Description, Dredging and Disposal

- Navigation Channel
- 1.2 M Cubic Yards
Dredging
- Concrete Rubble
- NPDES Permitting



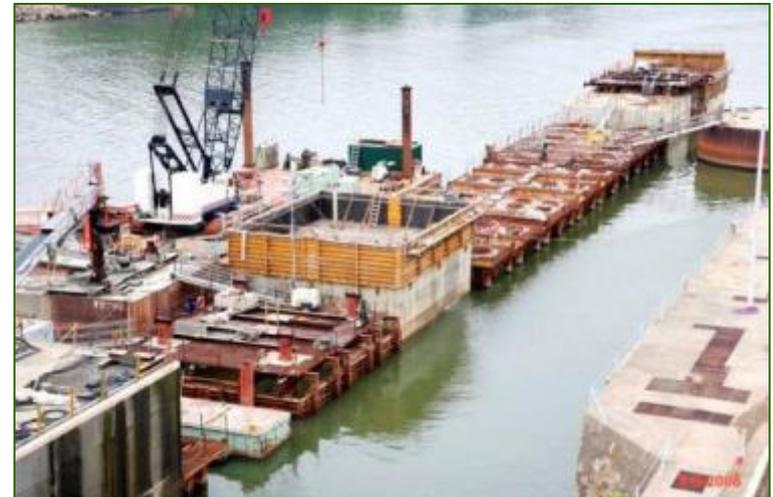


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Lower Monongahela River Project Project Description, Charleroi L/D

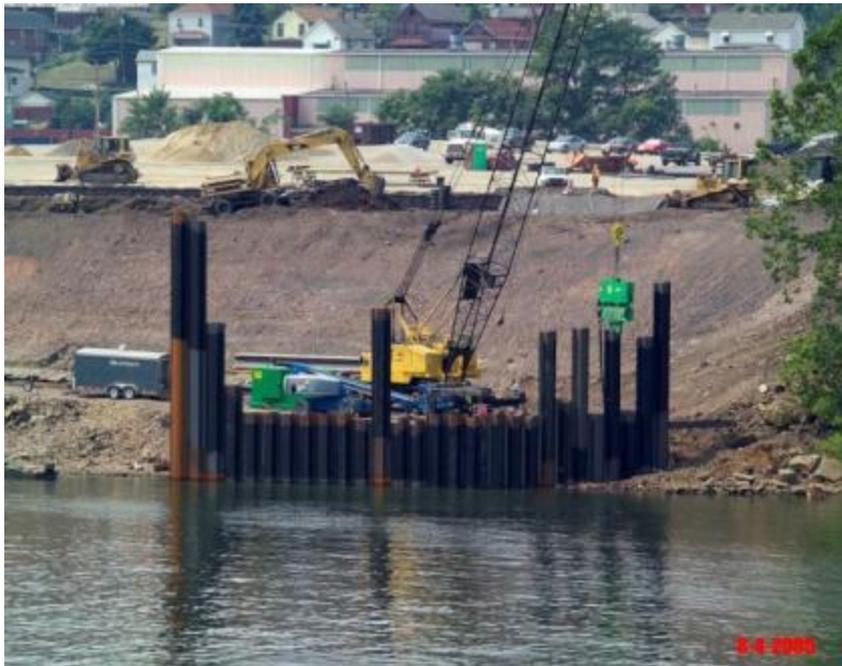
- 70 years Old
- One Operating Chamber
- Major Risk to Navigation
- 12M Tons Annually





Lower Monongahela River Project Charleroi River Wall Construction Batch plant Construction 2005

- River Wall Contract Info
- Awarded September 2004
- Contractor: Trumbull / Brayman, a Joint Venture
- Award Amount: \$96.6M – Partially ARRA funded
- Estimated Completion: February – March 2011

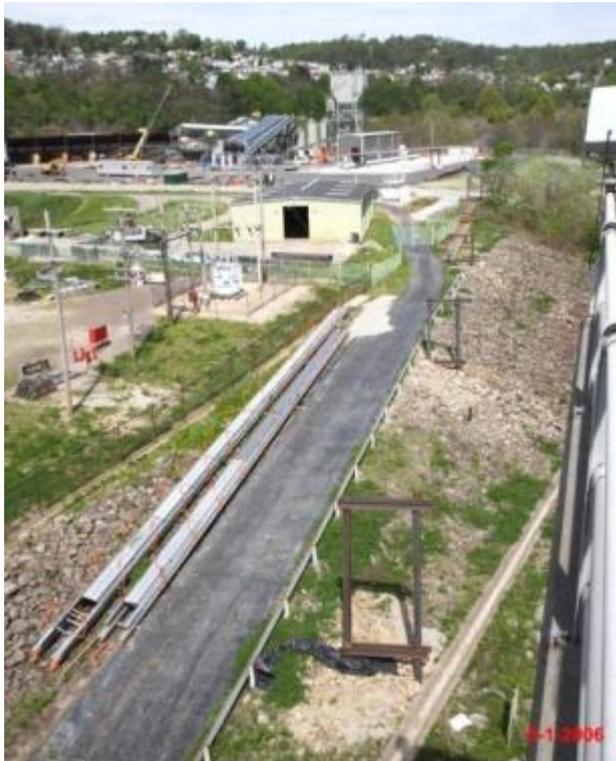




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Lower Monongahela River Project Charleroi River Wall Construction Conveyor Installation 2006





