

## **SCADA 101: Sensors, Data and How to Use Them**

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### **Keywords:**

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**Format:** 45 minute presentation

### **Abstract**

SCADA systems play a pivotal role in the modern water utility. SCADA (supervisory control and data acquisition) systems provide operators with an interface to interact water facilities, provide remote access, monitor/control process equipment, and log critical compliance data. This presentation consists of three parts: The first is a review of the structure and function of municipal water SCADA systems, the second is a review of instrumentation commonly found on groundwater wells and associated best practices and the third is a review of up and coming SCADA system features.

Topics that will be covered include:

- Review of the structure of SCADA systems, all the way from the field up to the computer screen.
- Review of the typical instrumentation found on groundwater wells, and associated best practices.
- Introduce who SCADA systems can be designed to promote Situational Awareness, enabling Operators to run water facilities proactively instead of reactively.
- High Performance HMI's – designing SCADA screens that are focused around supporting Situational Awareness, including a guide to the recently released ISA-101 HMI Design standard.
- Alarm Management: More effective design, documentation, and reporting of SCADA alarm systems in accordance with ISA-18, for more effective operator response and reduced operator fatigue.
- Safeguarding the SCADA system to ensure high availability and data integrity.
- Improved techniques for improving SCADA network reliability for remote water site connectivity.
- Best practices for improving overall SCADA system reliability and uptime.

### **About the Speaker**



**Graham Nasby, P.Eng, PMP, CAP** holds the position of Water SCADA & Security Specialist at City of Guelph Water Services, a publicly-owned water utility located in Guelph, Ontario, Canada. Prior to joining Guelph Water, he spent 10 years in the engineering consulting community after completing his B.Sc.(Eng) at the University of Guelph. He is senior member of the International Society of Automation (ISA) and co-chair of the ISA112 SCADA System Standards Committee, and a voting member of the ISA101 HMI Design standards committee. He is a member of both OWWA and WEAO, and currently sits on the OWWA Automation Committee. In 2014, Graham was recognized with a 'Mid-Career Achievement' award from his alma mater, the University of Guelph's School of Engineering. Contact: [graham.nasby@guelph.ca](mailto:graham.nasby@guelph.ca)