I have been working with the DNR in an effort to research the effects of the Waukesha water diversion on our waterway.

My goals are:

- Understand how much water we are expected to lose
- Understand the dam order and the process to change it in order to lessen the diversion's impact
- Inform the board and reach a consensus on any action desired
- Educate riparians

The following are some FAQ's meant to bring the commissioners up to speed and generate questions for me to answer or research so we can make an informed decision on what we would like to do, if anything. I also intend on publishing these FAQ's to the WWMD website.

What is the Waukesha water diversion?
The City of Waukesha for decades has used wells for water and then placed treated wastewater into the Fox River, increasing the flow rate and volume downstream into our impoundment. Due to poor water quality, Waukesha is in the process of switching from well water to Lake Michigan water. As a result, Waukesha will return treated wastewater to Lake Michigan instead of the Fox River. The transition is expected to begin in 2023.

Could the WWMD raise the level at our dam to compensate for the loss of water?
The WWMD has no authority on its own to raise the water level or change the required flow rate.

Who runs the Waterford dam?
The Wisconsin DNR issues a dam order and Racine County is responsible to operate the dam.

What impact could we see on our water level?
It's hard to say with certainty. But it will likely stay on the "low" end of what we typically see now.

What does our operational dam order say?
There is a requirement to send 37 cfs (cubic feet per second) over the dam at all times to a minimum level of 772.63 feet above sea level.

What is the minimum level required by our dam order?

772.63 feet above sea level

What is our water level currently?
It is a fairly consistent 773.5 feet above sea level.
Real Time Waterford Dam Water Level Data

How much water currently flows over the Waterford dam?
44-55 cfs on average.

How much water will we lose when Waukesha shuts off the water supply?
8 cfs. That brings us to 36-47 cfs.

Is flow rate or minimum level controlling?
Flow rate is controlling. Even if we reach our minimum level of 772.63 feet. We still have to send 37 cfs over the dam.

What is the lowest flow rate we have ever experienced?
The data on the lowest flow rate since 1994 was July 17, 2012. It was 32-42 cfs. The range is due to interpolation between flow rate data at the Waukesha and New Munster dams. The Waterford dam does not have flow rate data.

Is there any hope of increased water flow?
Waukesha will begin to reduce the amount of water placed in the Fox River in the Fall of 2023. It will be a gradual transition over ?? years. DNR water engineers have stated there is a possibility that as Waukesha abandons its wells, the water table will recover, and more water will naturally make its way into the Fox River and we might not actually see a full 8 cfs water supply decrease.

What happens when we receive less than 37 cfs?
A rule of thumb is lake level will drop 1 inch per hour, per acre, for every 1 cfs loss of flow. We would expect to lose water when flow drops to the low end of its new rate of 36-47 cfs. Using this assumption, our impoundment is 1100 acres, on days when flow is 36 cfs, we could expect to lose 1 inch in 1100 hours, or 46 days. The hope is that we will soon return to above the lowest flow rate range, and start to refill the "pool"

Why don't we just change our dam order?
A formal application to the DNR to change the operational dam order at the Waterford Dam would trigger many different stakeholders downstream to weigh in. Wastewater plants downstream require a certain flow to "dilute" the wastewater they place into the river, the DNR fisheries department would have to study the effects of less water on fish,

DNR water quality experts would study our request, and the DNR navigation department could also recommend to deny our request. The burden to prove otherwise with our own studies would fall on the requester, the WWMD. The cost to request a dam order change is $500, but the studies required could be quite costly and the WWMD could see opposition to our request from downstream.

How long is the process to change the dam order?
The process, if successful, could take up to 2 years.

Are there any alternatives?
Possibly. Our current dam order requires a minimum level and water flow, but is silent about a maximum level. I am exploring an idea to use our existing dam order to raise our "pool" level during periods of higher water flow, so that we have some "water in the bank" for when flow is low. This is in the early stages of exploration, but feedback from the DNR is that this idea is more workable than changing our dam order to send less water downstream. This idea is attractive because approval seems easier to gain, and once approved, could be implemented quickly, if we see ourselves in a low water situation. It would be a great tool to have in our back pocket. This could spare considerable time and expense to changing our dam order, for something we aren't sure is going to be a problem, and give us the flexibility to do something on short order if we need to.

Dan Schultz
Commissioner
Secretary