

# WATER DISTRIBUTION HYDRAULIC MODELING

A water model is a powerful tool for analyzing an existing water system, identifying options for future improvements, and evaluating proposed developments while assessing the system's hydraulic performance. A hydraulic model can track the flow and pressure of water at each pipe and node, tank levels, water age in the system, operational status of various system components, and a chemical concentration. Color-coded network maps, data tables, time series graphs, and contour plots are among the data reporting and visualization tools used to help interpret results.

## CAPABILITIES



### Engineering Design

- Evaluate alternative strategies for improving system's hydraulic performance
- Fire flow availability studies
- Valve, tank, pump station, and pipe sizing
- Determine elevation for new tanks
- Effect of looping distribution system
- Identify and modify pressure zone boundaries
- Evaluate impacts of pipe upsizing and removal



### Planning

- Evaluate system impacts from proposed developments and system connections
- Vulnerability and underperforming areas studies
- Water main rehabilitation evaluation
- Siting of future storage tanks
- Scenario forecasting
- Capital improvement planning



### System Operations

- Evaluate and optimize flushing programs
- Surge and water loss analysis
- Emergency operation scenarios
- Water source and storage management



### Water Quality Evaluation


- Evaluate alternative strategies for improving water quality
- Modify pumping and tank filling/emptying schedules to reduce water age
- Water age tracking
- Chlorine decay simulations
- Constituent tracing

## Why Bolton & Menk

The quality and control of our water is as important to us as it is to you. Our survey and GIS teams collect and compile water system data when there is limited, outdated, or no data at all, while our environmental engineers help with system demand studies, water tower sizing, and other tasks. With more than 75 years of experience, we have the expertise to guide you through the modeling process.

## CONTACT

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