

# THE 2020 MIDLAND COUNTY DAM FAILURE

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## Introduction

Over 2,500 homes and buildings were damaged by flooding in mid-Michigan on May 19, 2020, when an aging dam failed on the Tittabawassee River, causing the cascading failure of a second dam immediately downstream. Initial reports indicated that as many as 150 homes and businesses were damaged beyond repair. Approximately 11,000 residents were hurriedly evacuated ahead of the flooding that caused as much as \$200 million in damages. Fortunately, no deaths or serious injuries were reported.

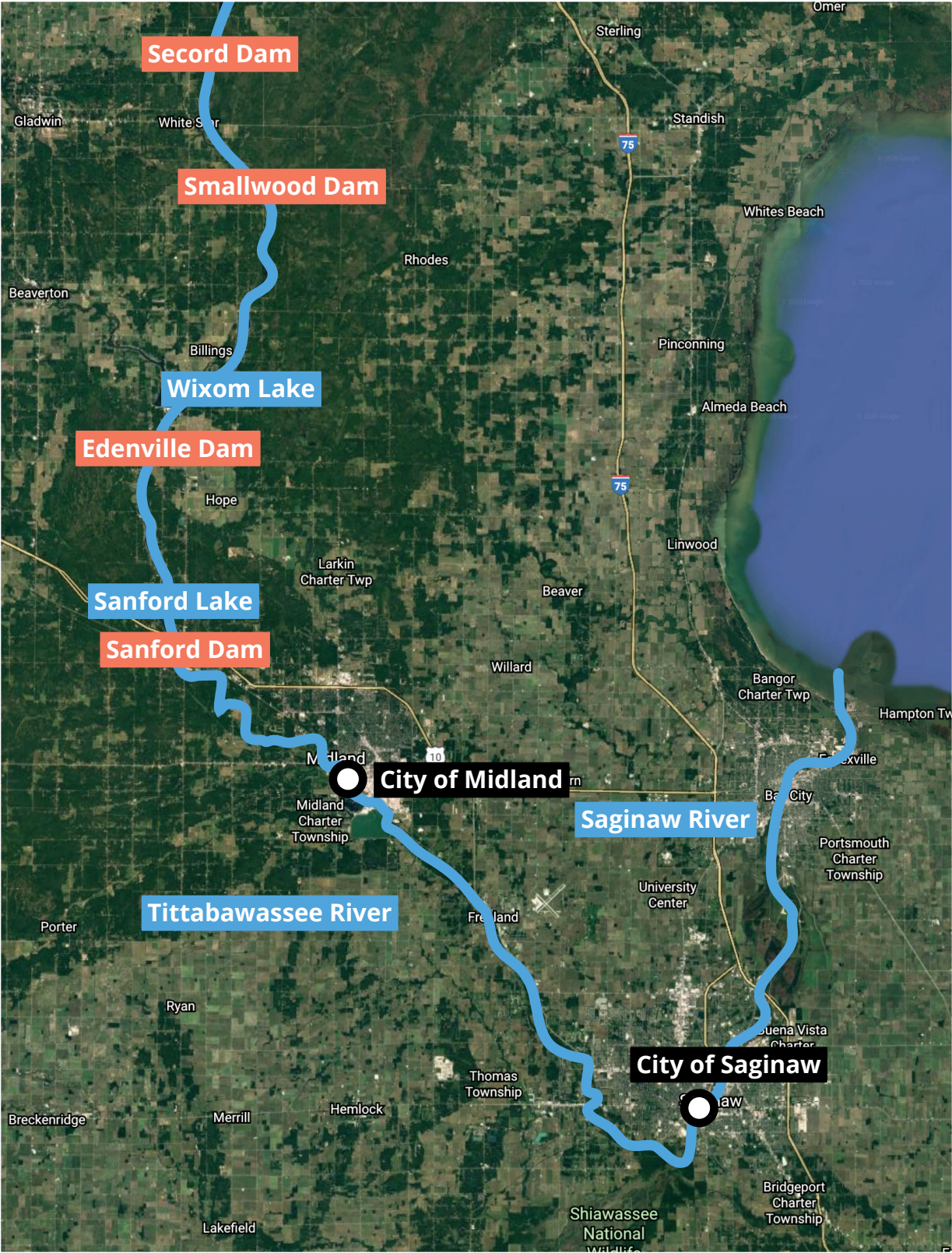
In any other year, the choices made by Boyce Hydro Power, the owner of the failed dams, and state regulators, working in the Department of Environment, Great Lakes, and Energy, might not have led to the failure of the Edenville and Sanford dams. But a major rainstorm compounded the regulatory and financial storms facing Boyce Hydro, and, together, these factors stressed the dams beyond their breaking point.

