



CONCENTRIC
INTEGRATION



Public Works Technologies

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Overview

What are we covering?

- Introduction and bio
- Public Works Technology
- On-going discussions
- Q&A





Lawrence Kravets

IT Director

My story:

- University of Illinois at Chicago, 94
- Certified Information Systems Security Professional (CISSP)
- Global Industrial Cyber Security Professional (GICSP)
 - 25+ years in Information Technology
 - 12 years in IT / OT @ Concentric Integration

A grayscale photograph of a person's hand adjusting a knob on a control panel. In the background, a keyboard is visible. The image is partially overlaid with a blue and gray graphic on the right side.

Public Works Technologies

- Lots of technologies are in use at Public Works
 - Behind the scenes
 - SCADA, GIS, Water / Wastewater
 - Community Engagement
 - Helps all parts of the organization
 - Police / Fire / Finance
 - Open dialog / discussions

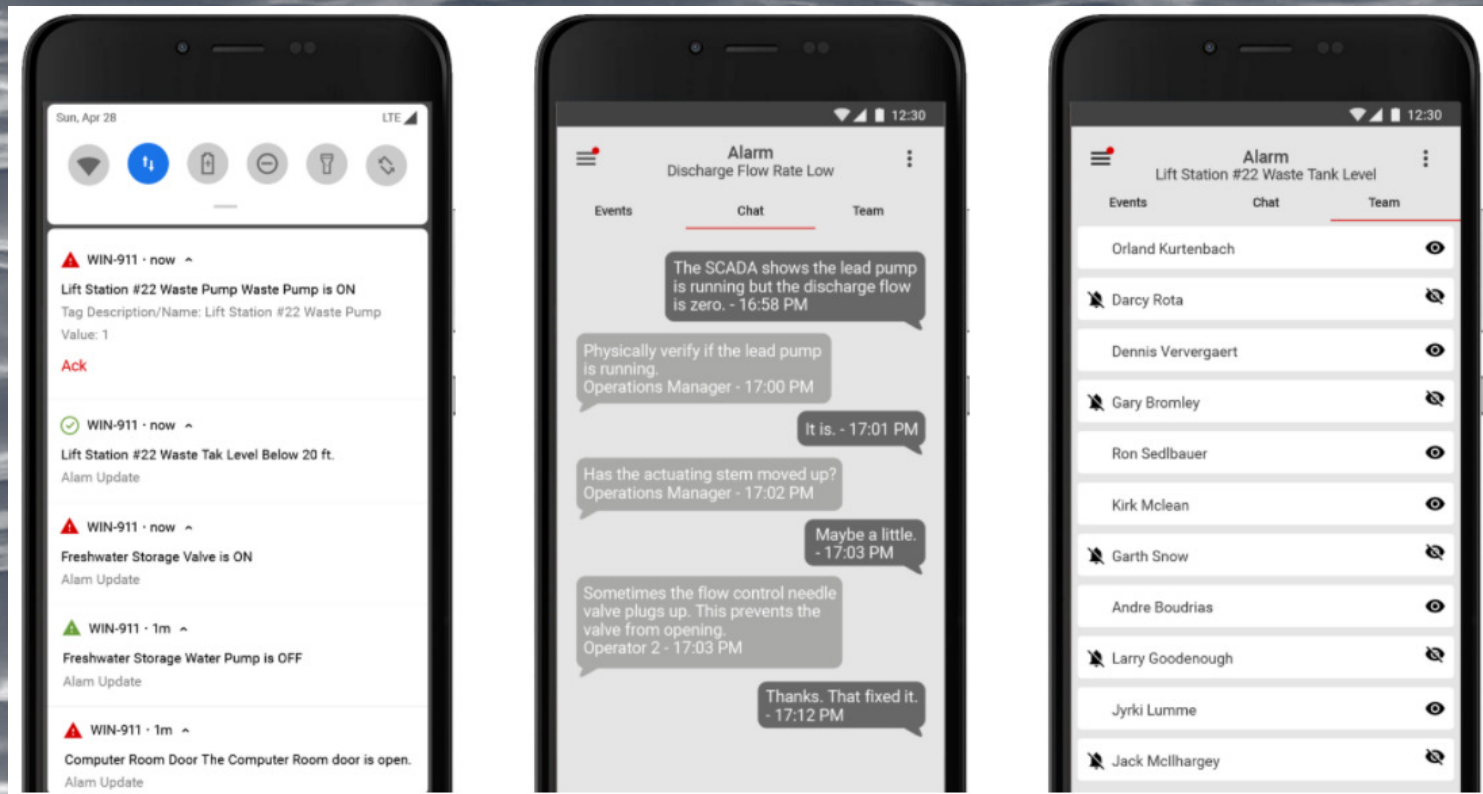
SCADA

- Many of you may have SCADA
 - Maybe its just viewing operations from the SCADA computer
- Provide secure remote access to review operations in the field (and off hours)
- Alarming on the smartphone
 - Not just phone calls but interactive alarm management
- Historical access with trending of data



Smartphone alarm management

- Cloud based
- Acknowledge right on the phone – no more calls





SCADA (continued)

- Automated reporting
 - Cloud tools to send PLC data to reporting services
- Operator rounds and collections
 - Use a tablet to automate rounds
 - Checking in using RFID
 - Chemical handling and storage - tracking
- Predictive analytics for service (SCADA trending)
 - With lift stations some trends show a sawtooth graph - maybe something is stuck and forcing a pump to continuously run

SCADA Trending

- Review sparklines for abnormalities
- Review the level trend and maybe you are expecting a certain pattern
 - Lift station ramping up fast could mean that a pump needs maintenance or longer ramps might mean its not as efficient now



Fleet Management

- Fleet Vehicles
 - All types: service trucks / plows / building inspectors
- Installation of cellular routers with GPS locator
 - Very much like Police vehicles
 - Automated Vehicle Location (AVL) systems – location / speed / stops
- Dashboard / Live tracking – safety when vehicles are on the road
 - Share data on website to the community
 - As a resident you can see where plows are on the map
- Install front facing cameras – see what is going on
 - Snowplows
 - Live weather / snow on the roads – post online
