



LIVINGSTON COUNTY, MICHIGAN
OFFICE OF THE DRAIN COMMISSIONER

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Memorandum

To: Livingston County Board of Commissioners

From: Ken Recker, P.E.

Date: 11/30/23

Re: Thompson Lake Dam Update

Honorable Commissioners:

The Thompson Lake Dam and downstream spillway is located within the City of Howell in Livingston County. Thompson Lake was originally formed by the construction of a dam for sawmill operations in the mid 1800's which connected three small lakes into one larger waterbody. The current dam which was last re-constructed in 1999 consists of concrete wing walls on both the upstream and downstream sides including an earthen embankment. The control structure consists of a concrete box weir with two openings (log gate and a sluice gate) used for water level operation. The original dam was constructed for mill operations which included a water wheel. The elevation changes in the old mill race area presented a challenge for downstream conveyance from the dam where a 72" culvert is currently located.

The purpose of this update is to inform you of current concerns regarding the Thompson Lake Dam. Over the past few years, our office has observed continued deterioration of the dam's weir structure and downstream culvert. Operationally, we have also had efficiency issues with the current log gate control mechanism.

There was an attempt to rehabilitate and extend the life of the current downstream culvert in 2014. However, the approved repair was not done correctly by the epoxy contractor hired. The contractor was not compensated for any of their work, but deterioration of the culvert lining has continued, and additional piping has now been recently observed in August 2023. This piping allows water to bypass the culvert, diminishing structural integrity.

The concrete at the dam is also spalling and deteriorating in a few locations. These concrete conditions were identified in a 2021 dam inspection report for the State of Michigan. In the spring of 2023, an installed safety rail support broke and is no longer secured to the concrete weir box. This occurred due to these observed concrete deterioration issues.

An additional concern occurs during high water events with the dam's log gate. Currently, removing stop logs within this gate opening requires use of at least 2 employees and a mechanical winch mounted to an autonomous vehicle. The current operations to remove stop logs restricts our office's ability to act in a timely matter when high water conditions arise.

Due to these noted concerns, our office obtained an engineer's estimate for proposed dam rehabilitation and log gate improvements. Pursuant to Part 307 of the Natural Resources and Environmental Protection Act, the Delegated Authority (in this case, the Livingston County Drain Commissioner) must obtain authorization to exceed the \$10,000 per year maintenance limit for the Thompson Lake Dam from the Livingston County Board of Commissioners.

Any expenditures related to the Thompson Lake Dam would be assessed to the Thompson Lake Level Special Assessment District which includes approximately 838 properties. There would be no assessment to Livingston County.

Within the next month, our office intends to present a resolution to exceed the annual maintenance limit of Ten Thousand (\$10,000.00) dollars under the provisions of Part 307 of the Natural Resources and Environmental Protection Act to the Livingston County Board of Commissioners. Approval of this resolution would authorize the delegated authority, the Livingston County Drain Commissioner, to make the recommended current repairs on the Thompson Lake Dam, downstream culvert, and log gate mechanism.

If you have any further questions regarding this matter, please contact me.

Enclosures:

Thompson Lake Level Special Assessment District Map
2021 Thompson Dam Inspection Report
2023 Thompson Lake Dam Proposal and Cost Estimates
Thompson Lake Dam and Culvert Pictures