

Date: **3/18/2022**

Project No.: **13848A**

To: **Derek Albertson**

From: **Mariusz Jedrychowski and Joe Hausmann**

Subject: **Review of Proposed Sewer and Water Service for 245 Norwich-New London Road**

The Montville WPCA requests that Wright-Pierce assists in the review of a proposed development from the perspective of the proposed water and sewer utility impacts. We received the following document for a proposed 22-unit condominium development at 245 Norwich-New London Road in Montville:

- Design Plans revised on March 8, 2022, for the “Wilton’s Way” development, prepared by Fuller Engineering and Land Surveying, for Western Group, LLC (17 pages).

We reviewed the plans and discussed our thoughts with Montville WPCA staff via phone call on Tuesday March 15th, 2022. Following that conversation, we additionally received a second package of information to include in our review:

- A PDF file with a cover letter dated March 8, 2022, including comments from various departments of the Town of Montville, Engineer’s responses, Stormwater Calculation, and sewer and water calculations (190 pages total).

This memorandum is a summary of our comments discussed on the March 15th phone call, with updates based on the additional information provided following the call.

Sewer System Comments

Calculation Comments

1. The sewer calculation notes mention that there will be 21 new units, and the existing house will remain, but based on the latest plans, it appears that this has changed. The plans show 22 new units with the existing house being demolished. The flow calculations appear to still use the correct unit count, but with inaccurate information. This needs to be clarified.
2. The calculations utilize an average daily flow of 400 gpd per 3-bedroom unit. This appears to be taken from a Greater New Haven WPCA table. Although the flow is likely suitable for the analysis, Montville should verify that this flow is consistent with their typical flow assumptions from previous developers to avoid having conflicting guidance for these reviews.
3. The plans label the existing sewer in the street to be 6-inch diameter, but the sewer capacity calculations assume that the pipe in the street is 8-inch diameter.
4. The sewer calculations assume a peaking factor of 4 on the average daily flow calculations, however, since all the flow from the development will be pumped, a better assumption would be to check the peak pumping rate of both communal lift stations and assume that both are operating at peak rate. This may be a higher flow than the calculated 0.054 cfs.

Plan Review Comments

- There is a none on Sheet C3.2 at the bottom of the plan view that points at the 6" PVC line but calls out a San MH/Lift Station in error.
- The sewer lines from the manhole on site to the public sewer in the street are labeled as 6-inch, but the calculations appear to indicate these may be 8-inch.
- The pipe material for the 2" force main piping does not appear to be labeled.
- The 6" PVC sewer coming into each of the 2 Lift stations is too shallow. Town of Montville requires a minimum of 3' of cover over the pipe. Both of these pipes have inverts that are only 3' or less below grade. Please adjust the elevations of these pipes to maintain at least 3-feet of cover over the top of pipe (3'-6" is recommended).
- The system is being referred to as a Low-pressure Sewer (LPS), but this is not entirely accurate. The system as designed has both low pressure and conventional gravity sewer elements. The individual grinder pumps in each unit appear to be connecting to a 6" gravity sewer which drains to a communal lift station. It is unclear to us why the development is proposing to pump all sewage twice before reaching a public sewer. With modifications, the plans could be designed to only pump the sewage one time to reach the public sewer.
 - Designer could consider eliminating the common lift stations, and connect each grinder pump to a common LPS pipe up to the manhole near the road, or
 - Consider eliminating the individual unit grinder pumps, and connect the sewer from each unit to the 6-inch PVC gravity main by gravity instead of pumping, and just have the common lift stations pump the flow up to the manhole near the street,
- Montville WPCA should make it clear that the individual grinder pumps in each unit and the two "lift stations" on this development site will need to be privately maintained and are not the WPCA's responsibility to operate or maintain.
- It is recommended that the lift stations and the private grinder pumps have some form of emergency backup power. Without emergency power, the sewer system as designed would be non-functional, and the individual grinder pumps in each unit could surcharge into the residences in the event of an extended power outage.
 - If no emergency power is provided, it should be calculated how much storage time exists within each unit, and a plan of action should be developed in case of a power outage that extends beyond the storage limit.

Water System Comments

- It is understood that the plan is to have individual water meters at each of the two new 22 condominiums, instead of a single main meter.
- Montville's WPCA ownership of the public water line ends at the proposed new tap at the street.
- Provide the minimum required separation distance of 10' horizontally between the water line and sanitary lines.
- Please provide a fixture count or other flow analysis to confirm the sizing of the 2-inch feeder lines on the property.
- If the 2-inch size is confirmed, instead of a 2-inch tap that is branching into two 2-inch feed lines, it is preferred to have the tap be a 12" x 4" tap at the main, and then split the 4-inch pipe into the dual 2-inch feeder lines.
- Call out the 12" x 6" tap for the fire service line as well.
- The 6" fire service line also needs to have valving shown.
- Suggest looping the water lines or installing flushing devices on the dead ends.
- Please confirm if sprinklers will be required in the building for fire protection. If so, please show those connections and confirm that adequate fire flows exist with sprinklers and hydrant active.