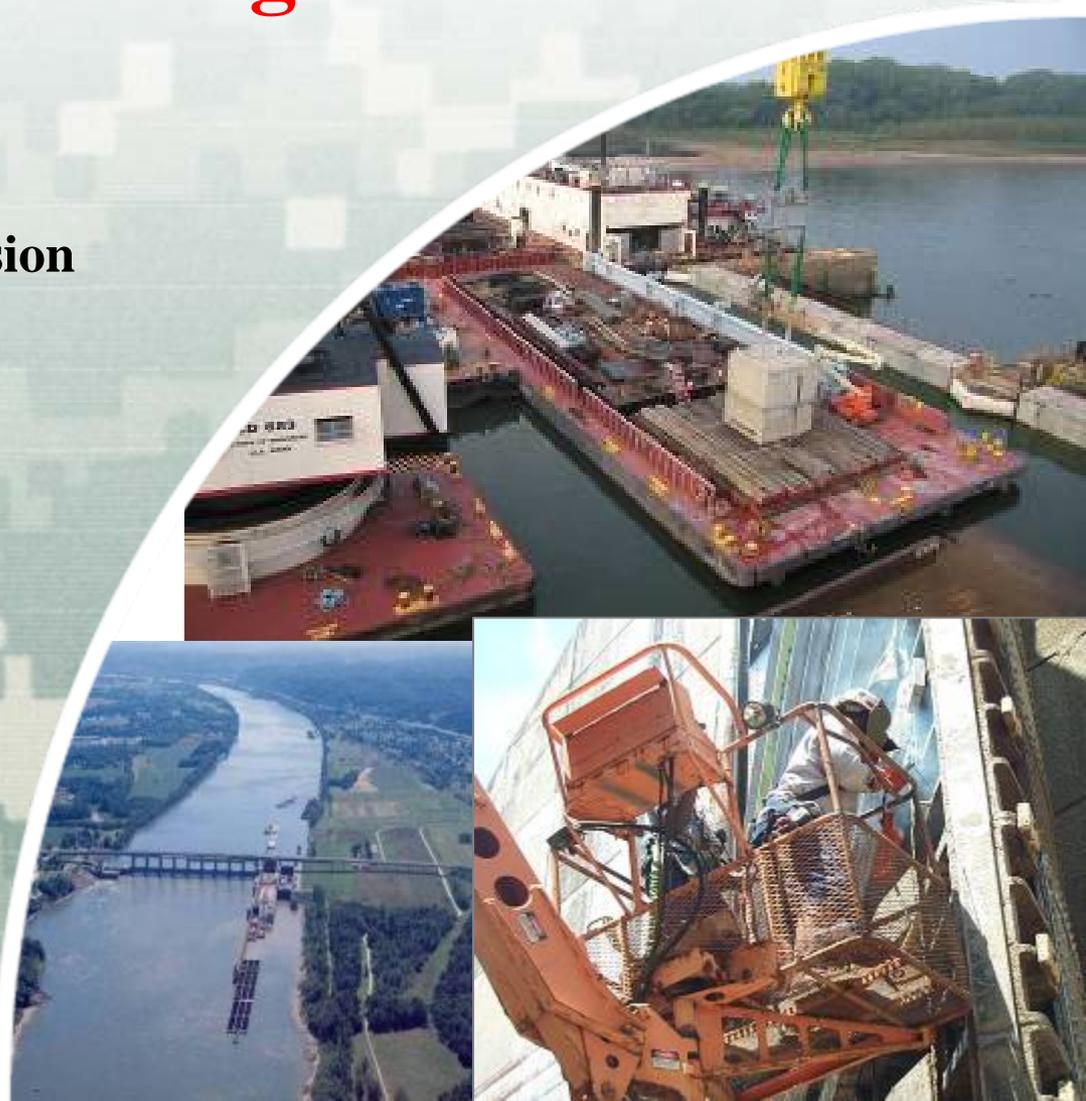


# Lock Maintenance Workshop

## Tough Challenges Ahead

**Bill Chapman**  
**Chief, Operations Division**  
**Great Lakes and