

Dover Ridge Estates – Water and Sewer Systems
Town Engineer Presentation – February 8, 2024

I. Subdivision

The Dover Ridge Estates subdivision is located in the northeast portion of the Town of Beekman, and consists of 70 residential parcels (69 of which are developed with single-family residential structures, ranging from 2 to 4 bedrooms), one water supply parcel and two sewage treatment parcels.

Dover Ridge Estates was developed in 2 sections, where Section 1 contains 22 predominately 3-bedroom single-family homes from 1965 to 1986, one water supply parcel and one sewage treatment parcel.

Section 2 contains 48 residential parcels and one sewage treatment parcel. 47 predominately 4-bedroom single-family homes were built post 1987.

II. Sanitary Sewer System

The sanitary sewer collection and original treatment system for Section 1 was constructed and placed into operation in the mid to late 1960's under a privately owned company known as the Doveridge Sewerage Disposal Company, Incorporated.

The original sand filter sewage treatment system for Section 1 failed in 1985 as determined by the Dutchess County Department of Health. The Doveridge Sewerage Disposal Company made upgrades to the treatment system without any significant results.

The collection and treatment system for Section 2 was constructed and placed into operation around 1990. Before the mid-1990's, the treatment system was failing without complete build out of Section 2 of the subdivision.

In April 1997, the Doveridge Sewerage Disposal Company abandoned the sanitary sewer collection and treatment system, and the Town of Beekman was tasked with taking over the operation and maintenance of the system as an emergency and interim measure. In December of 1999, the Town finalized the creation of the Dover Ridge Sewer District.

In 2001, the Town acquired the two treatment parcels via eminent domain proceedings from the Doveridge Sewerage Disposal Company and Dutchess County.

Starting that same year, the Town began planning for the reconstruction of the sewage treatment facility. By 2003, the New York State Department of Environmental Conservation issued a consent order requiring repairs to the sewage treatment system.

A construction contract was reached late 2004 and the Town constructed a new sewage treatment system, completed in about one year around September 2005.

There have been no recent capital improvement projects for the system; however, it is noted that there have been sewer main repairs, flooding issues resulting from excessive inflow and infiltration and pump failure, pump and ultraviolet lamp replacements, and most recently a water pump repair for the emergency generator.

III. Potable Water System

Wells, treatment, and the distribution system were constructed and placed into operation in the mid 1960's under a privately owned company known as the Doveridge Water Company, Incorporated.

Similar to the wastewater treatment system, in April 1997, the Doveridge Water Company abandoned the water distribution and treatment system, and as a result, the Town of Beekman was tasked with taking over the operation and maintenance of the system as an emergency and interim measure in order to protect the public. In December of 1999 the Town finalized the creation of the Dover Ridge Water District.

The Town acquired the water supply parcel in 2001 by eminent domain proceedings from the Doveridge Water Company.

Shortly after the 2005 sewage treatment system reconstruction project was completed, a number of compliance issues related to the water system were found and required improvements identified. Since that time, the Town has conducted a number of capital improvement projects to address violations presented by the Dutchess County Health Department. These improvements include a generator to maintain system operation during power outages, replacement of the leaking underground atmospheric storage tank, replacement of the buried hydropneumatic tank and pumps with new variable frequency drive pumps, updated controls, and installation of a softener for radionuclide removal. In addition to the capital improvements are those emergency issues. Within the past few weeks, there was a leak detected and repaired. A failed submersible well pump was also recently replaced.

IV. Future of the Systems

A. Wastewater Treatment System:

Currently, the wastewater collection system consists of a number of sanitary manholes and gravity sewer mains, and a pump station and forcemain system that pumps sewage to the wastewater treatment system constructed in 2005. The wastewater treatment system consists of septic tanks for primary treatment, which discharge effluent into a re-circulating sand filter bed for secondary treatment. A portion of the effluent from the filter bed is returned to the filter bed for additional polishing with the remaining effluent being disinfected by ultraviolet lights and discharged into a cascade for aeration before ultimately discharging into the

receiving stream east of the system. VRI is hired by the Town to manage the day-to-day operations of the wastewater treatment system.

In the coming years, we suggest inflow and infiltration studies to identify sources of excess water that is introduced to the collection system, and subsequently treated by the treatment system. This treatment of extraneous flow can be costly. In addition, the system is in need of mapping of infrastructure and easements.

B. Potable Water System:

The current water supply and treatment system consists of three wells (two of which are active), liquid chlorination, water softening, a buried atmospheric storage tank, and variable frequency drive pumps to pressurize the distribution system, which consists of water mains, flushing hydrants and water service connections. Similar to the wastewater treatment system, VRI is hired by the Town to manage the day-to-day operations of the water system.

Although the Health Department has stated that the water system is in a much-improved state, they continue to request additional work. The latest is the abandonment or removal of the hydropneumatic tank from behind the pump house. We have released a request for proposal for this work, including some structural repairs to the back wall of the pump house. This work will need to be done this year to satisfy the health department.

Maintenance-related improvements will be necessary over the coming years. This may include individual water metering (which is a mechanism that may lead to better water conservation despite current adequate supply and storage), pigging water mains, inserting more valves to isolate sections of the system for reduced downtime, inserting more hydrants for flushing and air relief, and mapping and locating system components such as water shut off valves and easements.

V. Summary

In summary, portions of the systems are 60 years old. Prior to the Town taking these systems over, they were poorly maintained under previous private ownership. The Town, being forced to take control of these systems, has been picking away at violations dictated by the New York State Department of Environmental Conservation and the Dutchess County Health Department, and at the recommendation of the operators and the engineer.

Having nearly satisfied these violations, the next phase is continued improvement and strategic planning. The Town should consider 5-year plans that identify system improvements and allow for budgeting and funding. It is noteworthy to mention that the Town has already proactively implemented a Repair Reserve Fund for both systems to help soften emergency repairs that will undoubtedly occur periodically. The Town has sought outside funding via grants and has been mostly unsuccessful. However, we continue to search for those opportunities and also suggest that the residents may wish to seek funding opportunities or potentially retain a grant writer to assist with funding for continued upcoming improvements.