



Four Lakes Task Force

FOUR LAKES TASK FORCE

3-Year Progress Report

MAY 19, 2023

Introduction

It has been three years since the Edenville Dam failure and we can be proud of our progress toward restoring Secord, Smallwood, Wixom and Sanford lakes and their dams. 2022 saw the completion of the Recovery Phase program and its over 30 projects and we moved solidly into the Restoration Phase for all four properties. The notable milestones in 2022 were:

- Stabilized Secord, Smallwood, Edenville and Sanford dams resulting in safe and stable structures, until the proposed new dam designs can be implemented.
- Removed debris from Sanford Dam, Sanford Lake, Wixom Lake and downstream including on the bottomlands.
 - On Sanford Lake, 1,044 debris points (trees, boat lifts, milled and miscellaneous wood, man-made debris, unknown items) were removed.
 - On Wixom Lake, 1,307 debris points were removed.
- Protected 10,634 feet of shoreline using 48,335 tons of riprap among other materials.
- Conducted hydraulic studies and engineering designs based on the 2021 precipitation and hydrology analysis increasing the capacity of each dam from 100% to 300%.
- Accomplished significant environmental studies and fieldwork.
- Acquired Secord and Smallwood dam permits, and construction is underway with Fisher Contracting Co. selected as the general contractor.
- Completed design engineering for Edenville and Sanford dams to move them through the permitting process – we are now at 100% design.
- Implemented the Operations and Maintenance Assessment for the Four Lakes Special Assessment District.

In 2023 we expect all four dams to be permitted and under construction. This will be an incredible achievement since the dam failures of May 19, 2020. We appreciate the support we've received from many donors, individuals, organizations, and elected representatives, and we value the constructive engagement of state and federal agencies in the effort to bring back our lakes.

We have much left to do and many issues to solve, but we built an organization with volunteers and experts that I am confident can keep us on a certain path to bring back the lakes. Once again, it is because of the tremendous efforts of hundreds of people with a common vision to restore the lakes.

Thank you for your ongoing interest in our work and progress.

Dave Kepler, President, Four Lakes Task Force

Dam Design and Construction

Designed for Safety and Environmental Restoration

INFLOW DESIGN FLOOD. The dams were designed based on Federal Emergency Management Agency (FEMA) guidelines on inflow design flood (IDF). Calibrated using new precipitation and flood studies and followed by Informed Risk Decisions, the dams are significantly greater in capacity. For example, the May 2020 flood is estimated to be between the 100- to 200-year flood. Overall, these dams will be designed for flood frequencies of over 5,000 years.

RUN OF THE RIVER. The dams will operate as “run of the river” facilities. This means the dam gates are operated to keep a normal “legal” lake level, such that the outflow from the dam is equal to the water flowing into it. The dams will not store additional water in the lake therefore, the lake levels will not fluctuate as much as they did when the dams produced power. The lake level will be more stable and downstream of the dam the river will be a natural flow, with less negative impact on the shoreline and environment.

Dam by Dam Updates



Secord Dam

Reconstruction started in 2022, with a project to put sheet piling across the embankment to prevent seepage. The auxiliary spillway sheet pile installation is underway and the next step is excavation. A cement plant was placed near the dam location, and site improvements for construction are 75% complete.



Smallwood Dam

Reconstruction is now underway at the Smallwood Dam site. Most recently, Fisher Contracting installed a silt fence (sediment control device used on construction sites to protect water quality) for the left embankment. Auxiliary spillway sheet pile installation and excavation are underway and approximately 20% completed. Site improvements are 60% complete. Powerhouse demolition and machine removal have begun.



Edenville Dam

FLTF learned that FEMA and the Michigan Department of Environment, Great Lakes, and Energy (EGLE) will require a Conditional Letter of Map Revision (CLOMR) for the FEMA 100-year Flood Insurance Plain below the Edenville Dam to the Sanford Dam. We have a target to complete this by the end of the year. We can start to construct and rebuild the embankment and its cutoff wall around June of 2023, and sequence the remaining restoration project in 2024.



Sanford Dam

FLTF is working on strategies to reduce the overall project cost, given the bids recently received. In the meantime, a pull-ahead work package is being assembled for construction readiness to keep the project on schedule while we explore total restoration contracting options. We expect EGLE to go to public comment in May and start construction this summer.

Environmental Restoration

FLTF continue to engaged environmental experts Streamside Ecological Services, Merjent, Herpetological Resource and Management, Central Michigan University, Spicer Group and GEI Consultants, to conduct environmental reviews of the lakes' ecosystems to be used in restoration planning and permitting.

