

## RELATED EXPERIENCE

### CITY OF ROCHESTER WATER SYSTEM RELIABILITY STUDY

The City of Rochester (population 13,680) contracted with Johnson & Anderson, Inc. to update their Reliability Study in compliance with the Michigan *Safe Drinking Water Act*.

<b>Location:</b>	Rochester, Michigan
<b>Date of Services:</b>	2014 - 2015
<b>Cost of Services:</b>	\$40,000.00
<b>Client:</b>	City of Rochester
<b>Contact:</b>	David Anason, P.E. DPW Director (248) 651-5165

Johnson & Anderson began by meeting with Department of Public Works and administrative staff to discuss existing drawings and water system demands. Determining demand allocations proved to be a very challenging effort as the City was in the process of changing out old inaccurate water meters. The Water System Reliability Study was unique in that it addressed two different water sources, the west side well system and the east side system that is supplied from the Great Lakes Water

Authority (formerly the Detroit Water and Sewerage Department) system through the Shelby Township water system.

One of the requirements of the *Safe Drinking Water Act* is to report present average daily, maximum daily, and maximum hourly demands based on consumption records. The City replaced water meters in 2014 and J&A's used four quarters worth of readings from the new meters to determine all of the necessary demand scenarios in the Reliability Study. Accurate water loss was determined with the new meter readings.

J&A updated an existing Geographic Information System (GIS) water system network in *ArcMap* and developed a water system General Plan, as required by the Michigan *Safe Drinking Water Act, Part 16. General Plans*. Once the *ArcMap* network and the General Plan were updated and created, including all system valves, hydrants, wells, and storage tank, the information was imported into *InfoWater* to create a water system model.

J&A and Fire Department staff performed hydrant flow tests throughout the City on various size and age water main. The model was calibrated using the pressure and flow data from the hydrant flow tests. Once the model was calibrated existing system deficiencies were determined by running various demand scenarios. Then future demands were calculated and input and model results were used to determine expected future system deficiencies. System improvements were recommended based on existing and future deficiencies and a capital improvement plan was developed including cost estimates and prioritization of necessary improvements. All the required system data, demands, modeling results, proposed system improvements, cost estimates for improvements, and the General Plan were included in the Reliability Study to meet the Michigan *Safe Drinking Water Act, Part 12, Reliability* and *Part 16, General Plans*.