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Lower Monongahela River Project Charleroi Locks Construction Drilled Shaft Casing Installation June 2007





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Lower Monongahela River Project Charleroi River Wall Construction Drilled Shaft Concrete Placement April 2008





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Lower Monongahela River Project Charleroi River Wall Construction River Wall Taking Shape July 2009



Upper River Wall



Lower River Wall



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Lower Monongahela River Project Charleroi River Wall Construction River Wall Taking Shape July 2009





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Lower Monongahela River Project Charleroi River and Guard Wall Construction November 2010



**Guard Walls
construction
also shown**



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Lower Monongahela River Project Charleroi Guard Walls Construction Frozen River and Victory Hollow, January 2010

- Upper and Lower Guard Walls Contract
- Awarded August 2009
- Contractor: C.J. Mahan
- Award Amount: \$28.6M – ARRA Funded 100%
- Estimated Completion: September 2011

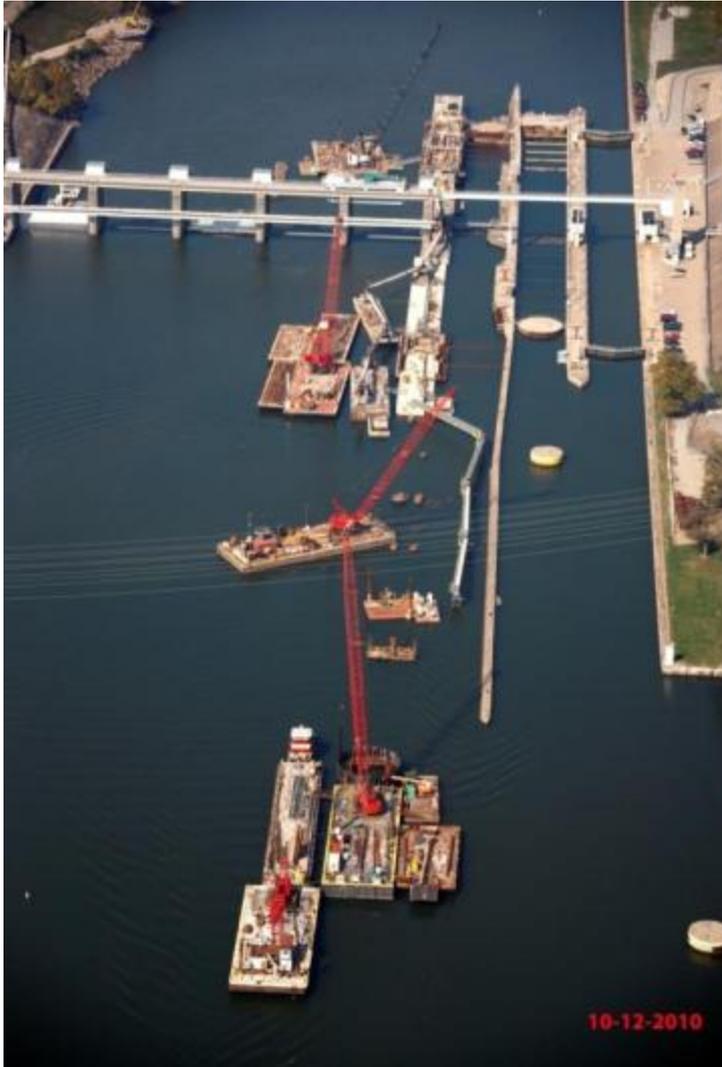




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Lower Monongahela River Project Charleroi Guard Walls Construction Upper Guard Wall, October 2010





Lower Monongahela River Project Costs / Funding

- As Authorized \$750M Fully Funded thru 2004
- Current Estimate \$1.7B Fully Funded
 - Unapproved current estimate
 - Includes risk analysis
- 50/50 Cost Share With IWTF
- Allocations thru FY 2010 = \$522M

Recent Appropriations/Allocations

Fiscal Year	Appropriation	Allocation	ARRA	Capability
FY 2007	\$63M	\$63M	\$0	\$63M
FY 2008	\$69M	\$40M	\$0	\$70M
FY 2009	\$16M	\$1.5M	\$55.2M	\$41M
FY 2010	\$6M	\$0	\$8.7M	\$92M
FY 2011	\$2M (Pres bud)	\$0	TBD	\$112M