Ohio River Division**

**12-14 February 2013**  
**Huntington, WV**



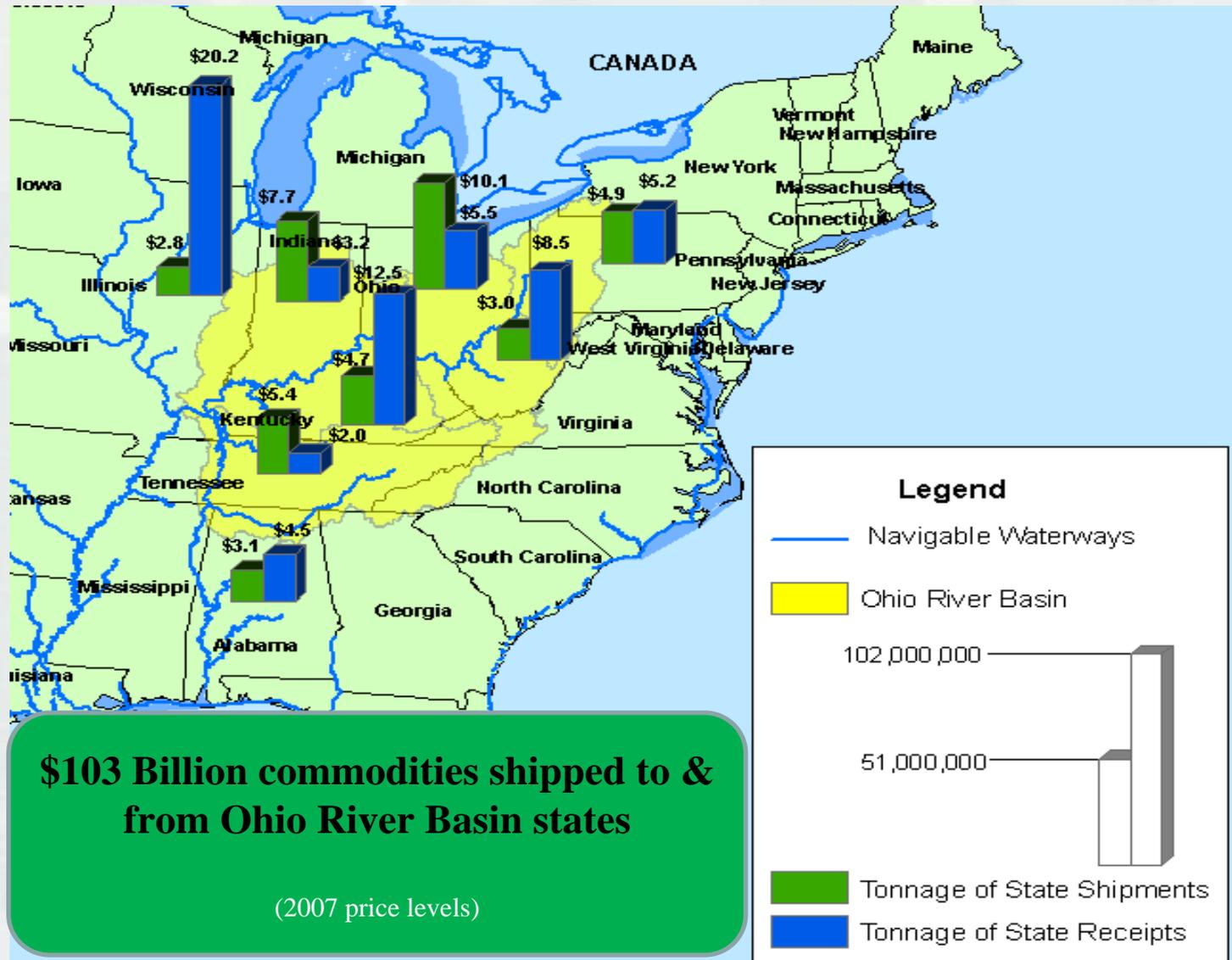
US Army Corps of Engineers  
**BUILDING STRONG**<sup>®</sup>