The Edenville Dam had survived heavy spring flooding in the past. The National Weather Service reports that 11.89 inches fell on Midland County and 7.69 inches fell in Gladwin County from Sept. 10 to 12, 1986, causing the Great Michigan Flood of 1986.<sup>1</sup> Just three years ago, on June 23, 2017, the NWS reports more than six inches of rain fell across Midland and Bay counties.<sup>2</sup>

Preliminary information from the NWS indicates that from May 17 to 19, 2020, Midland County received 4.7 inches of rain, and Gladwin County received as much as eight inches. Rising water levels in Wixom Lake were compounded by strong winds and waves that eventually led to the failure of the Edenville Dam, washing away a 900-foot section of the earthen embankment.<sup>3</sup>

After this dam failed, a surge of water flowed down the Tittabawassee River, flooding portions of Edenville. Sanford Lake, downstream from Edenville, rose rapidly and soon overtopped the Sanford Dam. The combined power of the rain and water from two lakes flowed through Sanford and then flooded low-lying parts of downtown Midland and portions of Freeland.

The Tittabawassee River, which normally runs at approximately 11 feet, crested at the highest level ever recorded in Midland: 35.05 feet.<sup>4</sup> The rain that fell in the Tittabawassee River watershed was a once in a 200-year event and the resulting flood was a once-in-500-year event.<sup>5</sup>



**Secord Dam**

**Smallwood Dam**

**Wixom Lake**

**Edenville Dam**

**Sanford Lake**

**Sanford Dam**

**Tittabawassee River**

**Saginaw River**

**City of Midland**

**City of Saginaw**

The growing weight of evidence appears to show that both the dams' owner and the state agency charged with regulating the dam allowed for the conditions that enabled a historic flood to push the Edenville Dam to rupture.

Rapt media attention has been focused on the increasingly acrimonious legal and verbal battles between government regulators and executives of Boyce Hydro. In the aftermath of the destruction, lawyers and residents of flood-ravaged communities are entering the fray as well. Many are pressing to determine the causes that led to the failure of the two dams. While the legal wrangling continues, the citizens of the flood-ravaged areas are left to rebuild their homes and to try to find a way to restore their communities and the way of life that had grown up around these dams and lakes.

## The Dams

The Edenville Dam is one of a group of four dams that were built in 1924 to generate hydroelectric electricity. It is located about 21 miles north of Midland on the Tittabawassee River.<sup>\*</sup> Flood control is widely recognized as another key reason for dams being added to the Tittabawassee River.<sup>6</sup> The other dams in the group are the Sanford, Smallwood and Secord.<sup>\*\*</sup> All four dams are earthen embankments with concrete spillways.

Edenville was constructed in two sections: one embankment across the Tittabawassee River and one across the Tobacco River. The hydroelectric facilities built with this dam comprise 4.8 megawatts of total generation capacity. The electricity produced by the Edenville Dam has been sold under a long-term power purchase agreement with Consumers Energy, an investor-owned public utility.<sup>7</sup> Water held by the dam formed a 2,600-acre reservoir called Wixom Lake. Water held by the Sanford Dam downstream formed the 1,569-acre Sanford Lake.<sup>8</sup>

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\* The dam is located on the county border between Midland and Gladwin counties. "Dam Information" (Gladwin County, 2020), <https://perma.cc/2MQX-WPZW>.

\*\* The Secord Dam is located 42 miles upstream of Midland. Smallwood Dam is 34 miles upstream. Both are located in Gladwin County. The Sanford Dam is located approximately 10 miles upstream of Midland in Midland County.

## Four Lakes Task Force

The Four Lakes Task Force is a community-led and volunteer effort that has partnered with Gladwin and Midland counties. FLTF points to the financial history and management of the dams and questions whether the hydroelectric generation revenues from the dams can provide sufficient income to ensure their proper and long-term management and maintenance.<sup>9</sup> FLTF has been designated as the “delegated authority” for the counties to help manage these dams.<sup>10</sup>

To reverse the chronic underinvestment and ongoing decline of the dam properties, the FLTF agreed to purchase the four dams from Boyce Hydro in December 2019.<sup>11</sup> The purchase agreement was for FLTF to acquire the dams over a two-year period and, beginning in 2020, to bring them into compliance with state and federal standards, using funds from Midland and Gladwin counties and assessments on local residents.

