

WATER SYSTEM MASTER PLAN

TOWN OF MANCHESTER, VERMONT



Map of Water System with Color-Coded C-Values

Dufresne Group (DG) completed a Water System Master Plan for the Town of Manchester Water Department. In preparation for this master Plan DG reviewed all record drawings, SCADA information and operational logs. An analysis of the water system demand was performed using the past ten years of demand data and future demands were projected for a 20 year planning period. Key system components were identified and evaluated for compliance with current regulatory and design standards.

A computerized water distribution model was created and calibrated for analysis of the water transmission and distribution systems. The effects of planning/zoning and future growth on demand and service area were also evaluated. Using the computer water distribution model, demand analysis, and other data collected, DG identified water system deficiencies and provided recommendations for system improvements to resolve these deficiencies as well as meet future growth needs.

Total project cost estimates were developed for the proposed improvements and a phasing plan was recommended to implement system improvements over the next 50 years. A Capital Improvement Plan was also developed including estimated future operation and maintenance costs and capital costs based on local funding. Rate increase recommendations were made to provide revenue to fund the future costs of the system.

KEY FEATURES:

- GIS basemap of the water system was created for 37.7 miles of transmission and distribution system piping.
- Computer Water Distribution Model was used to evaluate the system hydraulics and identify deficiencies.
- Capital Improvement Plan was developed showing planned expenditures for the next 25 years, including rate projections.
- Combined water main projects with sewer, drain and roadway components were recommended.
- Water Master Planning was interfaced with Wastewater Master Plan to allow for minimal roadway disturbances.