

Master Planning for Lake Shady Dam Removal, Riverine System Establishment and Lake Bed Development For Public Use

Public Information Meeting
February 22, 2011

Executive Summary

- Why are we here?
 - To disseminate factual information associated with the Oronoco Dam and proposed Dam Removal and Restoration Project
 - Initiate a dialog with the public and other stakeholders to kick off the master planning process
 - Seek input from the public as to how the lakebed should be developed for public use
- Handout

Work Completed to Date

- Lake Shady Restoration and Preservation Committee established in 1989
 - Worked to agencies on the restoration of Lake Shady
- Lake Shady Stakeholders Report
 - 55 stakeholders including 20 natural resource professionals met 10 times during 2009
 - 2010 reports and nine presentations available on Olmsted County Website

Work Completed to Date

- Critical actions since September 2010 Flood (see timeline)
 - DNR Dam Safety completed inspection of dam
 - Olmsted County Board voted to remove the County owned Lake Shady Dam
 - DNR present concepts for dam removal and lakebed restoration to the public
 - \$1 million DNR grant secured for Dam Removal and Control Structure construction only
 - LiDAR flight and seeding of lakebed completed
 - Minnesota Avenue (CSAH 18) Bridge repaired
 - Structural evaluation of dam complete (above water only)

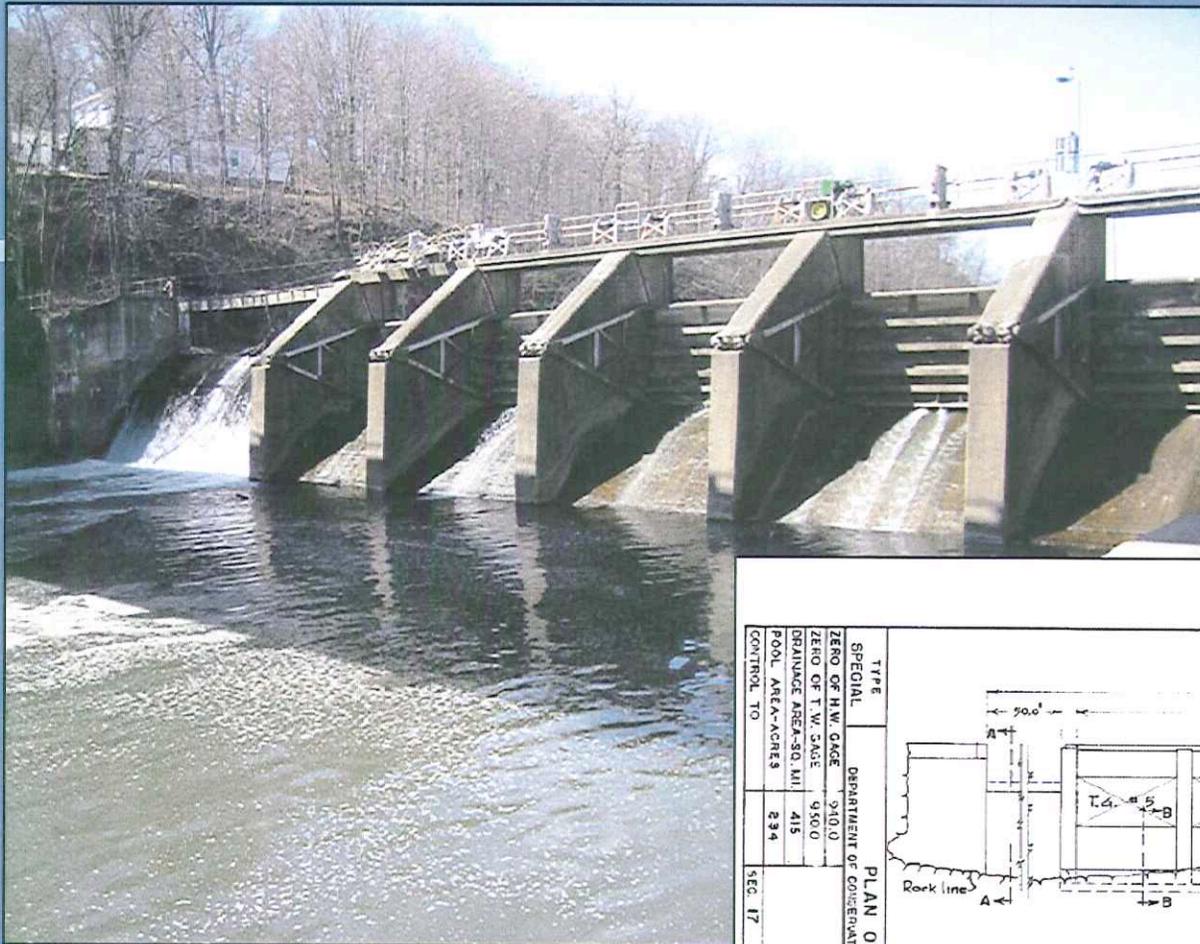
DNR Requirements to Restore the Dam

- Dam gates to remain open until:
 - Repairs to the bridge and dam are complete
 - A condition assessment of the dam is completed showing that the dam is safe
 - A hydraulic analysis is completed showing that the dam can safely pass the design flood event
 - The Dam Operation and Maintenance Manual has been updated and approved
 - Construction of a berm to prevent a future breach of the north embankment is completed

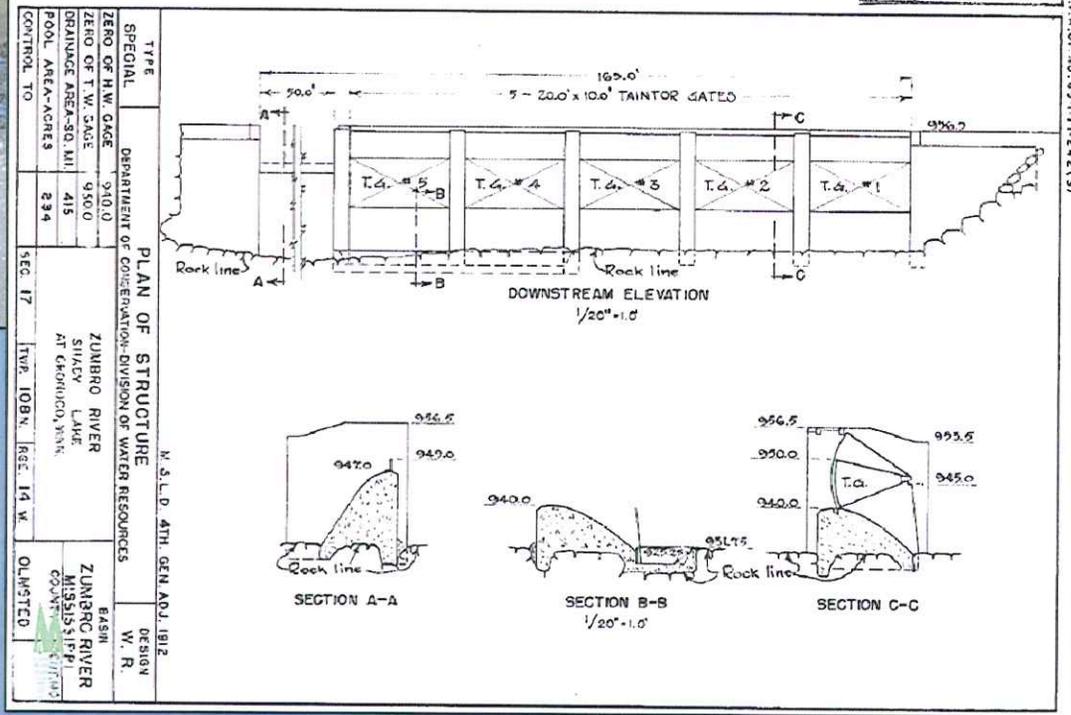
DNR Requirements to Restore the Dam and Lake Shady

■ Bring dam up to CURRENT DAM SAFETY DESIGN STANDARDS

- Current dam spillway has Less than a 50-year storm conveyance capacity
- The minimum dam spillway conveyance capacity is a 100-year storm for a Class II Dam without overtopping dam
- Hydraulic analysis would be required to see if the Lake Shady dam's spillway capacity would need to exceed a 100-year storm
- Likely that a 500-year dam spillway would be required.



