**INS**
**INDUSTRIAL NETWORKING SOLUTIONS**
*Industrial & Enterprise IoT Solutions*

**CASE STUDY**
Wireless IoT Upgrade Case Study
Elk City, OK

## OVERVIEW

Industrial Networking Solutions assisted Elk City, Oklahoma in modernizing their water supply system with minimal disruption to their customers and well-site landowners.

ROUTE US 66 Visit Elk City



## CHALLENGE

The city wanted a new SCADA system that included a new control interface at the plant, the ability to control the existing sixty-five wells and would allow for additional wells to be added to the system in the future.

The system the city used for years to monitor and control water relied on direct-bury electrical circuits from the water plant to each of the well sites. This caused a problem because the cables had deteriorated over the years and repair or replacement of the cabling was costly and required digging trenches on local farmers' land. The city realized its monitoring and control infrastructure needed to be updated and contacted Industrial Networking Solutions (INS) for help. INS met with the city authority and determined they needed to provide a modern solution that would eliminate the need for the long run electrical circuits, modernize well site interfaces and permit personnel to securely access the SCADA system from their cell phones.

## SOLUTION

INS proposed a solution to replace the existing relay-based control system at each well-site with an Opto22 RIO intelligent edge device with integrated input/output control.

Cellular modems were installed at each well-site to wirelessly connect them back to the water plant, replacing the buried electrical circuits. An Ignition SCADA system provided the visualization and monitoring of the well water system to operators at the water plant and from their smart phones. PepLink cellular routers were provisioned for a Verizon private network and were installed at each well-site, which allowed a secured connection to the water plant. Due to the city's private network, their SCADA network is not accessible to anyone outside of it.

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## ▶ RESULTS

The INS Services team provided a turn-key solution including functional specification, panel drawings, panel build, programming, installation support, as well as startup and post-project support services.

Elk City was able to eliminate the direct bury cables and now has a high-bandwidth SCADA network built to support future growth. With the new network in place, the city can monitor their wells from the main plant or on their smartphones. The SCADA system notifies city personnel immediately if there are any issues at a well and allows operators to adjust in real-time. Since they no longer need to send someone to each well to monitor it or turn it on or off, they are saving money and manpower.

## ARCHITECTURE & TECHNOLOGIES UTILIZED
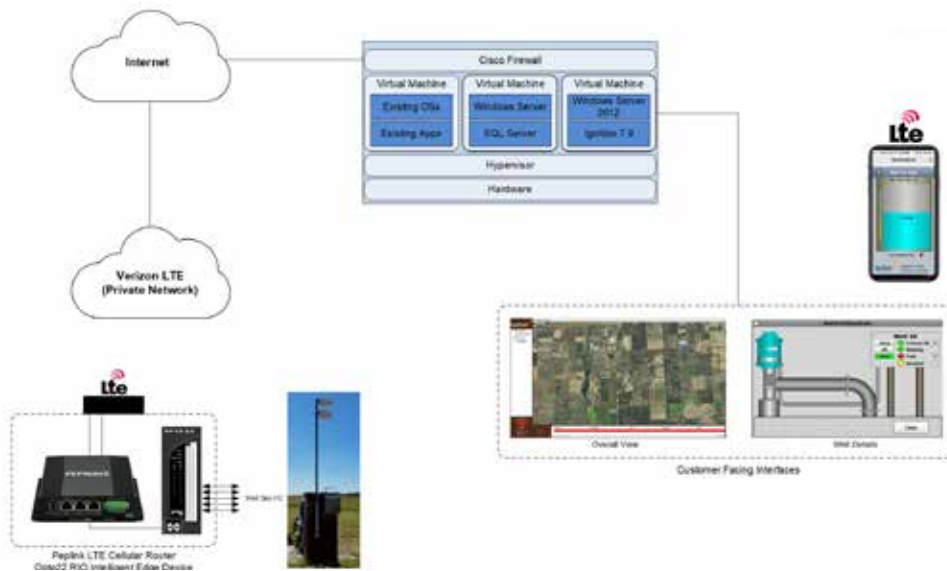


## TECHNOLOGIES USED


**verizon**
Verizon Wireless
Private Network


**Ignition**
Cloud-Hosted
SCADA System


**peplink**
Peplink Cellular Routers


**OPTO 22**
RIO System