

Mr. Beck,

Below are my answers to your questions:

1. Is there a rate study comparison for facilities similar Missaukee Sanitary Drain #2? How do those rates compare to our facility?

In my report, and in the presentation, I compare your rates to 52 other municipalities of similar size from our available information. Drain 2's rates are the third lowest of these communities. The average is \$43.70 per month.

2. Does our plant manager follow best practices for operating Drain #2? Do we have limited overtime, manager working at critical times like holiday weekends, and a schedule that meets the needs of the users?

I don't have this information available (how much overtime, off-work hours, etc.), however, these are very common occurrences for operating any wastewater system. The system is running 24/7, things can break at any time day or night and can take a lot of time to repair. The alternative is backing up sewers. From the information I have, and visiting the plant, I don't see anything out of the ordinary.

3. What is the impact of the mandated trunk age coming into the facility. How will that impact the like expectancy of Drain 2?

I think there are some typos in this question, and I can't make out what you are asking here.

4. It seems like we incur a large number of costly problems. Do all drains have reoccurring problems with lightning, irrigation rigs, lift stations, damaged equipment and vehicles, scheduling regular maintenance and excessive overtime?

These are all normal, particularly in a system like yours with a lot of lift stations around a lake. In the meeting, Alan mentioned grounding rods have been installed, and the lightning strikes have stopped. System assets like lift stations have design lives of 20-25 years. After that they typically need a complete rebuild which can easily be in the \$100,000-\$500,000 range (depending on the size of the station). Unfortunately, the Drain 2 system is reaching the age where major items are/will need replacement.

5. What can be done now to reduce future costs? Example old car vs. new car. Where is the point of diminishing returns? What can be done to operate this facility more efficiently?

Operating efficiency declines over time as the system ages and parts wear down. New equipment can bring down energy costs and help, but obviously come with the cost to replace. The proposed Septage receiving station is a great way to bring additional revenue into the fund and will help offset the rates, but will take a few years of investment to get going.

6. What can be done to prevent similar significant increased costs in the future? The original cost was \$11.00 / month \$132.00 a year. Now \$23.17 a month or \$278.00 a year. What can be done to assist people using the system on a limited basis?

Most healthy communities raise rates 2-4% every year to keep up with inflation, so any year they are not raised, it is essentially pushing off the increase into the future. This is the best way to avoid these major course corrections. Additionally, we recommend re-evaluation of the rate structure each year or two to make adjustments.

As far as those using the system on a limited basis: the system is required to be maintained and available for them any time, whether they are there or not.

7. Is it not true that except for the three major summer holidays the Missaukee Sanitary Drain #2 operates at or below capacity? So even thou this system is 20 years old it should if properly managed and cared for shouldn't it last longer?

The flows are seasonal and not specific to any weekend. They are really only significantly lower for about 3 months out of the year (December-Feb).

It is actually harder on system assets to run below the design flows, since a major component of design is the speed of the flow. Sanitary flow has high particulates which will settle out below 2 feet per second, which then harden in corners and on the bottom of pipes and can damage piping and manholes through anaerobic digestion. Stagnant wastewater utilizes all the oxygen nearby and produces a hydrogen sulfide gas which is extremely corrosive to concrete (pipes and manholes) and metals (pumps and pipes). It is very important to the longevity to keep things moving in the pipes.

8. What are the actual costs related to the current rate study? Are we moving to having to pay close to \$500.00 a year for service? What would to total revenue be if that is the case?

My recommendation for the fund to be sustainable, and for it to absorb upcoming maintenance costs, replacement costs, and typical emergency repairs, the rates need to be increased to \$45.00 per month. The faster you can get it there, the healthier the fund will be. That is \$540 per year.

I hope to be clear that Drain 2 is not in an atypical situation, your system is not different or special, this is a course correction to get you where you are able to cover normal costs that you are unable to cover now.