This has included studies of reptile, mussel, amphibian, avian and fish communities and available habitat; culvert and stream functions; perched culvert locations; wetland status; imagery analysis of lake bottomlands; and current stream conditions.

FLTF will continue to engage with EGLE, the Michigan Department of Natural Resources (MDNR), U.S. Fish and Wildlife Service (USFWS) and other agencies throughout the duration of the restoration project. Below are examples of FLTF priorities for environmental restoration as we rebuild the dams:

- Habitat enhancements
- Enhanced spawning areas at tailrace areas of the dams
- "Soft" shoreline demonstration projects
- Sea lamprey barriers (sea lamprey mitigation is currently underway)
- Lake management and recreation plans



FLTF continues to coordinate and search for additional funding for other environmental improvement and recreational opportunities.

Funding and Financing

Preparations to implement a Capital Assessment by early 2024 are underway, with funds to be paid by property owners likely in 2025. U.S. Army Corps of Engineers (USACE) loan funding will be critical to enable FLTF to keep annual assessment costs down and create greater certainty in the FLTF timeline for financing.

Impact of U.S. Army Corps of Engineers Financing

Rising interest rates have been a headwind for our project. FLTF recently met with USACE about its Credit Assistance and Related Fees for Water Infrastructure Projects or CWFIP loan program.

FLTF provided input on the rulemaking on this program last year, and \$7.5 billion was appropriated to fund the CWFIP loan program. The CWFIP program is a new program for the Army Corps, and they will be releasing pre-application information in late May to early June. In preparation for that release, FLTF met with the Army Corps staff that will administer the program and the Army Corps indicated

FLTF would be a good fit for this program, and all currently available information online seems to support as well that FLTF would fit well within the guidelines of their program.

This financing provides treasury rates plus one basis point, a significantly better rate than could be obtained using traditional municipal financing and therefore would provide significant benefits of affordability to the community.

Current Project Estimates

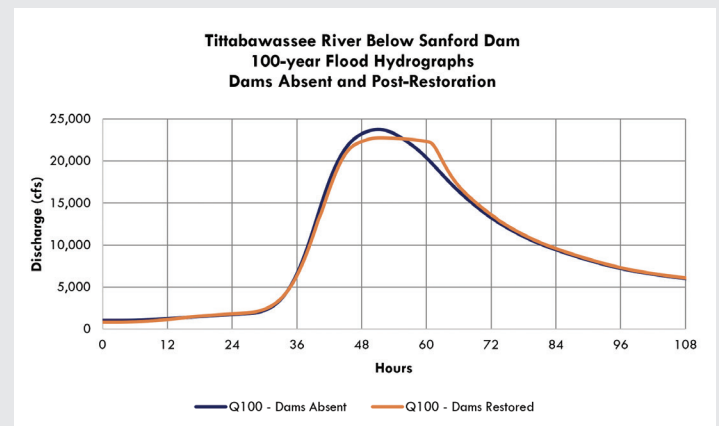
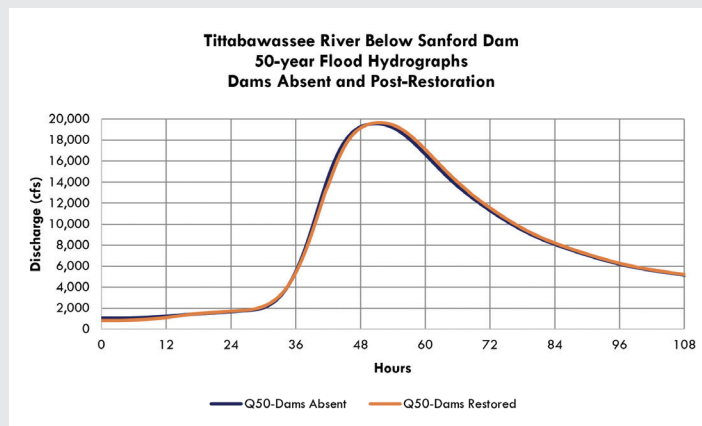
The 2020 overall project estimate of \$240-270 million has not been adjusted but given inflation and the construction market it is unlikely the project will be below \$250 million. Once bid selection on the Sanford project is complete, there will be an update to the estimates. The table below shows the estimated amount of assessment based on total project cost. \$250 million assessment numbers are about 20% higher than estimated last year.

