

# **City of Vancouver**

## **Vancouver, Washington**

### **I. Respondent:**

Jeff Kanyuch, Principal Project Manager, Automation Systems, Jacobs

### **II. Presenters:**

Jeff Kanyuch - Principal Project Manager, Automation Systems, Jacobs

Frank Dick, Wastewater Engineering Supervisor, City of Vancouver, WA - Public Works

### **III. Treatment Plant Characteristics:**

- Wastewater Collections and Treatment = (2) WWTPs, (1) industrial pretreatment lagoon, (6) regional pump stations
- 1,200 employees
- 235,000 customers served

### **IV. Innovation: Vancouver Washington Reduces Utility Risk with Major SCADA Upgrade**

#### **A. Description**

The project is generally a control system upgrade for the City's wastewater collection and treatment infrastructure. The project included replacement of the PLCs, upgrading the entire system SCADA HMI, implementation of new SCADA

network and computer infrastructure, upgrade of the plant fiber optic systems, construction of new dedicated server and control rooms at both WWTPs, replacement of all VFDs over 100HP with new Ethernet-connected drives, implementation of new instrumentation to accommodate new process control functions, and implementation of new high-speed data links to connect all of the project sites.

The project was required to reduce risk associated with outdated / obsolete components and systems, improve system reliability and security, provide new functions to improve process control and facilitate O&M by reducing manual labor efforts, and update/improve the system documentation to facilitate O&M.

Work began with a business case evaluation (2016), followed by concept development and design (2017/2018), and several years of implementation (planned completion in 2022).

## **B. Type of Innovations**

- Increased Use of Information Technology
- New treatment process
- New approach to documentation, technical training, staff development, or knowledge management
- Optimization of existing resources

## **C. Motivation for Innovations**

Primarily system risk associated with aging systems and inability to acquire replacement components for obsolete systems.

## **D. Barriers/Challenges**

Barriers are primarily financial, as the City and project staff have had to pace timing of project with available funding.

Project staff and City staff spend about a year in a structured and facilitated needs evaluation and Business Case Evaluation. This effort rolled into unflinching support from City management and City Council.

## **E. Benefits**

Increased reliability for automated process systems through both hardware and software upgrades

Improved visibility of real-time and historical process functions and data to inform operators to make process decisions

Engagement between project staff and plant personnel facilitated operators to “own the process” and gain sharper understanding.

## **F. Effect on Staff Training**

More focused training via use of standardized systems and approaches. New training required for new systems (virtualized servers, ring networks, Ethernet-connected components).