

Environmental Restoration Efforts



Four Lakes Task Force



Project Team

FOUR LAKES TASK FORCE

Four Lakes Task Force

- **Dave Kepler – President**
- Dave Rothman – Vice President
- Adam Heinrich – Construction & Program Manager
- Brad Fedorchak – Operations
- Greg Uhl – Operations

Spicer Group, Inc.

- **Ron Hansen – Owner Engineer**
- Brian Boals – Civil Lead
- Kelsea Sutton – Permitting Lead
- Warren Miller – Project Manager
- Steve Roznowski – Hydraulics Lead
- Darrick Huff – Mechanical & Electrical Lead

Merjent

- **Robb Roos**
- Andrea Sampson
- Ken Leister

Streamside Ecological Services

- **Mike Nurse**
- Aaron Snell

Central Michigan University (CMU)

- **Daelyn Woolnough**

Herpetological Resource and Management

- **David Mifsud**

GEI Consultants

- **Paul Drew – Program Manager**
- Jim Nickerson – Secord & Smallwood Design Lead
- Mike Carpenter – Edenville Design Lead
- Andy Baxter – Sanford Design Lead
- Bill Walton – Engineer of Record

FEDERAL AND STATE AGENCIES

Natural Resources Conservation Service (NRCS)

- Todd Zielinski
- Dan Vasher

Michigan Department of Environment, Great Lakes, and Energy (EGLE)

- Dam Safety (Part 315)
 - Michael Size
 - Luke Trumble
- Inland Lakes & Streams (Part 301), Wetlands (Part 303), Floodplains (Part 31)
 - Jerrod Sanders – EGLE Assistant Director
 - Anne Garwood – EGLE Wetlands, Lakes, and Streams Supervisor
 - Mike Pennington – EGLE Wetlands, Lakes, and Streams
 - Brian Rudolph – EGLE District Supervisor, Bay City District Office
 - John Bayha – Floodplain Engineer, Kalamazoo District Office

Michigan Department of Natural Resources (MDNR)

- Randall Claramunt – Lake Huron Basin Coordinator
- Jessica Mistak – Habitat Management Unit Supervisor
- Jeffery Jolley – Fisheries Unit Supervisor
- April Simmons – Fisheries Management Biologist

U.S. Fish and Wildlife Service (USFWS)

- Jessica Pruden – Fish and Wildlife Biologist
- Peter Hrodey – Unit Supervisor, Sea Lamprey Control

Environmental Recovery & Restoration Objectives

1. RECOVERY

- Damage assessment
- Stabilize dams to stop erosion and protect the public
- Debris removal
- Shoreline erosion mitigation