- Sometimes integrated with Asset Management to track service history on the vehicle



Asset Management / Computerized Maintenance Management System (CMMS)

- Track the assets that you are responsible to manage and maintain
- Creation of maintenance records and service reminders (work order management)
- Transfer of institutional knowledge into a maintenance management system
 - Some assets are unique in their installation and operation
 - Photos
- Assistance in budget planning
 - You know if things are just too old or should be replaced due to maintenance issues
 - Reports can help tell the story
- Coordination of resources and planning
 - Resource planning
 - Time and money savings by creating efficiencies
- QA/QC
 - Maybe you need to document your QA/QC

Asset Management / Computerized Maintenance Management System (CMMS)

- GIS integration
 - Images and exact locations tell the full story
- Predictive analytics and scheduling of work
 - Trouble areas
 - Inspection of all sorts
 - Exercising valves for hydrant
 - Seasonal tasks
- Some solutions can be connected to Public Works contractors who can use the platform
 - Outsourced services
 - Televising
 - Forestry



Drones

- Small unmanned aircraft piloted externally
- Damage inspection
 - Infrared cameras used to inspect for corrosion.
- Bridge inspections – faster and safer
 - Get underneath, even over water
- Keep workers safe by using a device to record and then review from the office
 - Keep images to track aging over time
- Specialized drones can even go into confined spaces





Fuel management systems

- Most people have some sort of fuel management
 - Or maybe use a service station
- But how about using the amount of fuel used and calculate against maintenance records to get the total cost of ownership of the vehicle?
 - Integrate into fleet management software
 - Track fuel economy – trending of fuel consumption may show that the vehicle needs service
 - Better insight



Community Engagement

- Social media notifications – many people get their news information from social media platforms
 - You can provide local alerts as Facebook notifications
- Blogs to detail community project facing projects
- Emails with notifications on active projects
- Fleet management with posting locations on a web portal
 - Let the community know where the plows are
 - Sending of inspectors or service vehicles

Next steps?

- Talk to your peers
- See what others might be doing
- Get demos from vendors



Q&A

Questions and answers

- Open discussion – what are others doing?
- Additional topics?
 - Water meters and usage reports

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