The task force has worked with the counties and Boyce Hydro to plan for future upgrades and maintenance of the four dams. FLTF also established the Four Lakes Operating Company to operate and act as the licensee of the hydroelectric facilities at the Sanford, Smallwood, Secord and Edenville Dams.<sup>12</sup> The agreed price for the dams and connected lake bottoms was \$9.4 million.<sup>13</sup>

Four Lakes Operating Company was to pay a further \$6.6 million to acquire and manage the hydroelectric dams at each of these locations. FLOC was expected to meet several goals: manage the water levels in the four lakes as required by state law, comply with federal regulations and renew federal licenses for each dam, meet state safety standards, and sell electricity to Consumers Energy and use sales to offset costs of owning the dams.<sup>14</sup>

FLTF planned to mix special assessments — paid by area residents, beginning with the winter 2021 tax bill and continuing for 20 years — with support from the two counties to pay for necessary repairs and upgrades. Repairs were to be carried out on all four dams over the upcoming three years.\*

FLTF had already completed about \$300,000 in repairs to Edenville Dam in early 2020. A further \$2 million in additional work was planned to be completed the following winter.”<sup>15</sup>

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\* Lakefront owners would pay an estimated \$350 annual assessment. Backlot owners would pay an estimated \$88 annual assessment. These assessments were associated with dam maintenance and repairs and were to be managed separately from hydroelectric generation revenues and maintenance expenditures. See: “Special Assessment District” (Four Lakes Task Force, 2020), <https://perma.cc/54Z9-RVXZ>.

After the May 19 flood, however, FLTF are “reassessing the path forward to acquire the Boyce property and rebuild our dams and lakes.”<sup>16</sup> In a public statement, FLTF made it clear that the previously negotiated purchase will not occur, but has reiterated its commitment to completing the purchase and restoration of the dams. The task force stated that their goal is “returning these lakes to a recreational and natural resource gem of the region.”<sup>17</sup>

FLTF has published an updated three-year plan to achieve four key restoration objectives:

1. Immediately minimize erosion of the lake beds and lakeshore properties.\*
2. In year one, acquire the dams and lake beds and establish a restoration plan for each.
3. In year two, complete federally required flood studies that will allow the task force to target full compliance with federal and state regulations.\*\*
4. In year three, create a plan to complete the reconstruction of the damaged dams.

FLTF is targeting the restoration of the four lakes within a six-year period: Smallwood in three years, Secord in four, Sanford in five and Edenville in six.

FLTF believes the long-term prospects of completing these tasks are good, given that several long-standing communities have grown up around the dams and lake and “created significant economic, recreational and social benefit” to the area. The Midland and Gladwin county governments also support the new plan, and funding for the project seems promising as the property values in the special assessment districts around the lakes is valued at about \$800 million. State and federal grants may also be available.

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\* The Patricia and David Kepler Foundation gave a \$100,000 grant to FLTF to host a “Shoreline Erosion Engineering Fair,” on June 18 and 20, 2020, where “residents impacted by the Tittabawassee River flood” were able to “talk to engineers and shoreline erosion experts free of charge about how to remediate [their] property and stabilize [their] shoreline.” The event allowed residents to “create a plan to slow the erosion taking place on [their] property.” “Shoreline Erosion Engineering Fair” (Four Lakes Task Force, 2020), <https://perma.cc/EGK6-23M7>.

\*\* In a June 10, 2020, presentation by EGLE representatives to the Michigan Senate Energy and Technology Committee, Luke Trumble, a dam safety engineer with EGLE pointed out that a high hazard rating describes the potential damage that could be caused to life, property, and infrastructure if a dam were to fail. It does not indicate the likelihood that a dam will/will not fail. Therefore, a completely safe, properly maintained dam can have a high hazard rating.

