Zedler Mill Dam and Bank

GBRA PRESENTATION

June 10, 2015
Outline

• Mill History
• Project Overview
  – Dam
  – Bank
• Construction
History

- 1874 Mill and Rock Dam
- 1885 Wooden Dam
- 1914 Concrete Dam

Mill provided City
- Water
- Electric
- Gristmill & Sawmill
- Cotton Gin
- Economic Stability
2004 Downstream Repairs
Current Status
Zedler Mill Dam Overview

- 11 feet high
- 105-ft wide
- Millrace nonfunctional
- Average flow 250 cfs
Ottine Dam

- Constructed approximately 1911 by same company as Zedler Mill Dam
- Similar design to Zedler Mill Dam
- Failed in 2008
- Loss of foundation likely cause of failure
Ottine Dam
High Flows
Whirlpool
Initial Findings

- Suction through dam
- Whirlpool in lake
- Undermining at toe
Locations of Suction
Conclusions

• Dam is potentially unstable based on assumed (partially observed) geometry.

• However, dam has been stable over numerous floods for approximately 100 years.

• Failure of dam through foundation erosion is possible if noted deficiencies are not corrected.
  • Suction
  • Whirlpool
  • Undermining
• Address the suction through the dam
• Install seepage cut-off wall
Dam is likely founded on timber piles
Micropiles

NOTE:
SOIL STRATA ARE FOR ILLUSTRATION PURPOSES
SEE BORING LOCATIONS ON SHEET 4
Bank Loss
Banks
2002
Repair Alternatives

Sheet Pile Wall
Repair Alternatives

Modular Block Wall
Construction Considerations

• Sheet Pile Wall
  - Could be installed with the river at the normal water level
  - Likely be installed from a barge

• Modular block wall
  - Requires dewatering around the project area by installing a cofferdam or lowering the lake, which is not feasible unless the dam outlet is repaired
Bank Reclamation
Bid Results

• 1st Bid: Dam Rehabilitation and Bank Reclamation
  – Total Bid: $4,943,580
  – Dam Rehabilitation: ~$2,280,000
  – Bank Reclamation: ~$2,660,000

• 2nd Bid: Dam Rehabilitation
  – Total Bid: $1,683,350
  – Jerdon Enterprise, L.P.
Construction
Public Works Project of the Year
Historic Restoration/Preservation $2M-$5M