
The Path Forward for the Four Lakes of Gladwin and Midland Counties

The Last Two Years

In the 1920s, the Edenville, Sanford, Smallwood and Secord Dams were built to generate electrical power, creating four lakes. While interstate electric grids and efficient large generating plants diminished the value of the hydroelectric facilities over the past nearly 100 years, the lakes have become a naturalized part of the environment and have created significant economic, recreational and social benefits to our community and the counties of Gladwin and Midland. The fisheries and ecosystems that have developed around these systems have been an asset to the communities and the state.

In early 2018, the Federal Energy Regulatory Commission (FERC) initiated the process to revoke the hydroelectric generating license for the Edenville Dam for failure to make necessary capital improvements. This and all the dam's affiliated entities (Boyce Hydro) are owned by the Boyce Trust.

Shortly after, in a call to action, a group of lake property owners highlighted the basic issue that a privately owned dam and the revenue associated with electrical generation did not provide sufficient revenue capacity, evidenced by the fact that the dams were underinvested. At that time, there was no public structure representing or speaking on behalf of the counties and its communities to address their long-term needs.

In collaboration with Midland and Gladwin counties, a group of volunteers came together to form Four Lakes Task Force (FLTF.) The FLTF board established a mission to maintain lake levels into the future by acquiring the rights to operate and maintain the dams and lake bottoms, ensure all dams become and remain compliant with state and federal safety standards, and establish a local authority to responsibly manage the dams.

In accordance with the legal framework under Part 307 of the Michigan Natural Resources and Environmental Protection Act, state lake levels were established and the FLTF undertook significant due diligence to study, develop an improvement plan, and secure engineering to begin design. In December 2019, FLTF entered into a purchase agreement to acquire the four dams and related bottomlands, and an option and first installment to purchase was scheduled for June of 2020.

On May 19, 2020, two years into the FLTF effort to acquire and improve the dams and sustain our lakes, the Edenville Dam failed, the lakes were lost, and thousands of people were impacted and are still struggling to recover. FLTF has the authority pursuant to Part 307 Michigan's Natural Resource and Protection act, and as the Delegated Authority for Gladwin and Midland Counties to stabilize and rebuild the infrastructure required for these lakes.

The Future of the Four Lakes

FLTF has the authority pursuant to Part 307 for the Counties to rebuild the infrastructure required for these lakes. Safety and quality of life are paramount. We can rebuild a four-lake system that will be safe and help manage floods.

The Plan

Over the Next Three Years We Must:

1. Stabilize the four dams and lake bottoms this year.
2. Acquire the properties and develop a restoration plan.
3. Study flood impacts and develop a feasible design.
4. Design for the next 100+ years and start to rebuild our future.

Gaining Control of the Properties

There is no viable scenario where the existing owner or any other private owner can restore the dams and lakes. It was not viable before the dam failures and now is a barrier to moving forward. There are huge liabilities and cleanup costs with no real path available to a private operator for federal and state funding.

FLTF, as the counties' Delegated Authority under Part 307, has begun the process of acquiring the properties through condemnation and is developing transition plans to manage the four dams in their damaged and drawn downstate. Midland and Gladwin counties have approved the condemnation of the land required to maintain the legal levels and restore the lakes.

Evaluation and Stabilization

The immediate focus is to work with homeowners to provide resources and guidance on how to manage erosion that may impact their homes and properties. FLTF has undertaken a first pass assessment, between dam stabilization, erosion mitigation and debris removal. The cost to address these items could be as much as \$40 million. We have provided our report to FEMA, FERC, USDA, and others. While the State of Michigan sees Boyce as accountable for this, we cannot depend on that, and little grant money is available to improve private infrastructure. We need to ensure these items are funded and addressed quickly, and we are working with all the agencies to find the best path forward.

Independent Investigation

On May 20, the director of the FERC Division of Dam Safety and Inspection ordered Boyce Hydro Power, LLC to draw down the remaining impounded water behind the Sanford, Smallwood and Secord Dams and immediately form a fully Independent Forensic Investigation Team to focus on the above three licensed dams. The State of Michigan has declared that Michigan's Department of Environment, Great Lakes, and Energy (EGLE) will coordinate with FERC on the forensic investigation of the unlicensed Edenville Dam.

