

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

Mr. Michael Crawford
Chair, Antrim County Board of Commissioners
Bellaire, Michigan

March 2, 2016

Dear Mr. Crawford,

Please accept the following Annual Report of the Drain Commissioner and Operator of Dams for 2015.

Annual Report of the Antrim County Operator of Dams for 2015

a) Elk Rapids Hydroelectric Facility

Antrim County was granted our new license to operate the hydroelectric dam from the Federal Energy Regulatory Commission (FERC) until 2050. Despite our appeal, FERC sided with the Michigan Department of Environmental Quality (MDEQ) and required measurements of dissolved oxygen in the tailrace. We maintained the measurements were superfluous, due to the fact that DO levels in the tailrace would be virtually identical to DO levels in Lake Michigan. Elk Rapids Hydroelectric Power LLC will conduct the measuring this summer to comply.

The Stockhausen family (Elk Rapids Hydroelectric Power LLC) reports satisfaction with the operation at the Elk Rapids Dam. Several improvements to the equipment were made in 2015, including a remote operating and safety monitoring system. Stockhausens are also 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 about \$100,000, 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.

We have also begun experimenting with different types of paint removal techniques in preparation for determining bid specifications for the scheduled interior renovation of the plant.

County electrical generation revenues in 2015 dropped slightly to \$20,352.05 from \$29,478.57 in 2014. The decrease is almost entirely due to a reduction of water volume flowing through the dam.

b) Intermediate Lake Dam in Bellaire

After several years of threatening water levels in Intermediate Lake, 2015 turned out to be relatively typical. Gate settings suggest that groundwater discharges remain high and a combination of quick snow melt and heavy rain could still push lake levels higher than normal in 2016.

It's important to note that, since Intermediate Lake is the only lake on the Upper Chain that is managed with a legally prescribed level, it's also the only lake level on the Upper Chain that is monitored and recorded. Although the other lakes on the Upper Chain are all part of the same watercourse as Intermediate Lake and they are closely connected, in actuality the other lake levels probably peak at different times and for somewhat different reasons than Intermediate Lake. The installation of lake level monuments on other lakes in the chain would improve our understanding of overall flow rates between the lakes.

The equipment at the Bellaire Dam is in need of some minor work in 2016. We intend to replace the cables on the radial arm gates and touch up the paint work.

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. 2015 brought another heavy load of inquiries, especially about lake levels, but not just on Intermediate Lake.

In July of 2015 I made a presentation on lake levels to the Six Mile Lake Association.

d) Related Activities

DEQ issued a permit in 2015 to build up to 8 new large woody debris (LWD) structures in Grass River. The existing structures were installed in 2013. Transect measurements taken a year later in 2014 indicate that the structures are moving sediment and deepening the channel as predicted. The LWD structures have also proven to be excellent habitat for juvenile sport fish species and sped up the natural rate of bank stabilization. Funds remaining from the 2013 project will be used to complete the new structures. However, we hope to receive a grant that will increase funding for the 2016 work. Also, Three Lakes Association has committed to purchasing a laser level and other equipment for measuring the transects more accurately.

Annual Report of the Antrim County Drain Commissioner for 2015

The Drain Commissioner had no activity during the year of 2015, aside from a routine clearing of the Birch Lake drainage ditch.

Respectively submitted,



Mark Stone
Antrim County Operator of Dams
Antrim County Drain Commissioner