

Cloud-Based SCADA Solution to Monitor Storm Water Pumping

G. Mike Stoup, PE*, Mark Jones, PE², and Jason Davis, PE³

¹McKim & Creed, Inc., 1365 Hamlet Avenue, Clearwater, FL 33756-3331

(*Email: mstoup@mckimcreed.com and Phone: (727) 442-7196)

²Department of Public Works, City of Virginia Beach, SWU-Engineering Construction Operations, 2405 Courthouse Drive, Building 2, Virginia Beach, VA 23456

(*Email: maarjone@vbgov.com and Phone: (757) 385-1450)

³McKim & Creed, Inc., 1730 Varsity Drive, Suite 500, Raleigh, NC 27606

(*Email: jddavis@mckimcreed.com and Phone: (919) 233-8091)

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SCADA, cloud-based, flooding, disaster recovery, remote monitoring, storm water

ABSTRACT

With the impacts of Hurricanes Harvey and Irma in 2017, the need to control storm water and flooding weighs heavily on the minds of public works employees. In this presentation, we will discuss one coastal community's cloud-based SCADA solution.

The geographic location of Virginia Beach, Virginia makes it extremely vulnerable to flooding. To minimize risk, the Public Works Department (PWD) has installed 16 storm water pumping stations in strategic locations throughout the city.

While adequate in their ability to pump water efficiently, the pumping stations lacked remote monitoring and alarming capabilities. Each station had a different type of control system, the systems were aging, and documentation was inaccurate or missing altogether.

PWD implemented a remote monitoring system capable of reading the critical values from each station and generating alarms regarding operational issues and adverse conditions. The system offers relatively large throughput, small antennas and quick disaster recovery. A private cellular network eliminates the need for the system to go through the City network, alleviating access and security concerns held by City IT staff. A redundant VTScada HMI system can be viewed on any device with a web browser and internet connectivity, and includes text and email alarm notification as well as trending and data logging. Offsite

server-based HMI software doesn't require City resources for maintenance and is not subject to destruction in the event of a major storm.

The City has already added more stations, including sluice gates and other flood monitoring points. The system has also helped the City identify sub-optimal operating conditions through station operational fingerprinting techniques.

In this presentation, we will discuss how the decisions regarding this particular solution were made, how they are benefitting the City, and how other public works departments can mitigate flooding risks with solutions geared specifically to their needs.

ABOUT THE AUTHORS

G. Mike Stoup, PE: *As instrumentation and controls group manager at McKim & Creed, Mike oversees a department of 12 controls and SCADA engineers, designers, programmers and technical specialists. His career spans more than 22 years, and includes the design, implementation and management of SCADA systems and process instrumentation and controls projects in the industrial and municipal marketplace. Mike is a graduate of the University of South Florida with a degree in electrical engineering. Contact: mstoup@mckimcreed.com*