# Topics

- **Navigation**
- **Challenges Faced**
- **O&M Pressures**
- **Budget**
- **Program Strategy and Priorities**
- **The Future**



# Ohio River Navigation System Value







# Challenges Faced

- Aging Infrastructure
- Deteriorating Lock/Dam Systems
- Design limits reached
- Increased usage
- Unanticipated work during dewaterings
- Limited resources or constraints
- “Fix as fails” mode of operation



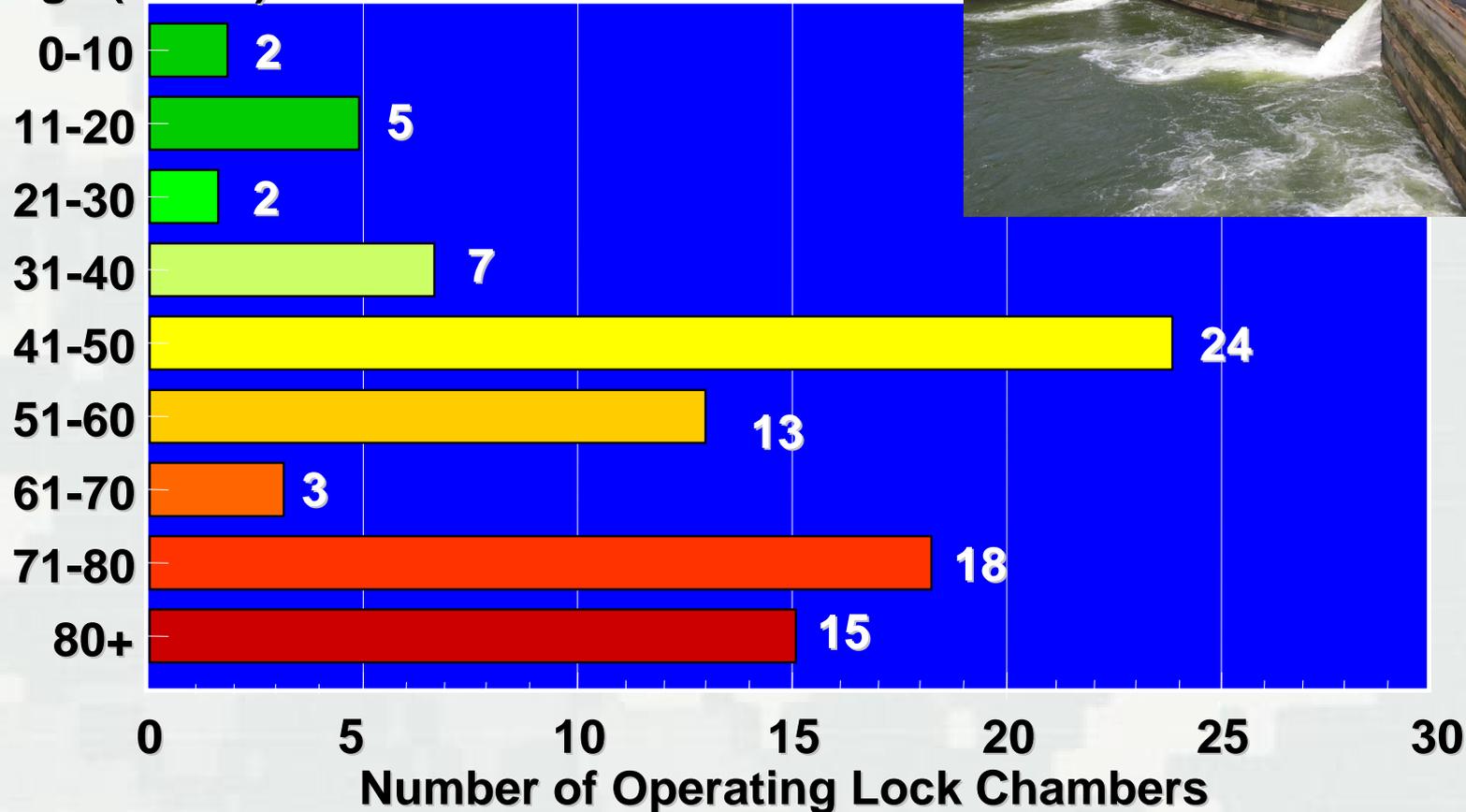
# Aging Lock Inventory in LRD

Average Chamber Age in 2013: 57 yrs

Oldest Chamber: Braddock 1905 (107 yrs)

