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# *Pittsburgh District*



**Thomas A. Holden Jr., P.E.**

Chief, Technical Services Division  
U.S. Army Corps of Engineers, Pittsburgh District

*Inland Waterways Users Board Meeting*  
*July 30-31, 2007*



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## *Agenda*

- ◆ Emsworth Dams Major Rehabilitation Project Update
- ◆ Lower Monongahela River Project
  - Locks and Dams 2, 3 and 4



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## *Emsworth Dams Major Rehabilitation Project Update*



**Michael J. Rattay**

Project Manager

U.S. Army Corps of Engineers, Pittsburgh District





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## *Emsworth Dams Major Rehabilitation Project Update*

### *Key Actions to Date*

- ◆ **FY 2002 – \$78.26M Major Rehabilitation Approved**
  - Dam Features, Concept Scour Features and Service Bridge Features
  - Prototype Gate and Hydraulic Hoisting Machinery Installed in Gate Bay #6
- ◆ **FY 2004 – ASA(CW) Approved Dam Safety Wedge Funds for Major Rehab (Stability Correction)**
- ◆ **FY 2005 – Fast Tracked Design to Construction**
  - Initiated Fabrication and Construction of Lift Gates and Machinery, and Design and Fabrication of Emergency Bulkheads
  - Concurrent Hydraulic Model Study with Scour Protection Design
- ◆ **FY 2006 – Potential Project Cost Growth Recognized**
  - VE Study of Scour Design Approved
  - Fully Funded Acquisition Plan Approved
- ◆ **FY 2007 – Total Project Cost Update Completed**
  - Acquisition Plan Updated
  - Project Complete 2014

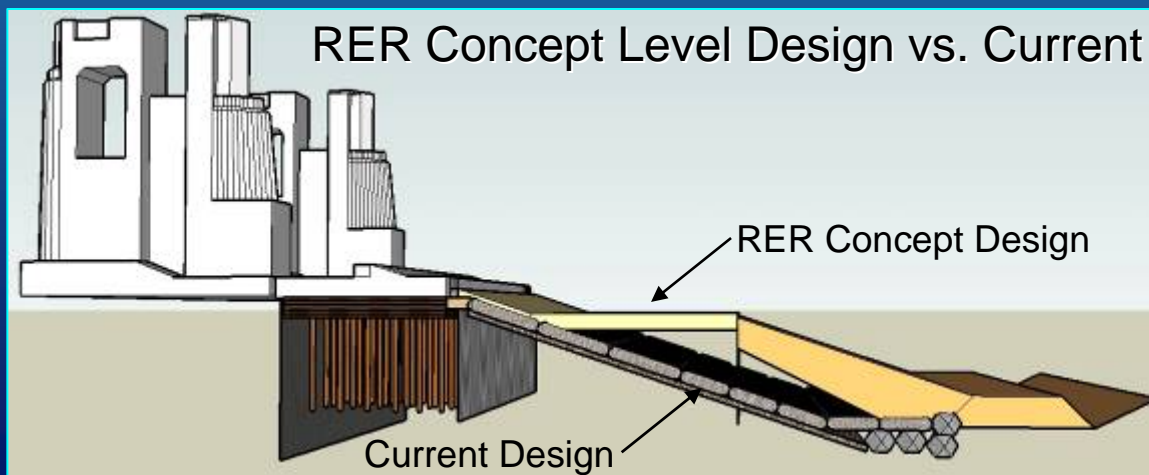


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## *Emsworth Dams Major Rehabilitation Project Update*

- ◆ Project Cost Estimate Update
- ◆ Prior to FY 2009 Budget Submission
  - May 2007 Briefed Local Navigation Stakeholders
  - June 2007 Brief WCI
  - June 2007 Completed Cost Risk Analysis
  - July 2007 Brief HQ and ASA(CW)
- ◆ Increase Positive Impact on Navigation