Lower Monongahela River Project Risks

- Management Risks of Delays
 - Technology – Previous designs updated for new technology
 - Maintaining Focus
 - Maintaining Momentum
 - Attrition - Corporate knowledge of project
 - Real Estate Acquisitions – Multiple re-acquisitions
 - Inability to efficiently plan work
 - Fragmented construction by different contractors lends to differing systems for future maintenance



Lower Monongahela River Project Risks

- Locks and Dam 3 (Elizabeth, PA)
 - Unscheduled closures
 - Locks Filling / Emptying System
 - Mechanical components
 - F/E Flume
 - Dam
 - DSAC I Classification – Apron repaired 2007/2008
 - Timber Crib Foundation
 - Over 100 years old
 - Public and Industrial Water Supply



Lower Monongahela River Project Risks

- Locks and Dam 4 (Charleroi, PA)
 - Lock
 - Immediate
 - Lock walls on timber pile foundation – beyond capacity
 - Lower guide wall unstable
 - Upper miter gates jumping
 - Only one lock chamber operational – no redundancy
 - 75 Years old
 - Serviceability – Armor protection, concrete condition, etc
 - F/E system screen bars missing
 - Dam has a DSAC II Classification – FY 2009 declaration

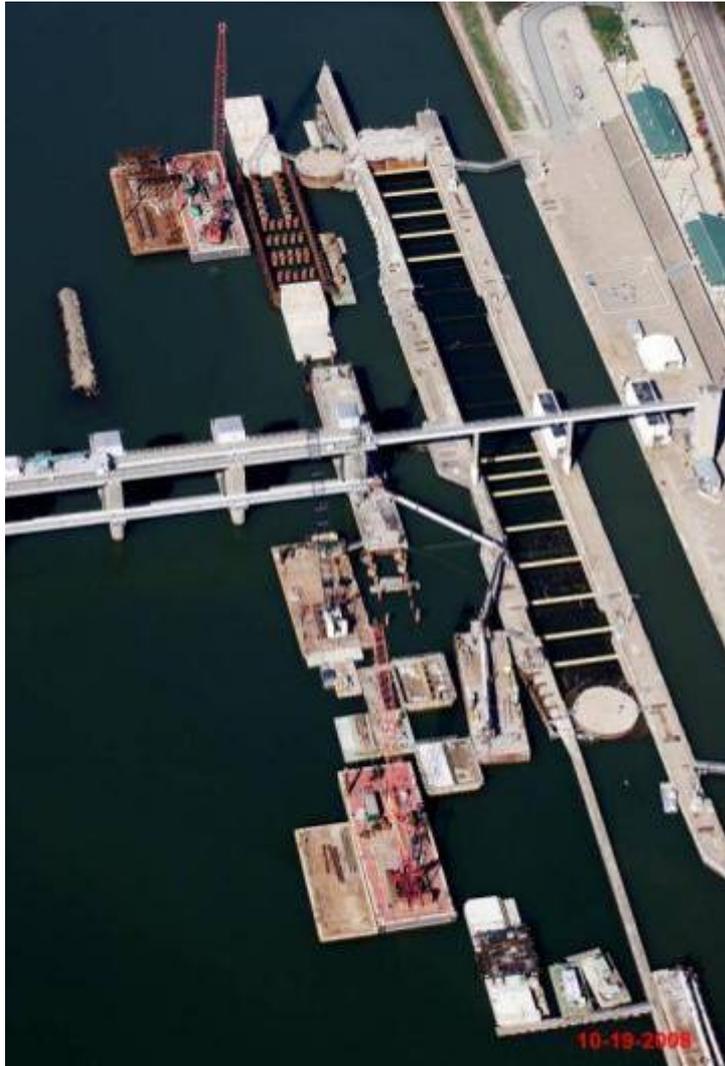


Lower Monongahela River Project Focus and Risk Reduction

- Remain Flexible with Construction and O&M funding
- Communicate Risks
- Locks and Dam 3
 - Maintain operations with O&M Funds, as available
 - Continue to monitor DSAC I Dam 3
- Charleroi River Chamber
 - Maintain operations with O&M Funds, as available
 - No Relocations at Expense of Charleroi River Chamber Construction
- Complete Project ASAP
 - Charleroi River Chamber
 - Dredging
 - Relocations
 - Removal of L/D 3
 - Charleroi Land Chamber
- Maintain Higher Pool 2 – reducing stress on Dam 3



Lower Monongahela River Project Q & A



Stephen R. Fritz, P.E., PMP
Project Manager
412-395-7273

steve.fritz@usace.army.mil

<http://www.lrp.usace.army.mil/pm/lowermon.htm>