D.O.W.
FILE
NO. **A-619**



Facts on Condition of the Dam

- Existing dam 75 years old
 - Constructed of non air entrained concrete
- Existing dam believed to be structurally sound with the following exceptions:
 - Failed core wall on north side of dam
 - Soundings are recommended downstream of the spillways to check for erosion or scour (poor quality bedrock suspected on north side of dam)
- Most damage to non structural portions of the dam
 - Approximate damage estimate ~ \$75,000

Facts on Condition of the Dam

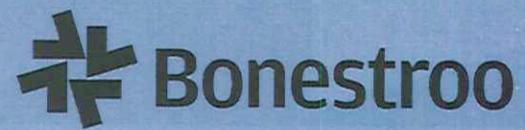
■ Dam Functionally Obsolete

- Expansion of existing dam spillway to meet DNR Dam Safety standards does not appear feasible
- New dam construction estimated cost roughly \$4 to \$5 million (Excludes lake dredging costs)

Project Funding

- FEMA does not appear willing to participate in the costs to bring the dam up to DNR Dam Safety Standards (50% Rule)
- State of Minnesota Flood Recovery Legislation provided \$1 million dollars to remove the dam and construct a grade control structure
- Olmsted County is working secure additional funding for the reestablishment of a riverine system through the Minnesota Legislature bonding, Legacy Grants, etc.