Lessons Learned



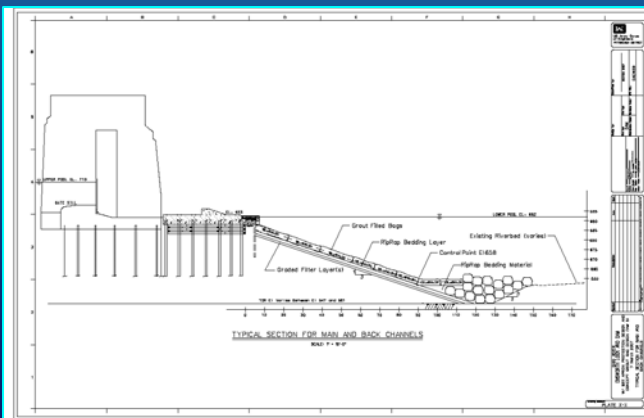
Design Fast Tracked



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## *Emsworth Dams Major Rehabilitation Project Update*



### Current Approved Acquisition Plan

Contract	Estimated Value	Scheduled Award
Emergency Bulkhead Supply	\$1.9M	Aug 2005
Back Channel Gate Rehabilitation	\$18.6M	Sep 2005
Back Channel Gate Supply	\$1.26M	Nov 2005
Emergency Bulkhead Hoist Supply	\$.8M	Sep 2006
Main Channel Abutment Stabilization	\$1 – 5M	Sep/Dec 2007
Main Channel Gate Supply	\$1 – 10M	Sep/Dec 2007
Main Channel Gates/Apron/ Scour Protection	Over \$10M	FY 2008
Back Channel Abutments Apron/ Scour Protection and Service Bridges Rehab	Over \$10M	FY 2010

PROJECT COMPLETE 2014



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



# Lower Mon Project

**Jeanine Hoey, PE, PMP**

Project Manager

U.S. Army Corps of Engineers, Pittsburgh District



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## *Discussion Topics*

- ◆ Project Location
- ◆ Project Description
- ◆ Project Status
  - Braddock Dam – Complete
  - Municipal Relocations – In Progress
  - Port Perry Bridge Relocation – In Progress
  - Dredging – Inactive
  - Charleroi Locks – In Progress
  - Removal L/D 3 – Not Started
- ◆ Lower Mon Project Cost Update
- ◆ Risks
- ◆ Project Focus Areas





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## *Project Location*

- ◆ Located within 50 miles of the “Point” in Pittsburgh
- ◆ Locks and Dam 2 – Braddock Locks and Dam
- ◆ Locks and Dam 4 – Charleroi Locks and Dam
- ◆ Authorized by WRDA 1992





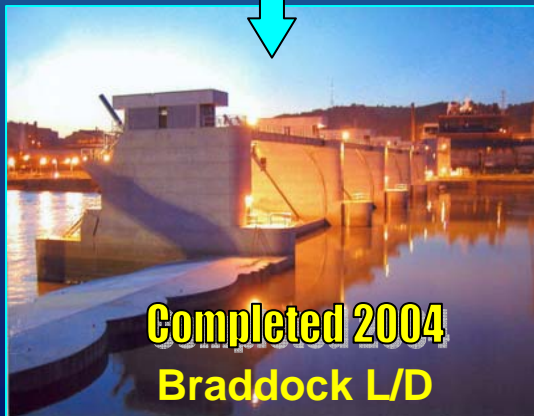
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## *Project Description*