## FERC and Federal Regulation of the Edenville Dam

The Federal Energy Regulatory Commission issued a license to generate electric power to the Edenville Dam in October 1998. In June 2004, the Edenville Dam and its associated 4.8 MW hydroelectric generation facility were acquired by Synex Michigan from Wolverine Power Corporation. Boyce purchased Synex in March 2006 and changed the company's name to Boyce Hydro Power in July 2007.<sup>18</sup>

As part of any dam's operating requirements, FERC mandates minimum maintenance and safety requirements. But a February 2018 FERC report revoking the operating license for the Edenville Dam describes "a long history of non-compliance with" their license conditions under the Federal Power Act and FERC regulations.

Seven primary concerns were listed in the FERC report, charging that Boyce Hydro:

1. Did not expand spillway capacity to ensure the dam could handle a "probable maximum flood," or PMF;<sup>\*</sup>
2. Carried out unauthorized dam repairs;
3. Carried out unauthorized earth moving;
4. Did not file an "adequate Public Safety Plan;"
5. "Unduly restricted public access" and did not "construct approved recreation facilities;"
6. Failed to "acquire and document all necessary project private property rights;"
7. Did not comply with the FERC order that approved the company's Water Quality Monitoring Plan.

The order says the existing spillway capacity of the dam was sufficient to handle, at most, 50% of the PMF, noting "[f]ailure of the Edenville dam could result in the loss of human

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\* Probable maximum flood is defined by FERC as, "The flood that may be expected theoretically from the most severe combination of critical meteorologic conditions that usually produce the PMP [probable maximum precipitation] and critical hydrologic conditions that are reasonably possible in the drainage basin under study." See: "Determination of the Probable Maximum Flood" (Federal Energy Regulatory Commission, Sep. 2001), <https://perma.cc/ZNZ9-DUYT>.



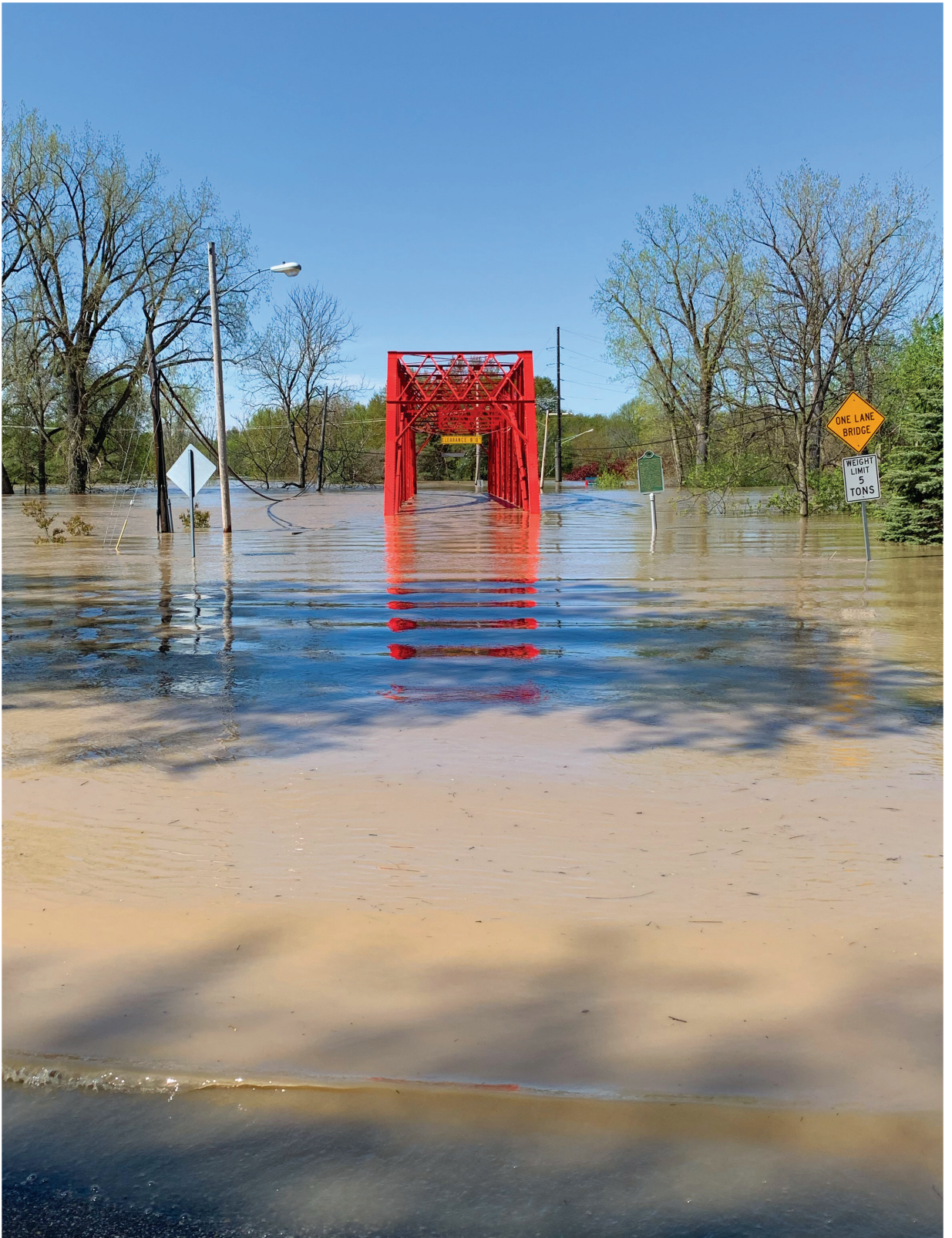
life and the destruction of property and infrastructure.” Boyce Hydro was granted two extensions in 2017 but had failed to comply with these requirements.\* The company did not seek to have their compliance order reconsidered and admitted to having not complied with the order.

