

Water Network Optimization Suite

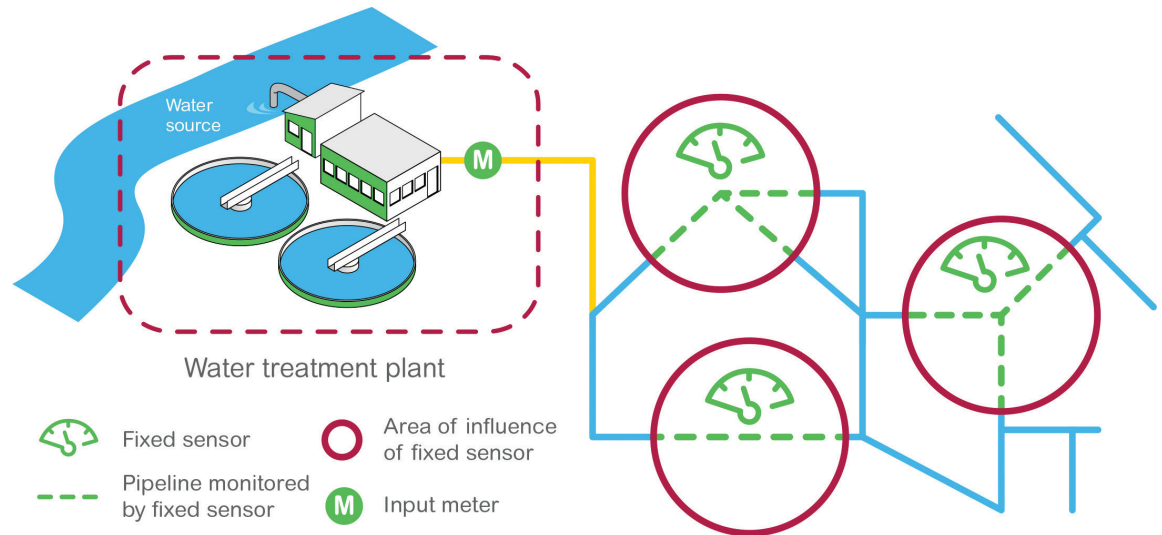
Leveraging Data as an Enabler
to Optimize Your Water Network



Overview

Advanced water utilities monitor their distribution networks, acquiring data from network critical points (production and storage points, inlets of distribution zone, etc.) and making them available in real time to operators in a centralized SCADA.

However, a SCADA control typically provides point data and does not provide information about the rest of the network (see Figure 1 below).



> Figure 1.

The **Water Network Optimization Suite** by Schneider Electric enables Operations Managers and Control Room Operators to manage their network in a more informed manner by:

- Incorporating virtual sensors, allowing operators to know hydraulic and water quality parameters at any point of the distribution network and thus enhancing real-time supervision in SCADA
- Evaluating the evolution of water network behavior and identifying potential issues regarding levels of service breaches (in terms of pressure, water quality, etc.) over the next hours and days
- Analyzing the results of an alternative what-if scenario and comparing it with the business-as-usual scenario (without having to rely on hydraulic simulations run from other departments)
- Analyzing a complete set of Key Performance Indicators on energy usage, network pressure conditions and water quality

With visibility into the entire water network in real time, water utilities are now able to predict future changes in their water network performance and set out corrective actions before critical events occur. This visibility allows for more cost-effective operations and maintenance and more accurate demand management.

Current Business Challenges

The water industry, as many others, is facing the challenge of “doing more with less.”