**L/D 2**



**Completed 2004  
Braddock L/D**



**L/D 3**



**REMOVE**



**L/D 4**



**In Progress  
Charleroi L/D**  
Charleroi, Pa.

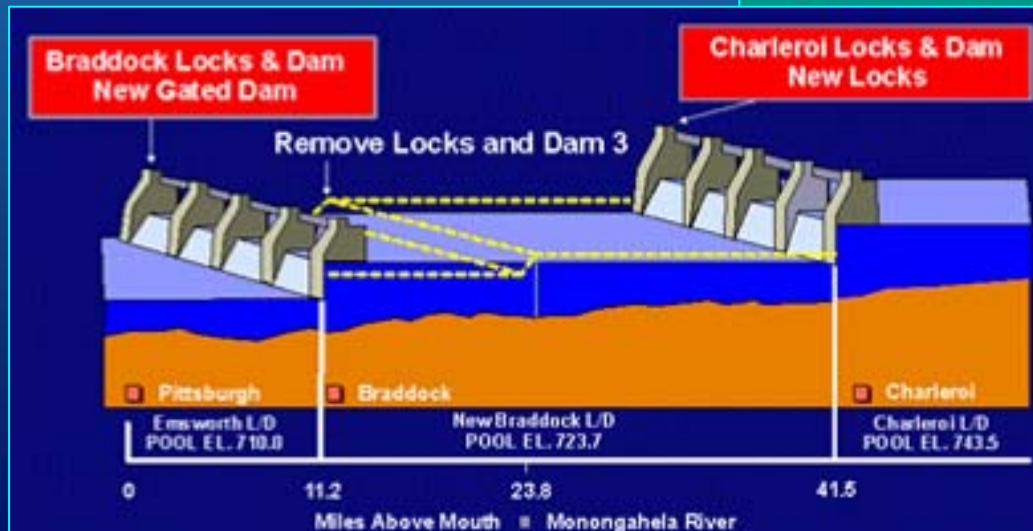


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## Project Description

### Pre-Construction Profile



### Future Profile

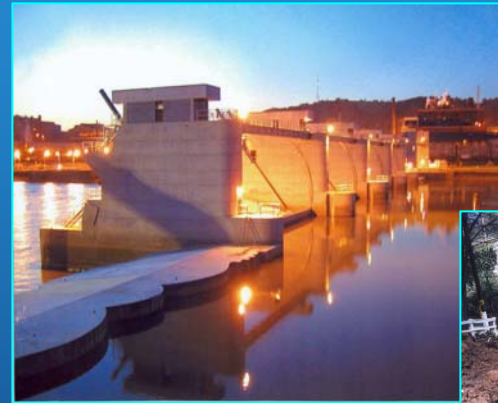


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## Status

- ◆ Braddock Dam – Complete
- ◆ Municipal Relocations – In Progress
- ◆ Port Perry Bridge Relocation – In Progress
- ◆ Dredging – Inactive
- ◆ Charleroi Locks – In Progress
- ◆ Removal L/D 3 – Not Started







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## Charleroi Locks

### Site Development Contract - \$7.9M

- Awarded September 2002
- Physically Complete

### River Chamber Demolition Contract - \$12.9M

- Awarded September 2003
- Physically Complete

### New Locks:

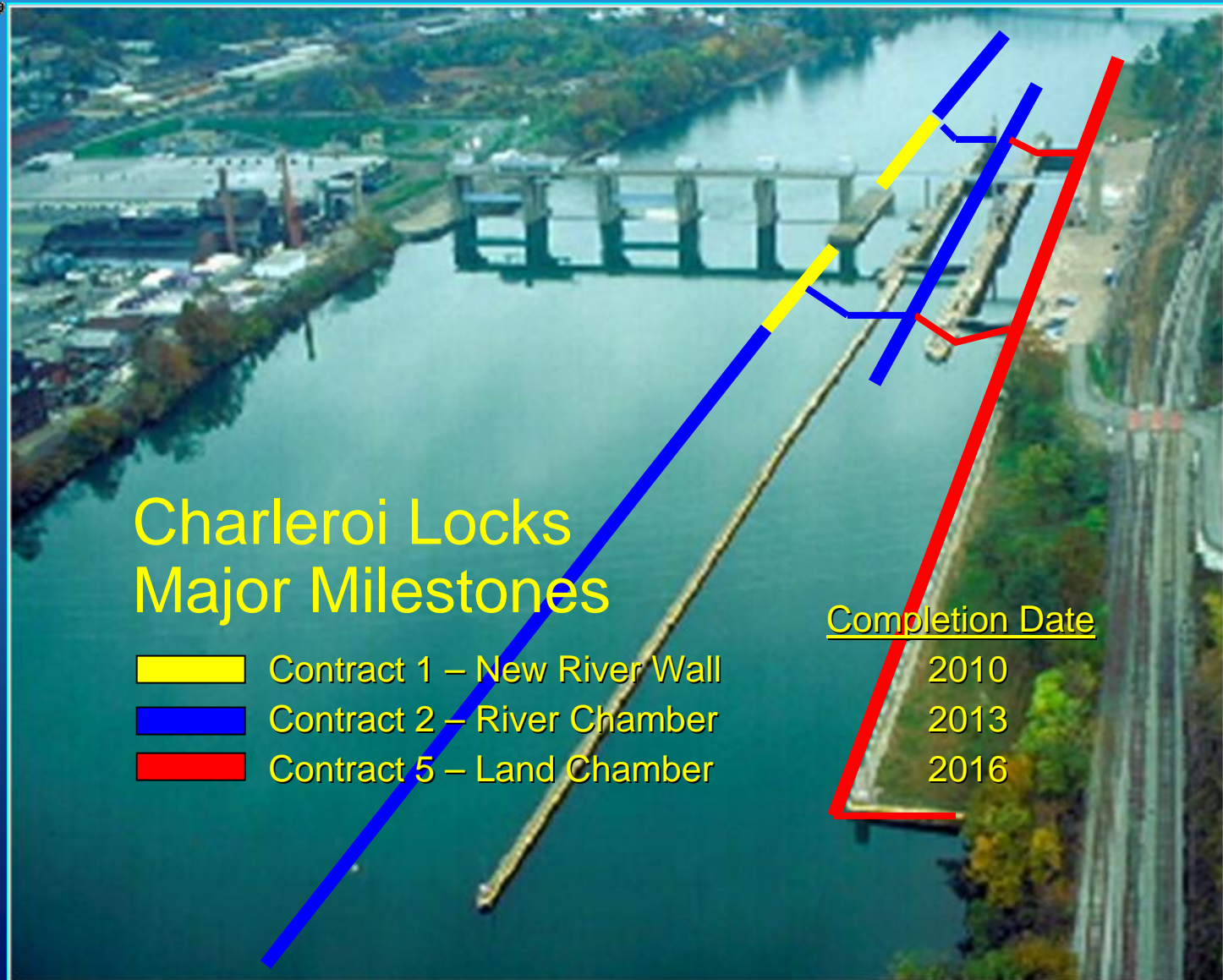
- Multiple Contracts
- First Contract – River Wall
  - Awarded – September 2004
  - Notice to Proceed – May 2005
- Complete Final Contract
  - September 2016





