



## **2017 WASTEWATER DEPARTMENT YEAR END REPORT**

- The wastewater plant treated a total of 398 million gallons this year. This averages out to 1.09 million gallons per day and is an increase in flow from the previous year. The percent capacity of the plant used for the year was 55%. We recorded 51.2 inches of precipitation this past year compared to 48.1 inches for 2016. The wettest month of the year was May, which we recorded 8.66” of rain. Also notable were April and July, which had over 7 inches each.
- The yearly average removal efficiency of the treatment plant in regards to Total Suspended Solids remained steady at 98%. The BOD percent removal efficiency increased from 97% in 2016 to 99% in 2017. Ammonia and phosphorous removals (nutrients for algae growth) remained steady from 2016 to 2017. Ammonia removal at the plant was 99% and phosphorus removal was 90%. The phosphorus discharge average for the year was 0.63 mg/L and ammonia was 0.24 mg/L, which are way under the limits allowed by IDEM.
- The wastewater department had one violation of its operating permit this past year. Also had one violation in 2016 and three in 2015. As per the permit, a report was filed with IDEM describing the incident. This violation was caused by rain events in the wet month of May and mechanical failure at Boone Village lift station, which is located in front of the treatment plant. This has been a frequent problem lift station in the past with heavy rainfall. The lift station panel has since been upgraded and replaced with an arc armor panel. Also, a permanent back up system (Thompson pump) has been added with its own power source to eliminate any future issues due to mechanical, electrical, or weather.

- Since establishing the yearly sewer rehabilitation program back in 2002, the department has repaired and/or replaced 73,412 lineal feet (LF) of sanitary sewers. This year's project was the lining of 4,360 LF of 8" sewer main, 472 LF of 10" sewer main and 2248 LF of 12" sewer main. The work was performed by Benchmark Construction in specific areas within Sugarbush subdivision and also Bloor Lane, Terrace Drive and Isenhour Hills Drive. Next year's rehabilitation project involves the lining and replacement of segments of sewer main within the Village.
- In early 2017, we replaced the Zionsville Rd lift station back panel plate. The original panel was wired incorrectly and wanted to make sure, with all of the new development on Zionsville Rd coming, that the lift station would be ready. Straeffer Pump & Supply provided the material and labor on this project.
- The department continued, in 2017, to work with Merrell Bros to haul and dispose of biosolids at the treatment plant. Merrell Bros hauled 4 times this past year and hauled a total of 940 wet tons. The biosolids are hauled to a collector facility where they are distributed to specific fields owned or managed by Merrell Bros and land applied.
- Repaired a 4" water main leak at the plant and repaired two plant water leaks during the past year. The water bills had been steadily going up since early 2016, but had no idea where the water leak was until we increased the water pressure at the plant in early 2017. One day later, the leak came up to the surface and we repaired it.
- Added 260 feet of fence to the front perimeter of the treatment plant property as well as a new 24 ft wide gate to help secure the facility. Added 3 security cameras and access control for the gate along with an automatic gate opener as well. These were all noticeable weaknesses from the active shooter training that had been provided by ZPD.
- The department has a contract with Cummins Crosspoint to perform preventative maintenance on the lift station standby generators twice per year. During this past year, 6 generators were found to have problems and were repaired without incident. They were Bloor Woods, the portable generator at the plant, Thornhill, Lost Run Farms, Woodlands and Raintree.

- Created a Collection System Operator position for the department in 2017. The process included specific job duties and a job rating. With this new position filled, started cleaning and televising the sewer mains in Cedar Bend, Smith Meadows, and Oakridge subdivisions. Found 5 buried manholes within the existing system and raised them to above grade. Uncovering these are necessary to be able to provide access for freeing up blockages and for cleaning the sewer. This cleaning and televising of sewer main will continue in the months to come when the weather gets above 50.
- EQ Basin mixer had mechanical failure early in the year and so purchased a compressor and a new air mixing system to replace it. The cost to repair the mixer were similar to the new system, however the new air mixing system will do a much better job of overall mixing in the tank and will cut back on odors in the summer.
- Had a sewer main break in Colony Woods during Memorial Day weekend in 2017. Had the vac truck on site twice a day for all three days to keep the line cleaned out. Snider Group repaired the line the following week. Also replaced 200 ft of orangeburg pipe that was found in the village on Hawthorne and Third St. The replacement caused the street closure in this area for approximately 1 week. The pipe name comes from the town Orangeburg, New York, which is where the pipe was manufactured. It was constructed from an asphalt fiber material with layers of wood pulp and was created for different water pipe uses in the 1860's to 1970's. Orangeburg pipe is very fragile and if found today, will be replaced. It has mainly been found within the village area of town.
- Repaired the sewer lateral for the Town property at 390 S. Main St. The line had been broken in 3 different places. Fiber optic had been bored thru the middle of the lateral and a second fiber line hit the top of the lateral collapsing the top of the pipe and filling in with dirt making a nice plug. This is something for my department to be concerned with as more fiber comes into Town. The third break was in the line under Main St and had a crack in it to the main sewer. This portion was internally lined and therefore did not need to be excavated. The lateral is operating fine now.

- Added a VFD (Variable Frequency Drive) cabinet with controls to aeration blower #1 this past summer. The department has a total of three of these blowers and they provide the oxygen for the bacteria to break down the organic material in the treatment process. These blowers have 75 HP motors each and are the treatment plants biggest energy users. The VFD will allow for blower 1 to be run at a slower speed which will save energy. Gardner Denver provided the equipment and performed the setup and a week of fine tuning the system.
- Added one new piece of technology in 2017. Purchased an easement machine to be able to clean sewers and free up blockages that occur in sewer mains that are in yards and off the street. The vac truck is just too heavy to use in these areas.
- Costs for the wastewater department were monitored and contained within the approved operating budget for 2017.