2. ENVIRONMENTAL IMPACT OF DAM REPAIR AND RESTORATION

3. RESTORATION

- Lake levels
- Stream function
- Wetland rehydration

4. LAKE MANAGERMENTS PLANS

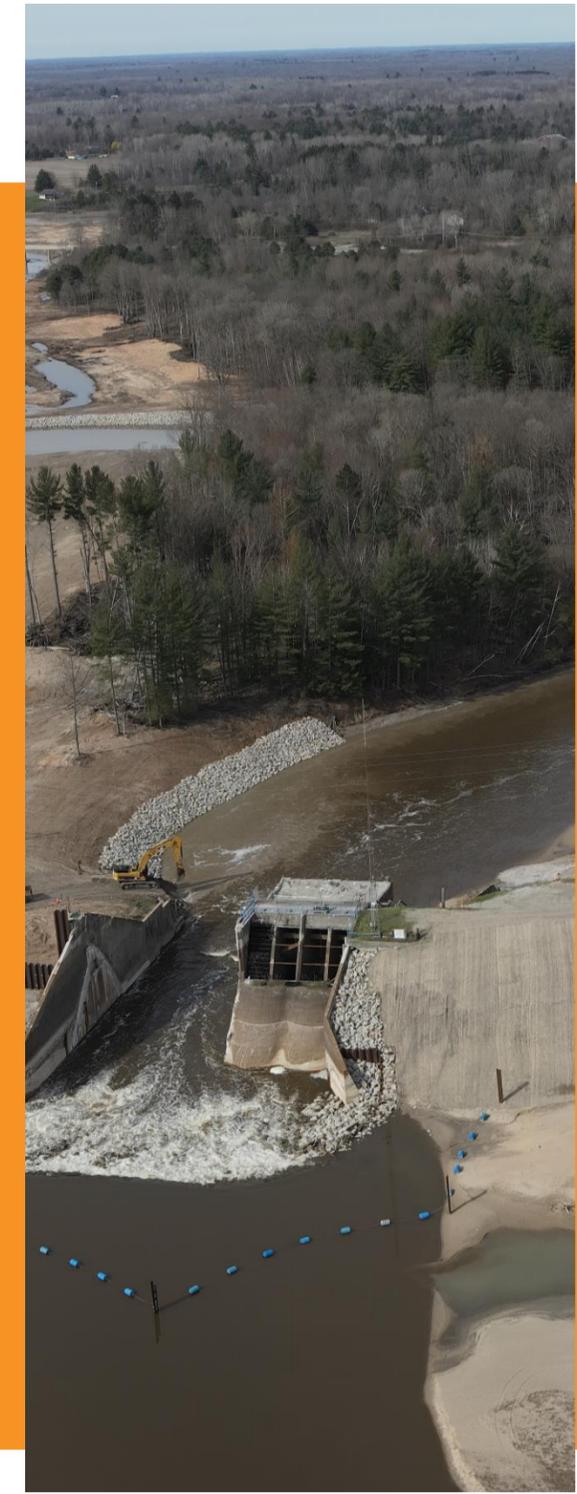
Environmental Damage Assessment



- Organism community research review
 - Mussel surveys of all four lakes completed by CMU
 - Summary of reptile, amphibian, avian, and fish communities and available habitat completed by Streamside, Merjent and Herpetological Resource and Management
- Culvert and stream condition surveys
 - Perched culvert locations
 - Current stream conditions
- Stakeholder coordination