Assessment; 35 year term based on project cost, 4%				
Total restoration project cost	Total assessment principal	Annual payment by apportionment		
		25% of parcels are under (.50)	50% of parcels are under (.70)	75% of parcels are under (.80)
\$290 Million	\$14,155.00	\$505.00	\$705.00	\$808.00
\$270 Million	\$11,325.00	\$405.00	\$565.00	\$650.00
\$250 Million	\$8,490.00	\$305.00	\$425.00	\$485.00

Downstream of the Dams

The original dams were not built for flood control and the future use of the restored dams will not be for flood control. The below hydrographs demonstrate this. There is not enough capacity in the Four Lakes system to build flood control dams that would justify such an investment or have a material mitigation impact.

While the dams will not control floods, neither will they increase flooding. FLTF believes it's incumbent on our organization to share data, knowledge and expertise with downstream partners to aid in the effort to improve the resiliency of the community to flooding. To this end, we are collaborating with the Midland Business Alliance Advisory Committee on Infrastructure, a task force formed to find the best ways to work with local, state and federal partners to address longstanding flood issues that impact the citizens, business community and economic development in the region.



A View of Dam Operations

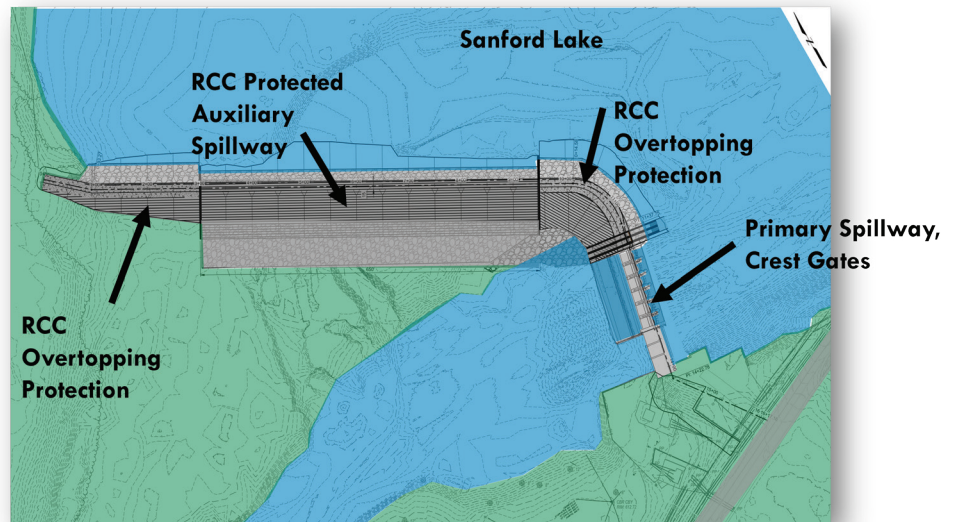
All four dams will have new and/or improved safety design features:

- Embankment stabilization
- Seepage repairs (cutoff walls, toe drains, flattened slopes)
- Concrete repairs
- Spillway structures with larger crest gates
- New low-level outlets
- New auxiliary spillways

Using Sanford Dam as an example, restoration will consist of the following major improvements:

- Increase spillway capacity
- Reconstruct right embankment
- Repair left embankment
- Add low-level outlet to pass base flows
- Use reinforced cement concrete (RCC) to withstand high tailwater levels

Sanford Dam Restoration



Rendering last updated April 20, 2023

What to Expect in 2023 and Beyond

PERMITTING. Permits are yet to be obtained for Edenville and Sanford dams although we have positive forward progress. Permitting is expected to be in the public comment period in the coming months. Remaining issues to close for Sanford and Edenville permitting:

- EGLE acceptance of FLTF plans for environmental permitting
- Endangered mussel environment impact assessment with USFWS
- Conditional Letter of Map Revision (CLOMR) to FEMA floodplain

CONSTRUCTION. Second and Smallwood construction is underway. As already noted, bid estimates for Edenville and Sanford are being reworked but we plan to have construction underway on both dams this year.

FUNDING AND FINANCING. We will work with the U.S. Army Corps to establish a loan for the remaining financing needed for completion and are still seeking other grants and donations. A Capital Assessment process will occur in the second half of the year. Capital Assessment payments will likely start in 2025.

COMMUNICATIONS. FLTF has a robust communications calendar planned. Watch your email and our website.

In Summary

Four Lakes Task Force has navigated challenging economic, environmental and construction conditions to maintain the restoration schedule for bringing back our lakes. We made significant progress toward that end in 2022 and will continue this strong trajectory in the coming years.

We wish to thank the many donors, individuals, organizations, elected representatives and regulatory bodies who are all helping to bring back our lakes.



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