

Town of West Seneca – Sewer Capacity Issues and issues that exacerbate flooding in the Sunbriar area

The attached map is the trunk sanitary sewer system in west Seneca. The trunk system is the “larger” diameter sewers and the spine of West Seneca’s Sewer System. There are many reasons that contribute to overflows, especially in the area behind Southgate Plaza. This area, being close to Cazenovia Creek is one of the lower points in the system. When the sanitary sewer’s surcharge (can’t carry all the water that is flowing through it) it starts backing up into the sanitary sewer manholes. Given this area is low lying and near the creek, the overflows show up in this subdivision (we also have sewer water that comes out of manholes near the high school bus garage during heavy storm events).

On the map, we show the three main reasons for the backups. The note in red indicates that the sewers in this area do not have enough capacity. Several trunk mains combine and flow in this area. The amount of capacity is determined by the cleanliness of the sewers, the diameter of the sewer and the slope of the sewer. The sewer crews recently cleaned and televised the sewers in this area; therefore, they were fairly clean before the storm event. The slopes of some runs of this sewer (it generally follows the slope of the creek) only allow a maximum of 11 million gallon per day (MGD) of flow through them. During dry periods, our average flow is around 2 MGD, however heavy rain and/or thaw events the flows approach 20 MGD, therefore our sewers become surcharged and back up. Several years ago, an interceptor sewer was proposed for this area that would increase the flow capacity to 20 MGD, however it was not approved by the regulatory agencies. This wouldn’t have stopped us from overflowing into the creek but would have allowed the Town to get water to plant 5, which is more automated to remove excess water.

Also on the map, in blue we have sewer siphons that cross the creek. A siphon is similar to the neck in your toilet bowl. It requires head pressure (water build up) to push water through the siphon (i.e.) the sewers are several feet higher on the high school side, go low under the creek and then backup to the receiving manhole structure on the west side of the creek at an elevation that is lower than the east, but higher than the creek. Based on previous studies, it was determined that the siphon is oversized for dry weather flows. Being that it is oversized, the average dry flows do not have enough flushing velocity to stop solids from settling in the pipe, reducing the pipes capacity. We need to install a smaller diameter siphon for dry weather flows and install a baffled manhole structure so as water builds up, it has to get to a proper elevation before getting into the larger siphons, which would be an elevation that allows for flushing velocity. A project has been designed to do this, which was not approved by permitting agencies.

Lastly, during the last storm the ice damming moved over top of several manholes along Cazenovia Creek. Ice Damming is very unpredictable and in past storms did not necessarily travel in the same paths as it did for the recent storm. Manholes in this area were overtopped with ice, and in one

instance, ripped the manhole lid off and allowed the creek to flow freely into the sanitary sewer system. This issue can be mitigated by raising the elevation of all the manhole rims and lids several feet along the creek. Town Engineering assistants will be surveying all these manholes and getting rim elevations to compare to flood plain mapping. We believe all rims are 1 foot above the 100-year flood plain, however during the ice damming, we can see levels 3-4 feet above the FEMA 100-year flood plain due to the ice damming. Once we have these surveyed, we intend on putting out a contract for raising and fortifying these manholes to get them above anticipated ice dam elevations. This is the only project that does not require agency approval as it does not add capacity to the system. The regulatory agency does not want to see capacity added to the system until all areas in town that have Inflow and Infiltration issues (I/I) resolved. Over the past 10 years the town has addressed about 65% of the town owned sewers in sewer districts 5, 13 and 20 relative to I/I.

Another item we heard was, why are the sewers on Sunbriar backing up given they were just lined? Lining of these sewers does not allow water to escape through defects in the pipe. Additionally, it doesn't allow groundwater in to keep the groundwater levels low. During a storm the groundwater rises to the elevation of the homeowners' laterals and starts getting in at laterals. Additionally, the water backs up because of the capacity issues discussed (shown in red on the map) and the issues with excess water entering the system (shown in blue on the map), especially through manholes along the creek.