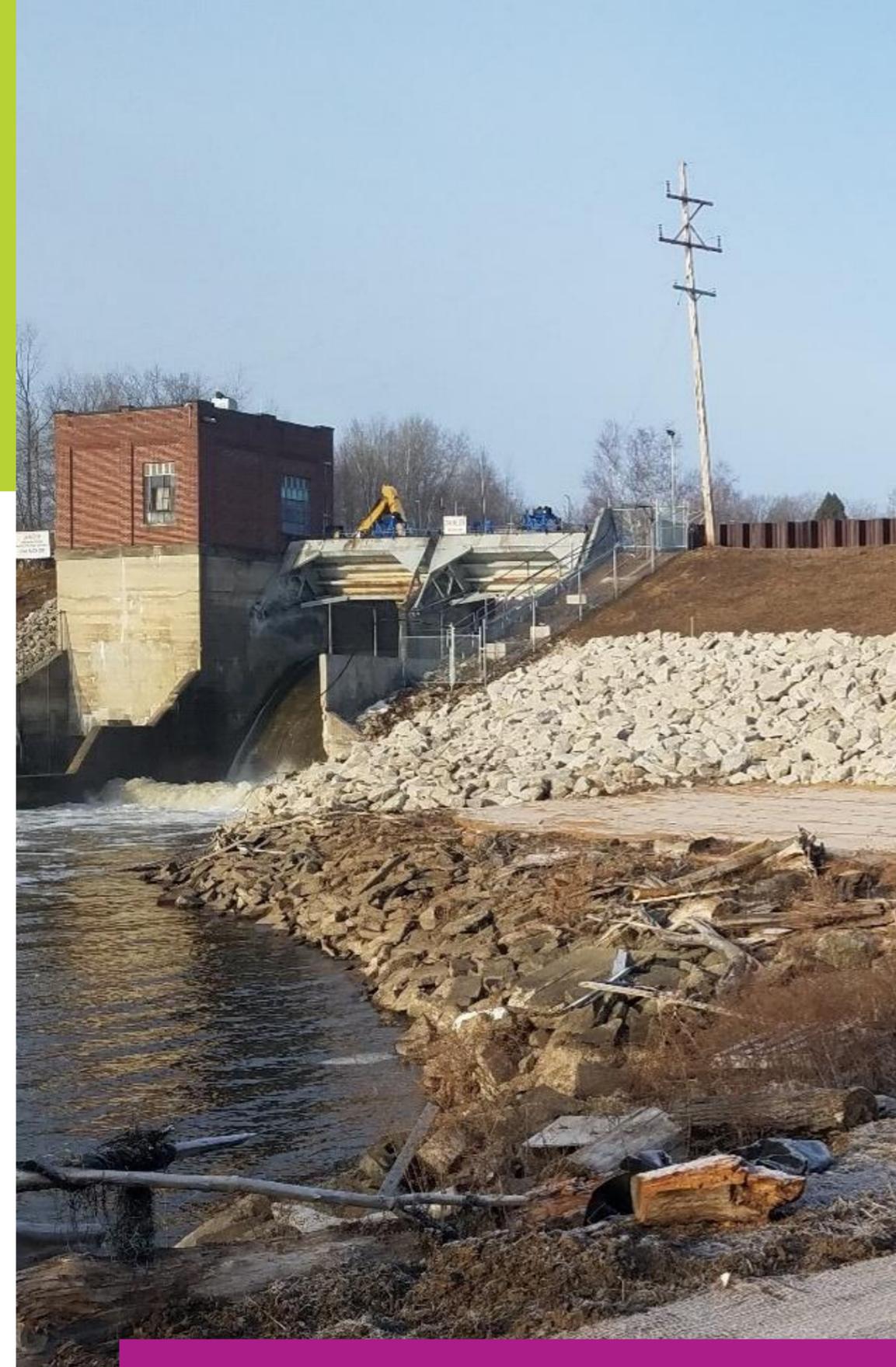
Restoration Efforts to Date

- Interim dam stabilization efforts
 - Work has been completed at all four dams
- Debris removal
 - Sanford – Over 1,044 debris points identified for removal
 - Wixom – Over 1,307 debris points identified for removal
- Shoreline/ culvert stabilization
 - Natural Resources Conservation Service (NRCS) Emergency Watershed Protection (EWP) program
 - Over 10,600 feet of shoreline restored



Restoration of Secord & Smallwood Lakes

- Dams did not fail, but needed emergency repair and long-term upgrades to meet current standards
 - Specifically concerns on winter operations
 - Lakes are to be lowered until upgrades are made
- Environmental permitting impacts limited to construction of improved dam structures
 - Dam construction footprint/property wetland delineations
 - EGLE permit applications are submitted and off public notice
 - Ongoing coordination with other agencies on additional permitting requirements outside EGLE



Restoration of Wixom & Sanford Lakes

- Wixom Lake/Tobacco River water was lowered for stabilization work
- Dams failed which changes permitting requirements for restoration
- Ongoing coordination with EGLE, MDNR, USFWS to ensure all required permit items are addressed
- Will require additional documentation and monitoring for:
 - Part 301 – Inland Lakes and Streams
 - Part 303 – Wetlands



Lake Level and Stream Function



- Run of river dam operation/maintaining base flows
- Lake level restoration will restore lake habitat and reconnect tributaries
 - Restoration of historic connections to spawning areas
- Culverts no longer perched due to increased lake level
- Reduction in sedimentation downstream

Wetland Impact Analysis

- Adjacent Wetland Impacts
 - Desktop analysis and review of well data
 - Groundwater monitoring wells for field verification
 - Study implemented Spring 2022 and will be in place through restoration of lake levels
 - Coordination with EGLE
- Lake Bottomlands
 - GIS and imagery analysis of current condition of lake bottomlands
 - Vegetation community types
 - Wetlands
 - Field verification and classification
 - Coordination with EGLE



Planned Restoration Efforts



- Habitat enhancements
 - Enhanced spawning areas at tailrace
- “Soft” shoreline demonstration project
- Sea lamprey barriers
- Lake management and recreation plans
 - Collaborative effort with MDNR
- Continued stakeholder coordination and search for additional funding for other opportunities



Conclusion

1. FLTF has completed and committed to 25+ permitted projects that have positively impacted the ecosystem and public.
2. Significant habitat capacity will be improved when the lake levels are returned.
3. Habitat and fisheries will take years to return to the health prior to the failures, and Lake Management Plans will be put in place to manage the stewardship of the environment.
4. FLTF will continue to work collaboratively and solicit input from EGLE, MDNR and other agencies throughout the duration of the restoration project and after the lake levels are restored.