

WATER SYSTEM EVALUATION

BELLOWS FALLS VILLAGE CORPORATION, VERMONT



Gate House on Minard's Pond



Raw Water Pumps

In 2012, Dufresne Group (DG) completed a Water System Evaluation Report for the Bellows Falls Water System to evaluate capacity issues at the Water Treatment Facility, assess alternatives to resolve deficiencies with the raw water intake and gatehouse at the Water Treatment Facility and evaluate the water distribution system.

A provision in the Vermont Water Supply Rule reduced the regulatory capacity of the Bellows Falls Water Treatment Facility from 1.0 mgd to 0.5 mgd and potentially required a plant expansion. DG analyzed the historic demand data and compared current and projected maximum day demand. After the demand analysis and discussions with State officials, it was determined that a plant capacity increase was not required at this time.

The Water Treatment Facility has used Minard's Pond as the source of water supply since the early 1900's. The intake was enclosed in a stone masonry foundation structure with vertical screens, a wood frame gatehouse building and a wooden walkway from the dam to the building, much of which dates back to 1939. Alternatives were proposed for varying levels of repair and/or replacement of the gatehouse and intake structure. Based on a life cycle cost comparison, the recommended improvement consisted of removing the gatehouse, extending the intake piping further into the pond and installing a new air actuated intake valve, intake screen and air cleaning system.

KEY FEATURES:

- Avoided a potential plant capacity increase by opening a discussion with State officials and performing a demand analysis.
- Performed a life cycle analysis to determine the best alternative to resolve the gatehouse and intake deficiencies.
- Used a recent computer water model to evaluate the distribution system, identify deficiencies and recommend improvements.