



MONITORING & CONTROL CASE STUDY

Parker Water and Sanitation District

Streamlines Monitoring and Control with FreeWave Wireless Communications Network

Parker, CO – The Parker Water and Sanitation District (www.pwsd.org) comprises more than 17,000 single family equivalents (SFEs) within Parker, Colorado, covering a service area of approximately 43 square miles. Parker has the distinction of being the fastest growing town in the fastest-growing county in the United States, experiencing a 50-fold population increase in its short municipal history. To support this explosive population growth, the district aims to provide, “secure and long-term, high-quality water service.”

In line with its Mission Statement, the District sought a Machine to Machine (M2M) communications network that could function “both economically and without interruption.” By having a highly efficient and reliable communication system, the water district could enhance its operations and help ensure that its customers are receiving the best possible service. Parker Water and Sanitation District looked to its technology solution partner, Process Control Dynamics, Inc. (PCD Sales) (www.pcdsales.com) to help it find a real-time, reliable option for wireless M2M technologies that would easily integrate into its existing Supervisory Control and Data Acquisition (SCADA) system.

FreeWave Usage and Applications

As the need for overhauling and updating its old network became apparent, the Parker Water and Sanitation District started the process by replacing its Programmable Logic Controllers (PLCs). As it began exploring options, FreeWave Technologies became apparent as the district’s best fit for its new M2M communication network. FreeWave provided complimentary network design, path study analysis and diagnostic tools. Tool Suite software, provided free of charge by FreeWave, allowed the water district to diagnose and configure the wireless radios right from the SCADA programmers’ desktops – eliminating the need for remote field repairs and saving the district significant time and resources. This feature became a significant time saver and greatly reduced the need to drive out and locally repair communication issues with the remotely located wireless radios. By working with PCD Sales and FreeWave, the water district mapped out and identified locations for network gateways to ensure effective data transmission. Parker Water and Sanitation District then had a clear path of development, and a chance to test the wireless radios before integrating them into its overall M2M communication network.

Today, FreeWave's wireless radio models that are integrated into Parker Water's M2M communication network include its HTplus, FGR Series Radios and FGR2-IO. Parker Water has two networks – one for wastewater and the other for water treatment. For wastewater monitoring, the network design is fairly simple and consists of FreeWave's FGR master and slaves. On the water side, the design is more complicated and required more detailed planning and engineering to deploy a comprehensive M2M communication network. To ensure reliable data transmission, the new network consists of three layers: the first comprised of the network gateways; the

second is the HTplus radios connected to the gateways; and the third layer is some of the HTplus radios connected through a subnet, which is essentially a subdivision of the IP network that consists of FGR radios. Additionally, with FreeWave's radios, the water district can communicate with every PLC in its network.

HIGHLIGHTS

- > Established an integrated and reliable communication network based on network design and path studies.
- > Developed a M2M network that is capable of delivering realtime communication across long distances, despite hilly terrain and variable Colorado weather.
- > Gained the ability to diagnose and configure communication issues from the dektop, along with top-notch customer support, as key success factors.
- > Provided a faster, more reliable M2M communication network to ensure optimization of water operations.
- > Enhanced public safety by constantly monitoring critical data, such as tank levels, temperatures and pressures on a real-time basis.



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