Sonoma County , California

Connected Traffic Signal Systems Reduce Congestion and Costs for Sonoma County Taxpayers - A Sierra Wireless® Remote Monitoring Solution

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CUSTOMER CRITICAL CHALLENGE

- Connecting traffic signaling systems to better monitor and match traffic flows 24/7.

SOLUTION

- AirLink® RV50 Industrial LTE Gateway wirelessly connects traffic signaling system with county operations.

BENEFITS

- Improved ability to monitor remote locations, download new software, traffic signal schedules.
- Reduced monthly communications costs.
- Reduced implementation time for new intersections which will no longer require landlines to be installed.

Business Challenge

The county manages a network of roadways throughout the county and the county ITteam provides support for traffic signals and intersections.

Each of Sonoma County’s traffic intersections are “connected” via a SCADA system,and a typical intersection includes signals, pavement sensors and a controller typicallylocated in close proximity to the system. The controller is connected to countyoperations, and enables the operations team to remotely monitor and control trafficflow across the region. When connected, these components can be outfitted withnew software and traffic signal schedules which keep traffic flowing day and night. Theaverage cost for an intersection is approximately $750,000.

Until recently, each intersection was “hard-wired” to county’s operations usinglandlines. Each intersection is “always on”, and the system pings and polls eachsystem regularly to get status. This wasn’t without its challenges, and provedincreasingly unreliable with breakdowns every few days. In addition, when pollsreceived information, the county’s operations team wasn’t notified, so a traffic signalcould be out and the county would rely on law enforcement and the community to letthem know.

New timing could be downloaded to each intersection but, when failures occurred,all timing information was lost, resulting in manual re-loading of software on thecontroller. In addition, the cost of 24/7 operations was approximately $220,000per year. Recently, the county’s carrier partner announced they

would no longerprovide the hardwire solution, forcing the county to look for alternate ways to keepintersections connected.

Also, much of the equipment in the traffic control system is 20 years old, whichcomplicated finding a communications solution that would support legacyinfrastructure.

Sierra Wireless AirLink® Solution

The county evaluated several wireless gateways that they hoped would providea replacement for their hardwire solution, and worked through USAT Corp, anexperienced wireless reseller based in North Carolina. They had difficulty finding areliable solution; one product was faulty, and others couldn’t be configured to workwith a 3-layer VPN and static IP’s. USAT mentioned the Raven RV50 to the countywhen it was launched in late 2015, so the county decided to install the gateway to seehow it would work with their application.

The county was able to configure the RV50 out of the box, and received somehelpful support from USAT for the VPN configuration. They got the systemactivated in one day, and now have a solution which not only provides uninterruptedconnectivity, but notifies them of problems like polling errors. The county can nowdownload new software to the entire system at once, or select specific systems toaccommodate special events, and can push signal timing on demand. What’s more,the communications cost of $240,000 has been reduced to $16,000 per year – a 93%savings using cellular communications over landlines.

“The equipment paid for itself in 4 weeks,” said Mark Wein, Civil Engineer, SonomaCounty. “We’re getting ready to install two new intersections, and being able to deploya wireless solution simplifies deployment. With our savings, we’re able to look atupgrading our traffic signal contollers.