Boyce recently completed assembling the investigation team and our FLTF's dam consultant agrees that the members are of high quality and integrity. However, we prefer that Boyce, the State and FERC would have followed the model of the March 2019 failure of the Spencer Dam in northern Nebraska. The Nebraska Dam Safety Program and the dam owner agreed that the failure should be investigated by the Association of State Dam Safety Officials (ASDSO), a nationwide, independent organization specializing in dam safety. To ensure independence, neither the regulator nor the dam owner had any input on the selection of the team members or

oversight of the team’s activities. Similarly, in 2017 ASDSO collaborated with the United States Society on Dams to recommend members for the Independent Forensic Team (IFT) to investigate the failure of the Oroville Dam.

Regardless, these investigations will take six months to 24 months according to FERC. The Oroville Dam took approximately a year. Let us hope the State and FERC have chosen wisely on the path forward. This is a critical issue in starting our rebuilding and restoration plan. The State, FERC and Boyce must make sure there is funding of this effort, and we hope that the lawsuits do not create a situation that impedes the work of the forensic investigation team.

Flood Studies

FERC requires flood inundation studies for intermediate and high hazard classification dams, but these studies are not necessarily integrated into other planning processes in the community.

As part of its diligence, FLTF reviewed the existing Probable Maximum Precipitation (PMP) and Probable Maximum Flood (PMF) events studies to verify and establish the design criteria for spillway capacity at Edenville and Secord. We need to expand these studies given this recent flood and go further downstream to understand flood impacts under the existing conditions and how to rebuild and operate the dams, to not only withstand future floods - but help mitigate them.

This needs to start immediately. FLTF will engage stakeholders this summer to fund and expand our efforts for a robust and expanded Flood Study. We will also be looking to expand flow monitoring on the Lakes.

Rebuilding and Restoration of the Lakes

Year 3 of the plan calls for developing a feasible plan by the end of 2021 to rebuild the dams. This is highly dependent on the timing for the completion of the forensic investigation. It is anticipated, based on the reasonable estimate from our dam consultant, that the design costs to restore and repair the four dams could be \$40 to \$50 million in engineering and design alone. Assuming the independent investigations are completed in one year, our best estimates to restore the four dams and lakes are:

- Sanford 5 Years
- Edenville 6 Years
- Smallwood 3 years
- Secord 4 years

Is it possible that the lakes may be restored earlier? Maybe, but FERC, the State, and the counties will all need to agree that the four dams are safe. It is likely that all the dams, including Secord and Smallwood dams, will need to comply with new standards.

Can Secord and Smallwood come up faster, as they just need repair? That premise may not be correct. We know Secord needs additional spillway capacity, and the dikes on all these dams are going to require different design methods and materials. Given that the dams were all built and maintained with similar design and construction methods, all dams are being investigated.

Funding Requirements

Program Costs: Expenditures over the next three years could total as much as \$8 million. This would be to run the program, acquire the dams, and manage them in their present state. We plan to get that funding from:

- Individual Donors \$1,000,000
- Foundations and Institutions \$3,000,000
- Government Grants \$4,000,000

Dam and Lake Bottom Evaluation and Stabilization: It is estimated that dam stabilization, debris removal and erosion control could cost as much as \$40 million. While we certainly maintain that Boyce Hydro is accountable for these costs, it is highly unlikely we can expect any financial recovery from Boyce given the multitude of legal issues and other claims. Nonetheless, this is a critical issue for the community. We are engaging all federal and state agencies and private foundations to determine the support available under the existing ownership structure and in the new ownership structure.

Feasibility and Engineering Studies: In 2022 through 2024, there will be a need for approximately \$50 million to determine and design the improvements and in many cases build new infrastructure. We are seeking federal funding to help offset these costs.

Construction costs for all four dams: Currently, the first preliminary estimated construction costs, without hydro electrical capability, is \$220 million (with the assumption the four dams will meet all federal flood and spillway capacity requirements). While operation of the dams can be refined to improve flood control, this does not include provisions for additional flood storage capacity. The new studies may identify further requirements as we go forward.

Feasibility

This is a prudent investment for this community, given the impact that flooding has had and the cost avoidance by addressing future impacts. FLFT represents a Special Assessment District that contains property with \$800 million of market value and a key source of taxes for both counties. These lakes bring thousands of people to their waters every year for recreation. They have been one of the best fisheries in the state.

The plan is feasible with funding from downstream partners, state and federal grants, with support from the Army Corp of Engineers, USDA, and other agencies. Any remaining funding would be provided by the current Special Assessment District.

Getting Started

Four Lakes Tasks Force is committed to a future in Midland and Gladwin counties with these four lakes restored and to restore the economy, renew these wonderful assets and create an affordable and safer future for those that live on and downstream of the lakes.

In the spirit of who we are as a community, we can recover from this event and renew these wonderful assets to bring back quality of life for those that live on and downstream of the lakes.