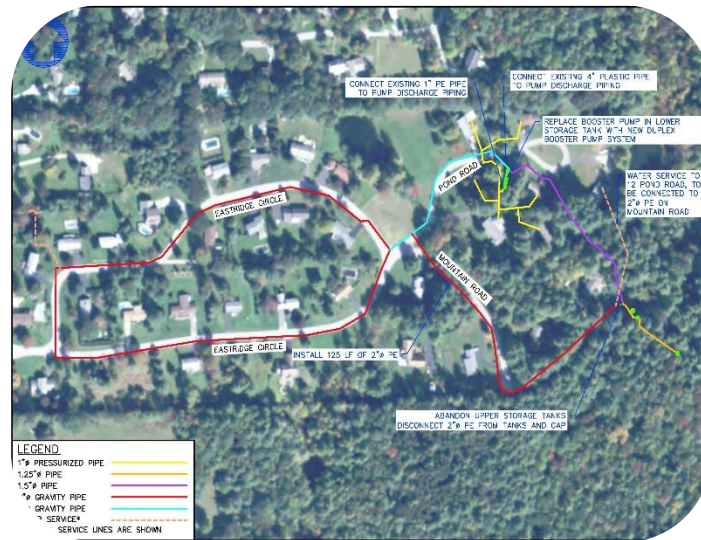


WATER SYSTEM COMPUTER MODEL & EVALUATION

EASTRIDGE ACRES HOMEOWNERS ASSOCIATION, MENDON, VT



Project Area

In 2013, Dufresne Group completed a Water System Evaluation Report for the Eastridge Acres Water System. The purpose of this report was to evaluate a locally defined improvement alternative to resolve known system pressure deficiencies. The system pressure deficiencies had been previously identified in a Sanitary Survey letter from the Drinking Water and Groundwater Protection Division (DWGWPD). The water system was required to resolve inadequate distribution system pressure during normal and peak system demands.

DG developed a computer water model of the distribution system to assess water system hydraulics of a proposed pumping system. In addition, DG evaluated several pump considerations including manufacturer required cooling flow across the motor, minimum flow requirements, minimum submergence requirements, pressure relief and pump efficiency. The water model results showed that the proposed pumping system with VFD's was sufficient to handle the simulated peak demand.

DG performed chlorine contact time calculations for the locally defined improvement alternative to ensure proper chlorine contact time prior to the first user at peak demand. DG assisted the water system in obtaining approval of their improvement alternative from the DWGWPD, as well as with the funding process through the DWSRF.

KEY FEATURES:

- Developed a computer water model and used it to evaluate the locally defined improvement alternative.
- Evaluated and made recommendations for several pump related considerations.
- Identified a concern with minimum submergence requirements and proposed two alternatives to provide the minimum submergence.
- Proposed the use of a pressure reducing valve to protect lower elevation users from high pressures.