A just-released inspection report, commissioned by the Four Lakes Task Force and completed by the Saginaw-based engineering and surveying firm, Spicer Group, Inc., largely agrees with the FERC assessment, but adds that the dam did not even meet the state’s 50% PMF requirement. It reiterates that FERC regulations required Edenville Dam to pass “the full PMF,” which was calculated as 61,296 cubic feet per second.<sup>19</sup>

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\* The order notes they appeared to have acquired and documented the required property rights and had met portions of the Water Quality Monitoring Plan. However, local reports indicate that the owner of Boyce Hydro had a rocky relationship with property owners in the area due to his attempts to pass the costs of dam maintenance, property taxes, and other business expenses on to residents. See: Andrew Dodson, “Sanford Lake Dam Owner Says He’s Not Paying for \$83,000 Repair Project” (MLive Media Group, Jan. 2019), <https://perma.cc/B63R-TFT6>.





FERC had ordered Bruce Hydro to upgrade to meet the federal standard of full PMF, but the company repeatedly argued the \$8 million price tag to build additional spillway capacity was beyond its financial means. The company attempted to get local residents to pay a portion of the costs but was rebuffed.<sup>20</sup>

Following the revocation of the facility's federal license, jurisdiction for the dam transferred to the state of Michigan, specifically the Department of Environment, Great Lakes, and Energy and the Department of Natural Resources.

## Department of Environment, Great Lakes, and Energy

After assuming jurisdiction over the Edenville Dam in 2018, EGLE completed an initial inspection and engineering review.<sup>21</sup> This short inspection report, completed in October 2018, noted the dam had been maintained in “fair structural condition” by Boyce Hydro, with its “earthen embankments ... well maintained, with only a few bare spots, minor erosion, and no visible signs of significant distress (sloughs, slumps, differential settlement, cracking, sinkholes, etc.).” The report explained that drains were functioning properly, but that the concrete spillways did show signs of “moderate deterioration (spalling, exposed reinforcing steel, minor cracking and efflorescence.” Despite that deterioration, the spillways were described as “stable and functioning normally.” The state's engineer reported that “there were no observed deficiencies that would be expected to cause immediate failure of the dam.”

After the dam's failure on May 19, 2020, the department claimed that it had “strong concerns” about the dam's limited spillway capacity when they assumed jurisdiction in 2018.<sup>22</sup> Despite this claimed concern, it is important to note that EGLE's initial inspection report did not recommend repairs or upgrades to the dam. Although the report did briefly note the revocation of the FERC license, it did not mention limited spillway capacity and did not recommend further inspections.

After the flood, EGLE officials also stated they were waiting on a structural assessment of the dam to confirm whether the dam complied with the state's spillway capacity regulations. They note the report had been expected in March 2020, but it had not yet been submitted to the agency.

Lawyers from both Boyce Hydro and the FLTF have questioned these claims because FERC's safety reports on the dam were made available when EGLE assumed regulatory authority. According to the Spicer report, there were eight safety and inspection reports, dating from 1973 to 2015, that were available for review. They also note that the initial findings of the Spicer report, which include information from a summer 2019 inspection, pointed out that the dam lacked sufficient spillway capacity to meet state regulatory requirements of 50% of PMF.