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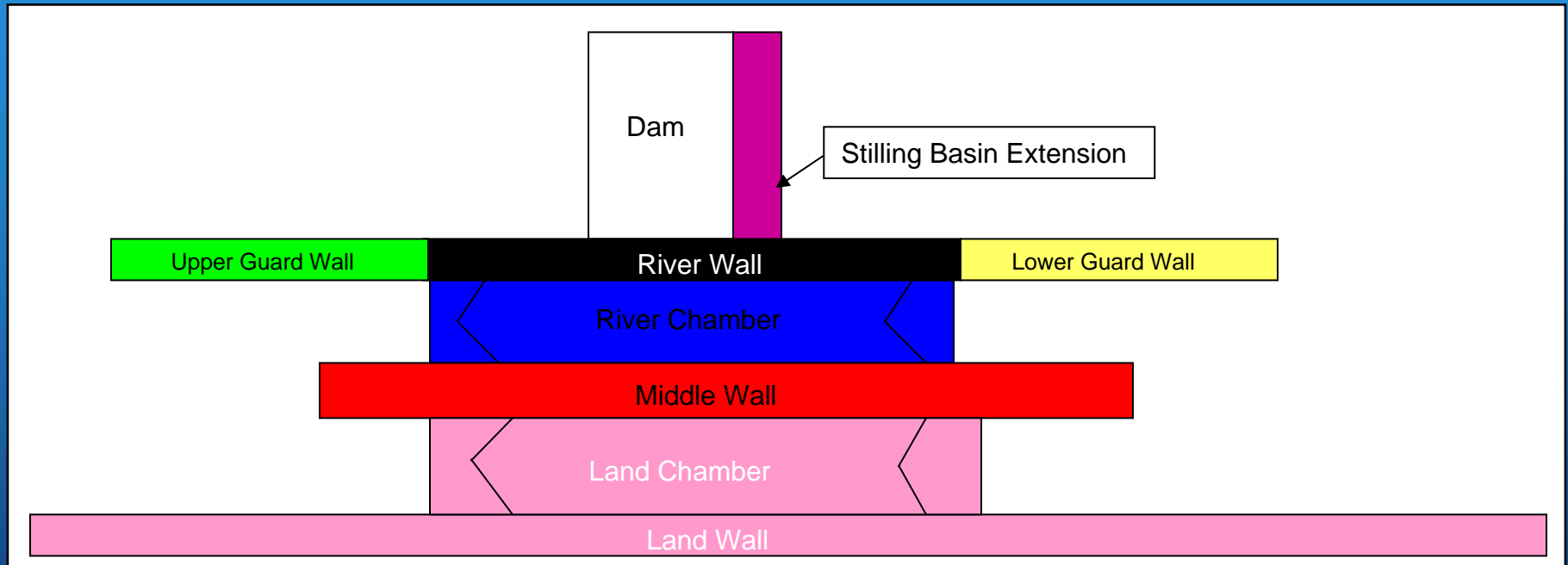




