

Antrim County Operator of Dams
P.O. Box 217, Bellaire, MI 49615

Mr. Ed Boetcher
Chair, Antrim County Board of Commissioners
Bellaire, Michigan

June 2, 2017

Dear Mr. Boetcher,

Please accept the following Annual Report of the Drain Commissioner and Operator of Dams for 2016.

Annual Report of the Antrim County Operator of Dams for 2016

a) Elk Rapids Hydroelectric Facility

The highlight of 2016 was the 100-year anniversary of the construction of the foundation of the Elk Rapids Hydroelectric Plant. The Stockhausens took the opportunity to invite dignitaries and individuals that had been instrumental in the relicensing effort to the hydro for a celebration. Bill Stockhausen also published a brief "History of the Elk Rapids Dam" to mark the occasion.

A large amount of effort was expended on preparations and research for the interior renovation of the hydro building. The Stockhausens arranged for a demonstration of blasting techniques on a sample wall in the hydro building using several types of blasting media. They also researched all the different coating options, brick replacement, staging of the project, etc. In August, the County had paint samples from the building tested, which confirmed the presence of lead and cadmium. Asbestos was confirmed in the window glazing and caulk.

The County retained the services of Patrick Machin, to prepare the bid specifications, and we advertised for bidders late in the year. Many contractors showed up at the informational meeting, however we ultimately received only one bid from a firm called Protech. After discussion and negotiation with the owner of Protech, the County decided the bid was equitable and the bid was approved early in 2016. (As of this writing, the project is about 2/3 completed and the results are thus far very satisfactory.)

The Stockhausens also continue to be intensively involved in an effort to lobby the Michigan Legislature and the Michigan Public Services Commission on gaining fair rates for electricity sales to Consumers Energy. To date the effort has cost well in excess of \$100,000 of their own and partners' funds, but it has resulted in a coalition of several renewable energy producers, including methane capture facilities, waste incinerators, wind farms, and other small hydro producers. The County has passed two resolutions in support, and the Operator of Dams and County Administrator have also contributed a letter of support (At this writing, a decision from the Michigan Public Services Commission is due very soon.)

County electrical generation revenues in 2016 were \$19,102, a slight decrease from \$20,352 in 2015, due primarily to less volume of water flowing through the dam.

b) Intermediate Lake Dam in Bellaire

2016 Resulted in moderate flows well within the average and no danger of floods. Gate settings suggest that groundwater discharges remain high and, as we have learned, heavy rain could still push lake levels higher than normal in 2017.

Mr. James Coughlin inspected the Bellaire Dam in 2016 for its routine DEQ safety certification. Mr. Coughlin complimented the County in his report for excellent maintenance and operation; nevertheless several issues were discovered that would need to be addressed in the near future. Some of the metal parts on the radial gates are showing signs of normal wear and corrosion and are in need of replacement, as also are the rubber seals around the gates' perimeter. Corrosion in the wiring that services all the gates are causing electrical current leakage and the possibility of a short circuit and the potential for electrocution hazard is real. All these parts and wiring are in need of replacement. Also, recommended is a capping of the tops of the old concrete piers with a modern mortar mixture, to stop water from penetrating the concrete and cause spalling from frost. I am currently researching the project for repair and soliciting quotes on what needs to be done. A report will be forthcoming.

c) Miscellaneous Duties

As many of the commissioners are aware, a very important part of my job is educating the public about water levels, the dam operations and fielding complaints. 2016 brought another steady stream of inquiries, especially about lake levels. Most calls originate from residents on Intermediate Lake or the Intermediate River, and the rest are from residents distributed through the other lakes of the Antrim Chain. The installation of survey monuments on several of the lakes has prompted inquiries from the public and I have offered simple instructions on how to determine the 100-year floodplain for residents that have inquired.

d) Related Activities

During the summer of 2016, we built 7 new large woody debris (LWD) structures in Grass River with the help of Three Lakes Association interns. The new structures were installed upstream of the existing structures that were installed in 2013 and extends the network of LWD structures to the confluence of Grass River and the tributary Cold Creek. Tons of sediment are dumped into Grass River each year from Cold Creek—sediment that originates mostly from road crossings over Cold Creek, and erosion occurring upstream from soil disturbances adjacent to the creek. The new structures will reduce the impact of accumulating sediments in Grass River from Cold Creek, and distribute the sediments downstream.

Transect measurements taken in 2016 continue to indicate that the structures are moving sediment and deepening the channel as predicted and Three Lakes Association plans to continue studying and monitoring the impact into the future. The LWD structures have also proven to be excellent habitat for juvenile sport fish species and sped up the natural rate of bank stabilization. The work of 2016 completes the Large Woody Debris Demonstration Program initiated and managed by the Antrim County Operator of Dams. My hope is that other organizations will continue to implement this technique elsewhere in the Chain of Lakes.

Annual Report of the Antrim County Drain Commissioner for 2016

As some of the Commissioners are aware, the sole County Drain under the Drain Commissioner's authority is the outlet from Birch Lake in Elk Rapids Township that drains into Grand Traverse Bay. Late last summer, I received an emergency call that sinkholes had appeared in the roadbed of Timberlake Drive where it crosses the Birch Lake drain. This came as no surprise, since I had discovered three years earlier that the concrete culverts at the crossing had settled or cracked, were leaking, and the failure was just a matter of time. The Antrim County Road Commission had confirmed my discovery, and we were waiting for an opportune time to replace the culverts.

The discovery of the sinkhole provided the impetus to take action. The Road Commission acted quickly to fill the sinkhole and assigned the staff surveyor to meet with the Drain Commissioner and the DEQ to assess the replacement of the culverts. In the process, we discovered that the culverts were not located entirely within the County Drain's easement. Also, the DEQ determined that the elevation of the creek bed below the culverts established the level of Birch Lake and not the culverts. So, the DEQ prescribed a much larger culvert to allow for fish passage. This caused a good deal of consternation with residents on Birch Lake who had assumed the culvert determined the Birch Lake water level. So, the Drain Commissioner spoke to the Birch Lake Association at their Annual Meeting in August 2016 and explained the situation.

Construction took place in October. The Road Commission installed the new culvert to the DEQ specifications and relocated it inside the County Drain easement. We watched it closely this spring and the new culvert is operating as expected. The County Road Commission deserves special credit for the excellent job they performed: Timberlake Drive is a dead end street, so they notified every resident on the road of the planned construction and minimized the time the road was closed during construction. They were also very sensitive to the concerns of the Birch Lake Association concerning the impact on lake level, and took all concerns into consideration in the implementation of the project. Funds for the construction were drawn from Antrim County Road Commissions discretionary spending on road improvement.

Respectively submitted,

A handwritten signature in black ink, appearing to read "Mark Stone". The signature is written in a cursive, flowing style.

Mark Stone
Antrim County Operator of Dams
Antrim County Drain Commissioner