Both the FLTF and Boyce Hydro maintain that the results of these inspections had been communicated, verbally and in writing, to EGLE in September 2019.<sup>23</sup> Furthermore, the FLTF has explained that Spicer did not submit the final report to the state because EGLE verbally instructed them to retain the report due to "concerns related to classified information." The State subsequently and inaccurately characterized this in written correspondence as a 'refusal' to provide the information.

Throughout their period of jurisdiction, EGLE appeared to prioritize environmental concerns over spillway capacity.<sup>24</sup> State regulators expressed concerns about the water levels in Wixom Lake and the potential impact drawing it down might have on the endangered snuffbox mussel (*Epioblasma triquetra*) and other freshwater mussel species.\* EGLE records indicate that an October 2018 citizen complaint triggered an onsite inspection of the dam, which found water levels 4.1 feet lower than normal.<sup>25</sup>

Similar lake levels were noted in two November 2018 inspections. But a May 22, 2020, email from EGLE spokesperson Nick Assendelft claims that EGLE did not require Boyce Hydro to alter water levels. Assendelft stated, "Boyce is the one who sought approval to raise the lake levels in the spring of 2019 and 2020 after their unauthorized drawdowns." An EGLE document showing a chronology of events says the department issued a permit to raise lake levels after the request was made by Boyce. That permit approval was followed by a May 28, 2019, Midland Circuit Court ruling that also ordered Boyce Hydro to increase lake levels.

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\* The U.S. Fish and Wildlife Service describes the snuffbox mussel as a "small- to medium-sized freshwater mussel with a yellow, green or brown shell interrupted with green rays, blotches or chevron-shaped lines. The shell becomes darker and the interruptions less clear with age. Shell shape is typically triangular in females and oblong or ovate in males. Males can grow up to 2.8 inches, with females reaching only up to 1.8 inches." They also specifically note that dams are the primary threat to this mussel as they impact water flow and water temperatures. See: "Plants and Animals: Snuffbox" (Michigan State University), <https://perma.cc/XXC9-ED6T>.

But in a public statement Boyce Hydro protested that they were put “under pressure from shoreline residents of Wixom Lake, the EGLE and the [Michigan] DNR...to raise the water to its normal summer level” in both 2019 and 2020.<sup>26</sup> This protest appears consistent in that, despite the court order and permit approval, the company continued to seek permission to lower lake levels throughout 2019, inviting site visits and submitting a permit application in September of that year to allow an eight-foot drawdown.

That permit request was denied by EGLE in November 2019. However, the company appealed the denial and proceeded with their plans to draw down lake levels. Staff and legal counsel for Boyce argue that the drawdowns in 2018 and 2019 were carried out to ensure “the safety of the dam and operators under hazardous winter conditions” and “due to concern for the safety of [the dam’s] operators and the downstream community.”<sup>27</sup>

These drawdowns appear to mirror an ongoing effort on the part of the company to lower water levels in both the summer and winter. They did this in 2010 to allow repairs and to ensure the earthen embankments did not become saturated.\* They also suggested drawdowns were necessary in 2013, when FERC was threatening the possibility of the dam losing its federal license due to limited spillway capacity. At that time, Lee Mueller, co-member manager of Boyce Hydro reported his concern that FERC might require the company to “breach the spillway structures and return the Tittabawassee to its original structure.”<sup>28</sup> Mueller also suggested that FERC was requiring Boyce to develop a flood plan that could see water levels in Wixom Lake lowered by eight feet “to offer a safety buffer for flood water discharge.” Boyce also pushed to lower fall and winter water levels to reduce maintenance issues and employee safety concerns caused by ice buildup on the dam’s spillway gates, which had become a larger issue after the company lost its federal license and water was no longer allowed to flow below winter ice, and through the hydroelectric turbines.

But, in their post-flood public statement, Boyce argues that in April 2020, pressure from residents, EGLE and the Michigan Department of Natural Resources, including threats of a

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\* An August 12, 2010, Boyce Power news release also lends support to the company’s contention that the dam embankments can be weakened if they become saturated. The news release describes their plans to engage in a FERC-approved “cautionary action in the interest of public safety.” The news release describes “a two-week phased draw-down of Sanford Lake,” that was completed to “reduce a recent build-up of hydrostatic pressure in the right side (western end) embankment that has resulted in a significantly higher than normal water saturation of the earthen dam.” The news release describes a 4’ to 4.7’ reduction in water levels that would last for “approximately three weeks” to allow for “remedial construction measures,” after which water levels would be restored. “Sanford Lake Draw-Down Press Release” (Boyce Hydro Power, LLC, Aug. 2010), <https://perma.cc/24DW-H668>.