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## Charleroi Construction Sequence



### LEGEND

Contract 1	<div></div>
Contract 2	<div><div></div><div></div><div></div><div></div><div></div></div>
Contract 3	<div><div></div></div>

### Pros

- 2016 Project completion
- Maximum flexibility for contractor
- Could improve upon 2016?
- Best if no constraints on funding
- Recent OMB guidance to fund Lower Mon at capability levels

### Con

- Requires commitment for efficient funding through remainder of project



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## *Project Cost*

- ◆ Authorized Base Cost – \$556.4M (Oct. 1991), Fully Funded – \$750M
- ◆ Initial Scheduled Completion Date – Dec. 2003
- ◆ Sunk Costs through 2006 – \$343.7M
- ◆ New MCACES Project Cost Estimate





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## Risks

### ◆ Operations

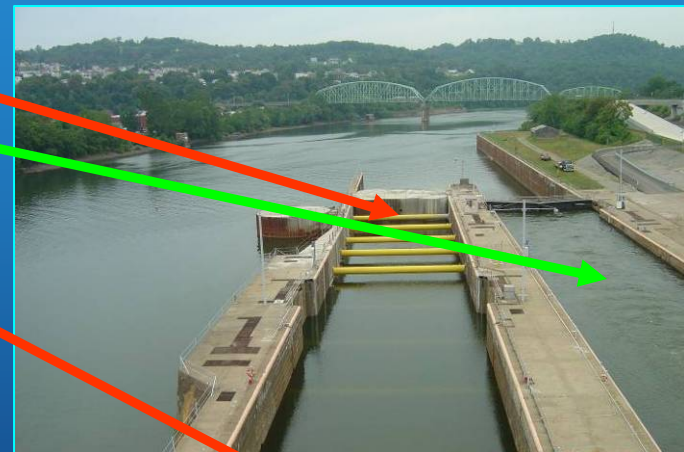
- River Chamber Demolition
- One Chamber at Locks 4
- Dam 3 has Failed

### ◆ River Chamber Contract

- Continuing Contract
- Significant Cost – Funding Risk

### ◆ Minimize Risk

- Complete Charleroi River Chamber
- Remove L/D 3
  - Complete Charleroi River Chamber
  - Pool 2 Relocations
  - Dredging
- Sustain Recent Trend in Appropriations at Capability Level





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*Focus*

## ◆ Charleroi River Chamber in 2013

- Perform Land Chamber Critical Maintenance Through 2011
- Complete Pool 2 Relocations
- Complete Pool 3 Dredging

## ◆ Remove Elizabeth in 2013

- Perform Critical Maintenance Through 2011



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## *Points of Contact*



### **COL Michael P. Crall**

District Commander, 412-395-7103

E-mail: Michael.Crall@usace.army.mil

### **Curtis N. Meeder**

Project Management, 412-395-7105

E-mail: Curtis.N.Meeder@usace.army.mil

### **Thomas A. Holden Jr.**

Technical Services, 412-395-7250

E-mail: Thomas.A.Holden@usace.army.mil

### **Richard C. Lockwood**

Operations, 412-395-7140

E-mail: Richard.C.Lockwood@usace.army.mil

### **Michael J. Rattay**

Project Manager, 412-395-7372

E-mail: Michael.J.Rattay@usace.army.mil

### **Jeanine Hoey**

Project Manager, 412-395-7289

E-mail: Jeanine.Hoey@usace.army.mil