- Maintaining infrastructure/expanding asset life
- Securing water supply in terms of quantity and quality in case of severe weather events (drought, flooding)
- Increasing staff productivity and effectiveness
- Meeting increasingly stringent regulations while being more energy and carbon efficient
- Raising the bar of customer services quality to meet stakeholders' expectations

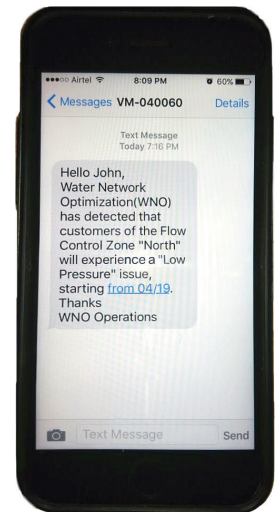
Make the Most of Your Water Network

With a vast water distribution network, it is imperative for water utilities to have an overview of their entire network in real time and in “future-time.” The Water Network Optimization Suite is able to trigger alarms associated with potential anomalies detected by simulations. This enables operators to be warned of current critical situations in the network so that immediate actions to prevent or mitigate service disruptions can be taken with enough lead time.

How can I know whether the water storage of the reservoir will be sufficient to satisfy the water demand during the weekend if temperatures keep rising?

What if I can see the effects of an alternative supply scenario for critical zones?

Network
Operations
Manager



> Figure 2. Example of a notification message sent to an operator.

What if I can notify the field technicians that there is an issue in a zone which needs their urgent attention, based on evidence?

What if I can predict the effect of a valve operation in real time, based on current network conditions?

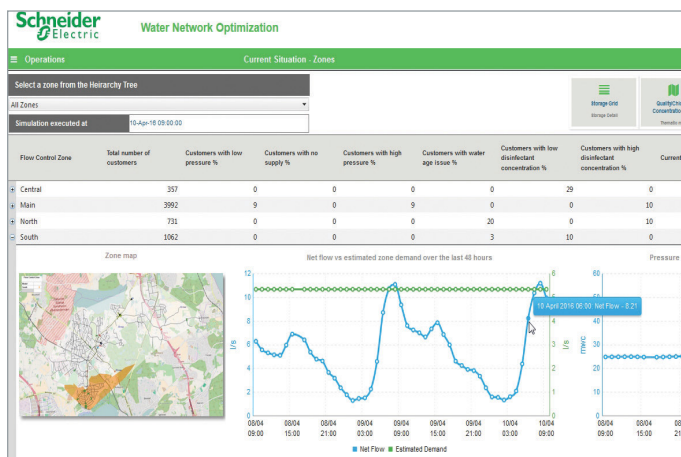


Control
Room
Operator

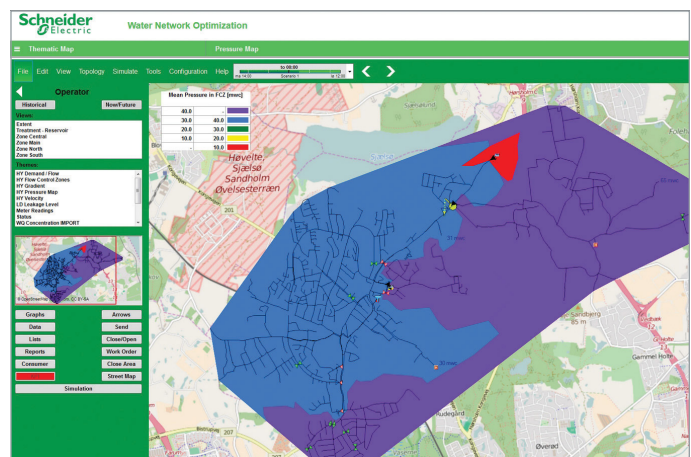
Business Value of the Water Network Optimization Suite

- Quicker and improved operational awareness, including early warning on deviations from expected levels of service
- Transformation of a network management approach from reactive to proactive to events with better operations and maintenance planning for risk reduction
- Prioritization of intervention on network and pumping stations
- Improved control room user experience with visualization of contextualized operational data and enhanced alert management within a SCADA operator-friendly environment without having to switch between applications

The Water Network Optimization Reporting Tool



> Figure 3. Demand Forecast



> Figure 4. Area Monitoring

For more information, visit: software.schneider-electric.com/WNO

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