\$300 million dollar lawsuit for alleged damages to freshwater mussels, forced them to raise the water levels in Wixom Lake to their normal summer levels.<sup>29</sup> Boyce Hydro's statement wraps up noting that they sued "EGLE, the MDNR and certain high-level officials in those agencies in the U.S. District Court for the Western District of Michigan [on April 29] for multiple violations arising out of their regulation and oversight of the Edenville Dam."<sup>30</sup>

On May 1, the Michigan attorney general, EGLE and MDNR responded by suing Boyce in the circuit court of Ingham County for "dramatically lower[ing] the level of Wixom Lake for an extended period in [December of] both 2018 and 2019 ... causing the death of thousands if not millions of freshwater mussels many of which are federally endangered."<sup>31</sup>

Mueller claimed the legal pressures being applied against his company by state regulators demonstrated EGLE "clearly care more about mussels living in the impoundment than they do about the people living downstream of the dam."<sup>32</sup> Boyce Hydro's lawyers also countered that the state's charges regarding mussel deaths are without merit. "Given the failure of the U.S. Fish and Wildlife Service to conclude that Wixom Reservoir even constitutes the 'habitat' of the endangered snuffbox mussel, and to designate/declare a 'critical habitat' for such species, the demand[s]...made upon Boyce are without foundation." They pointed to the recent SCOTUS ruling in *Weyerhauser v. U.S. Fish and Wildlife Service*, "holding that a 'critical habitat' cannot be designated" without first determining the 'habitat' of an endangered species."<sup>33</sup> State of Michigan resources also appear to be giving contradictory reports on the presence of an endangered species in this area as the MDARD "Endangered Species by County" website states that there are "No endangered species in this county" (for both Midland and Gladwin counties).<sup>34</sup>

But a May 22 email from EGLE spokesperson Nick Assendelft wholly rejects Boyce Hydro's claims, arguing the company "never suggested that maintaining Wixom Lake at normal and legally-required levels was any kind of safety risk. Until now." Assendelft pointed to Boyce's "troubling track record of noncompliance and neglect," and claimed that "Boyce's assertion that its illegal emptying of Lake Wixom — to the detriment of property owners and the environment — was motivated by concern for the safety of local residents is false." Instead, he argued, "the company's concern has been about cutting costs, and it was apparently too



expensive to prevent ice build-up and potential damage to the dam during the winter. Yet those are costs that every other large dam owner has to incur.”\*

Just over two weeks after the two court actions began, the heavy rains that brought on the dams ultimate failure began. Boyce Hydro claims it acted quickly, ahead of the coming storm, to once again begin drawing down lake levels.<sup>35</sup> But clearly, it could not draw down water levels quickly enough to allow the lake basin and dam to hold the flood waters. In the aftermath of the breach of the Edenville Dam, numerous additional lawsuits have been filed against both Boyce Hydro and Michigan EGLE, and more are likely to follow.<sup>36</sup> Another

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\* Boyce Hydro representatives agreed that removal of ice buildup on spillways was essential to maintaining the dam infrastructure in working order, and that lowering water levels would reduce the need for ice removal. They also explained that their desire to avoid the activity was primarily an employee safety issue. They explained that ice reduction measures required staff or contractors to work in extremely dangerous conditions, effectively suspended over spillway gates, blasting ice build-up away from spillway gates with jets of heated, high-pressure water. Personal correspondence with Boyce Hydro representatives and the Four Lake Task Force on May 8, 2020.





lawsuit has also been filed against FERC, claiming that the federal agency should not have granted Boyce Hydro a license to produce hydroelectricity without having first confirmed they had the financial capacity to manage and maintain the four dams.<sup>37</sup>

Demands for an independent investigation have been widespread and Gov. Gretchen Whitmer has called for EGLE to lead that investigation and coordinate with FERC in completing the task.<sup>38</sup> But Gov. Whitmer's request has been widely criticized as unrealistic. EGLE Director Liesl Clark claims the manner in which the team was selected is "fairly typical."<sup>39</sup> However, representatives of the state — Attorney General Nessel and Director Clark included — have openly and repeatedly laid full blame for the dam's failure on Boyce Hydro, while defending the actions of the state government as wholly appropriate.