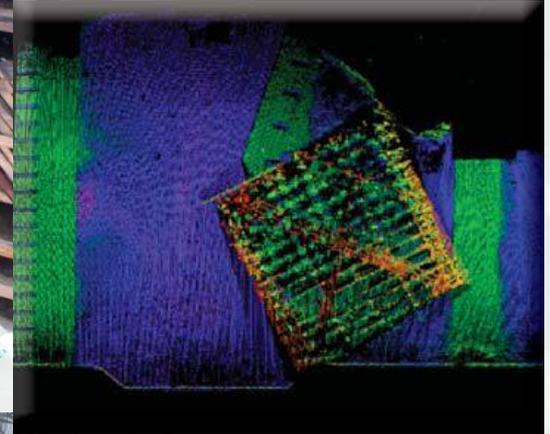


## Age (Years)



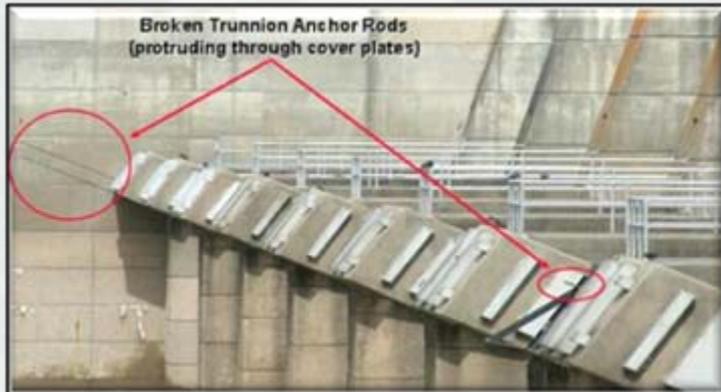


# Greenup & Markland Miter Gates





# Navigation Dams

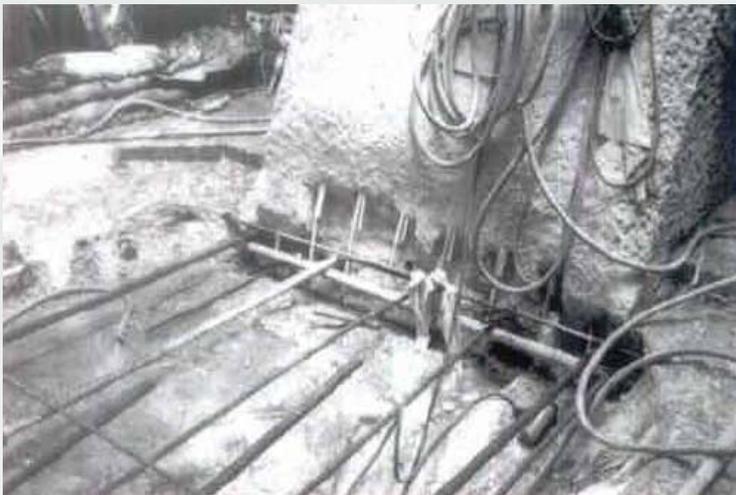
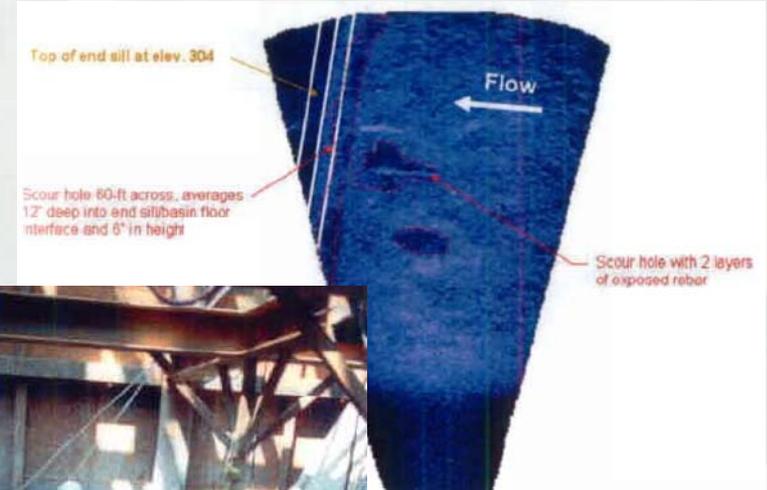
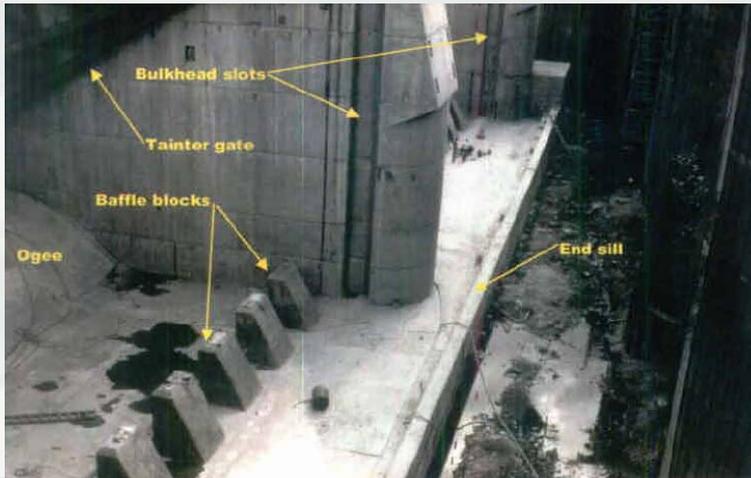




# Montgomery Dam Gates



# Stilling Basin Erosion





# O&M Pressures



- Miter Gates
- Navigation Dams
- High Risk Projects
- Repair Fleet limitations
- Dam Safety IRRM
- Hydropower
- Joint Costs – Multipurpose Projects
- Levee Program

# The O&M Crisis

## Problem

- Deteriorating Infrastructure
- + Inability to Rehabilitate
- + Escalating Engineering Standards
- + Accelerating O&M Requirements
- + New Projects
- + Stagnant Budget

## Options

- (A) Operations or Maintenance
- (B) Recapitalization or maintenance
- (C) Bring new project on-line or not
- (D) Apply new Standards or not
- (E) Increase Budget or not
- (F) Implement National Asset Mgmt or not
- (G) Systemic Life Cycle Fix

=



# CW Budget Arithmetic

**Civil Works Budget Ceiling** **\$4,900 mil**

Allocate GE, REG, FCCE, REC, FUSRAP... - 900

Allocate Base O&M (~75% of required) - 1,800

Essential Dam Safety - 500

Assign National Priorities - 400

Continuing Construction at Base Level - 800

Planning Studies - 100

Minimum Essential Allocation = **- \$4,400**

Left for all other CW Projects & Programs **~\$400 mil\***

Use the \$400 mil to restore project O&M to prior year levels



**THAT'S IT!**



**BUILDING STRONG®**

# Program Strategy

- Exigent infrastructure repaired within the affordable and expected program levels
- Must use risk-based model founded on Asset Management principles to determine most critical repairs. AMPA to be used in the future
- Continue aggressive inspection programs
- Fully realize regional resources, fleets, inventories, warehouses and FEM system
- Operations must engage with Regional Inland Navigation Design Centers.



# Why are all these issues and initiatives important ?

*.....The economic impacts are great for unscheduled lock closures!*



# The Future

- Continue to manage systems effectively
- Partners in Navigation
- Continue to engage in dialog & listen to our critics.
- Build on Lesson's Learned, Sharing Info
- Continue to build relationships
- Expand our communication capabilities
- **SAFETY - ITS ALL OUR RESPONSIBILITY**





# Questions

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