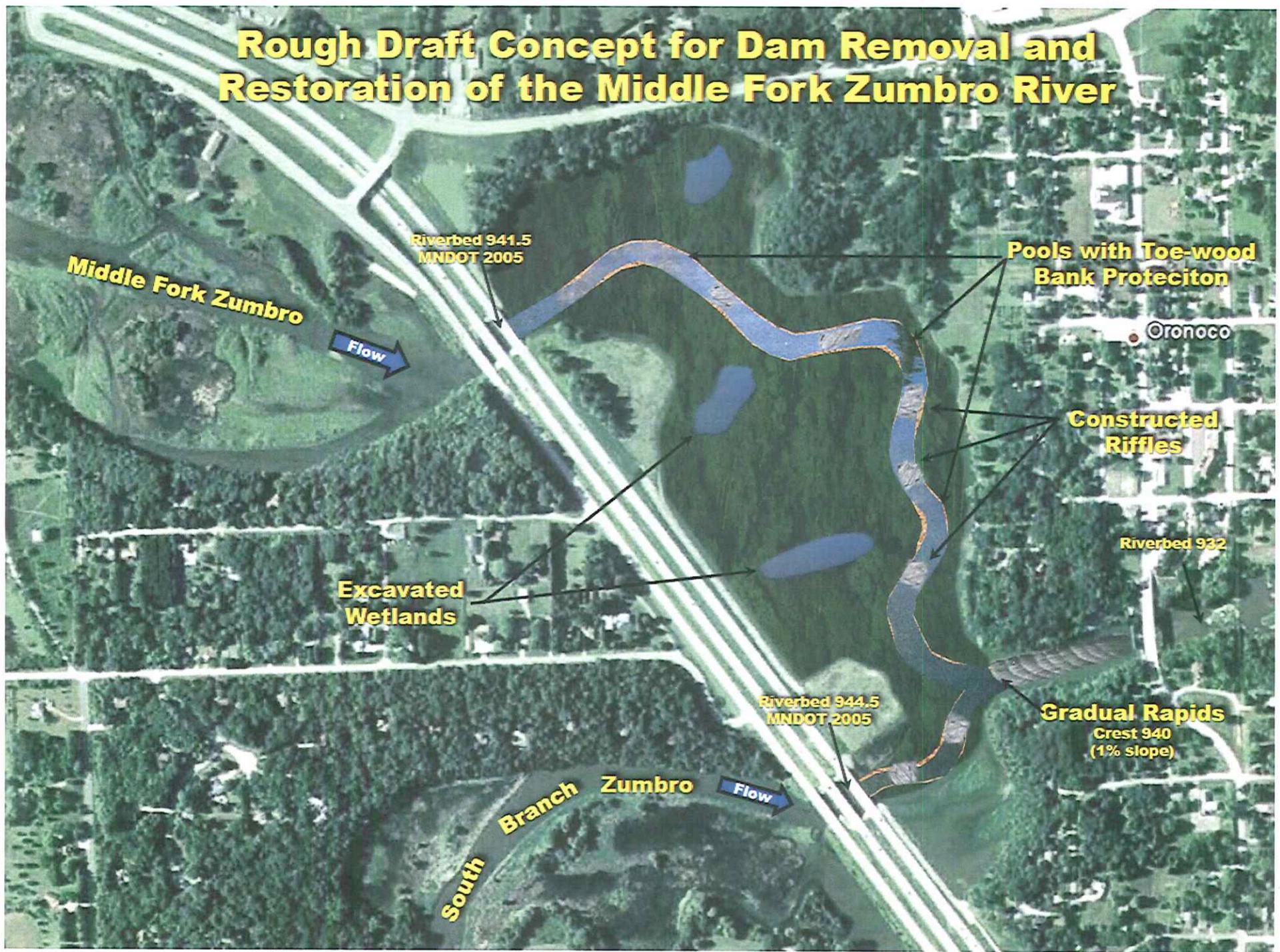
Questions/Comments



Planning for Stream and Lakebed Restoration

- DNR has prepared CONCEPTUAL drawing of the possible restoration of the riverine system
- Concept is a starting point and will evolve to meet permitting, engineering, environmental and stakeholder requirements

Rough Draft Concept for Dam Removal and Restoration of the Middle Fork Zumbro River



Middle Fork Zumbro

Flow

Riverbed 941.5
MNDOT 2005

Pools with Toe-wood
Bank Protection

Oronoco

Constructed
Riffles

Riverbed 932

Excavated
Wetlands

Riverbed 944.5
MNDOT 2005

Gradual Rapids
Crest 940
(1% slope)

South
Branch Zumbro

Flow

Challenges to Overcome

- Property ownership / land acquisition
- Sediment management
- Channel restoration
- Fisheries impacts
- Economic Impacts
- Historical preservation requirements
- CSAH 18 bridge protection
- Consensus building amongst stakeholders
- Project funding
- Agency permitting (DNR, MPCA, ACOE, MN/DOT)
- Environmental documentation
- Lakebed land use for public purpose (Develop Vision)

Lakebed Restoration for Public Use

■ Potential Amenities

- Trails and pedestrian bridge over river
- Wetland / water features
- Wildlife Habitat
- Canoe landing
- Picnic area / shelter
- Expansion of Oronoco Park
- Trees and deep rooted native grasses
- Fish habitat and access for fishing
- Scenic river rapids
- Ball fields (current or future)
- Parking Lots
- Historical Kiosks

Planning for Stream and Lakebed Restoration

■ Other Design and Implementation Considerations

- Maintenance Costs
- Safety (flood plain)
- Accessibility
- Aesthetic Value
- Future land use

Lakebed Redevelopment for Public use

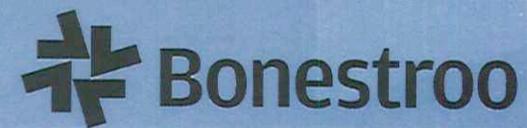
- What do you want to see the Lakebed become?
- What features and considerations are most important to you?
- Please provide us with your comments so we can prepare for upcoming meetings.

Planning Process - Next Steps

- Public Information Meeting No. 1 February 22, 2011
- Stream & Lakebed Restoration Charrette March 5, 2011
- Public Information Meeting No. 2 April 4, 2011
- Finalize Planning Concepts and Technical Memorandum April 15, 2011
- Present Documentation to the State Legislature as part of Bonding / Flood Recover Assistance April 18, 2011

Open House

Questions/Comments



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