

# Facility P&ID Drawings: What they are and Why you need them!

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## ABSTRACT

Piping & Instrumentation Diagrams (P&IDs) are one of the essential tools that automation professionals use when working with SCADA systems. P&IDs provide an effective overview of process systems and include vital details about how processes are monitored and controlled. So why are these drawings frequently missing and/or out-of-date at many water utilities?

Drawing on his 10 years of experience in the consulting sector prior to joining Guelph Water in 2015, the speaker will discuss the common reasons why many organizations have such poor drawings. Not having proper drawings does have real costs to the organization! An overview of the many (hidden) costs, inefficiencies and risks that stem from poor drawings will also be discussed.

The presentation will then outline what can be done to fix this situation. An important clarification will be made between “facility drawings” as “as-built drawings that result from construction projects.” The two types of drawings, namely “facility drawings” and “as-builts”, are not equivalent and have very different roles. Best practices for each type of drawing will be provided.

The talk will conclude with an overview of Guelph Water’s program for developing and maintaining facility drawings, specifically: P&IDs, facility layouts, network drawings, and security drawings. Examples will be shown, along with a discussion about how decisions were made with respect to how much detail include, developing CAD standards, and the workflows/manpower used to maintain them. The talk will conclude with a discussion about how the facility drawings are now used throughout the organization, including the staff groups for compliance, operations, maintenance and capital project delivery.

## ABOUT THE AUTHOR



**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. He is an active member of the AWWA and WEF, and currently sits on the Automation Committee of the Ontario Water Works Association. Graham is co-chair of the ISA112 SCADA Systems Standards committee, and a voting member of both ISA18 Alarm Management and ISA101 HMI Design standards committees. During the past 15 years, he has published over 40 papers on a wide range of automation topics. Contact: [graham.nasby@guelph.ca](mailto:graham.nasby@guelph.ca)