For example, Director Clark testified before a joint hearing of the Michigan Senate Energy and Technology and Environmental Quality committees on June 10, 2020. Despite admitting there is "a lot of investigating to do," she assured the committee that "EGLE has been appropriately taking action to address concerns with the dam." Later, she stated that there is "ample evidence right now that the Edenville Dam failed because of the owner's neglect and violations of the law." Similarly, as described above, Lee Mueller of Boyce Hydro has claimed state government officials are to blame for the dam's failure, charging they cared more about mussels than they did about humans.

But an independent investigation will be needed to validate or disprove Clark's and Mueller's claims. The investigation could show Boyce Hydro's inability to maintain the dams was the cause, or a cause of the failure. It could also show that EGLE's demand to raise the water from its December 2019 level to approved summer levels in the spring of 2020 played a role in the dam's failure.<sup>40</sup> It may also implicate aspects of FERC's multiyear regulatory interactions with Boyce.

With Boyce Hydro, EGLE, and now FERC embroiled in legal battles, these organizations should not be allowed to influence the investigation. This has not been the case so far, as highlighted by Michigan State Rep. Annette Glenn. She noted, "First, the investigators were chosen and paid for by the owner of the dams. Second, the investigators are approved by and overseen by the state agency responsible for the dams' safety."<sup>41</sup> While the initial investigation team put together has been recognized as both knowledgeable and professional, the involvement of both Boyce Hydro and EGLE in the development, selection, and oversight of the team will impact the credibility of the final findings.

The FLTF's recommendation that the investigation team follow the example of the investigation into the Spencer Dam failure in Nebraska in March 2019 appears to be the most reasonable.

In this case, Nebraska officials and the owner of the Spencer Dam stood aside to allow the Association of State Dam Safety Officials to complete the investigation into the dam's failure.\* FLTF points out that independence was maintained in this investigation by ensuring that "neither the regulator nor the dam owner had any input on the selection of the team members or oversight of the team's activities."<sup>42</sup> A similar methodology was employed in the investigation of the 2017 Oroville Dam failure in California.

## Conclusion

The economic, environmental and social destruction caused by the failure of the Edenville Dam appears inextricably linked with two, and possibly three, key parties that were responsible for the dam's management and oversight. The historical levels of precipitation over a period of two days pushed a difficult management situation past the breaking point.

Boyce Hydro, the dam's owner, and the Michigan Department of Environment, Great Lakes, and Energy, the state agency charged with regulating the dam, both appeared focused on concerns other than the dam's safe operation. In Boyce's cases it was its own financial considerations, and in EGLE's, it was wildlife and environmental preservation.

As charges of negligence on the part of both Boyce Hydro and the Michigan Department of Environment, Great Lakes, and Energy mount, the people of these Mid-Michigan communities are left to dig themselves out from under the water and debris. But the opportunity offered to the community by the actions of the Four Lakes Task Force appears to be offering a pathway forward. The FLTF is currently the most reasonable means of restoring Wixom and Sanford lakes, rebuilding and maintaining the dams in a manner that will provide financial stability and community support needed to move forward.

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\* The ASDSO describes itself as "ASDSO is a national non-profit organization serving state dam safety programs and the broader dam safety community, which includes federal dam safety professionals, dam owners and operators, engineering consultants, emergency managers, manufacturers, suppliers, academia, contractors, and others interested in improving dam safety." See: "Mission and Vision" (Association of State Dam Safety Officials, 2020), <https://perma.cc/4GEG-DVPB>.



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## Endnotes

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- 14 “About” (Four Lakes Operations Company, 2020), <https://perma.cc/PM44-8E66>.
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- 16 Dave Kepler, “Task Force Chair Shares Path Forward for Midland Area Lakes” (Midland Daily News, Jun. 2020), <https://perma.cc/F6P3-H273>; “The Path Forward for the Four Lakes of Gladwin and Midland Counties” (Four Lakes Task Force, June 22, 2020), <https://perma.cc/8MYR-HME6>.
- 17 “Statement on the Future of the Sanford, Wixom, Smallwood, and Secord Lakes” (Four Lakes Task Force, 2020), <https://perma.cc/HP6A-J8SD>.
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