

Triad Wireless Protects Municipal Water Storage with Video Surveillance

A Trilliant Wireless WAN provides the wireless communications for a multi-tower network of specialized video cameras providing real-time, centralized monitoring of water storage towers throughout the city.



Video surveillance technology is of the quality today that government agencies are finding it an invaluable tool when it comes to monitoring facilities and other assets. Trilliant's partner, Triad Wireless of Phoenix, AZ is rapidly expanding its reputation as the expert to hire when it comes to designing and deploying a wireless video surveillance solution. More than just video cameras, Triad combines the latest in video analytics servers that can track, identify and assess the threat of objects within view. They then link their cameras using a Trilliant wireless WAN mesh backhaul to achieve the highest level of reliability, yet with the ease of wireless mesh that offers the lowest total cost of ownership.

"Trilliant lets me... solve more business opportunities with one infrastructure investment, and that's important to be competitive"

—Rory Conaway,
President, Triad Wireless

A major Western US metropolis (confidential for security reasons) determined their water supply required just such an approach to protecting this essential asset for its city's citizens. As a fast growing municipality, occupying over 80 square miles of scenic desert terrain, they share scarce water resources with their large metropolitan neighbors. Protecting their municipal supplies was identified as a key initiative in the city's 2006 general plan.

What are the concerns facing cities about water supplies? They are identified as ranging from nuisance to potentially catastrophic. The municipality utilizes 16 water towers located throughout the city, often on elevated lands that are somewhat isolated. Even when fenced, the facilities have been victim to intrusion. Municipalities are finding that the rising value of copper makes these unguarded facilities an attractive target to theft of fittings and piping, and of course, the potential for contamination of the water supply itself, whether accidental or malicious, is of growing concern.

As Rory Conaway, President of Triad Wireless, states, "They needed a flexible system that would let them address all levels of concern facing their water supply, without having to invest in onsite security staff at each tower." With their focus on public safety applications, Conaway is finding the demand for their services growing exponentially, which is carrying their business activities nationwide. "Cities that have installed one application, such as video surveillance, are bringing us back to overlay other services like vehicle mobility communications; a Trilliant wireless WAN infrastructure deployed upfront lets us easily support additional services over the same infrastructure."

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To protect the municipality's water storage, Conaway uses 57 cameras to monitor the 16 water tower locations remotely. The cameras are connected to a SecureMesh Extender located at each tower, which then links via 4.9GHz backhaul to one of two SecureMesh Gateways located at the central municipal tower. The two Gateways divide the network to allocate and balance bandwidth, while two additional Gateways located on the tower provide redundancy in the event of a lightning strike or other disruption to the link. Says Conaway, "It makes more sense to use the redundancy built into Trilliant's mesh to eliminate down time, rather than bring in a lift to reach units mounted on a 100 foot tower."

Trilliant's directional antenna array makes it easy to achieve long range backhauls while maintaining high capacity links. The wireless mesh installed by Triad Wireless requires links up to 16 kilometers (10 miles) from the water towers to the central municipal tower. Trilliant's solution can meet this and maintain more than adequate bandwidth. In fact, the additional bandwidth available over the mesh network is allowing Conaway to propose new applications for the city to support their law enforcement initiative to operate mobile communications from roaming police cruisers. "Trilliant lets me scale more applications without compromising reliability of the overall network. I can solve more business opportunities with one infrastructure investment, and that's important to be competitive."

SecureMesh™ WAN Solution

Trilliant supports hybrid mesh network deployments with an advanced wide area network (WAN) architecture for greater scalability and reliability of the wireless mesh backhaul. The solution includes:

- SecureMesh Gateway nodes to inject capacity in the network
- SecureMesh Extender nodes to expand the mesh to cover up to 50 miles from the SecureMesh Gateway
- SecureMesh Connector nodes to provide broadband connectivity

Benefits

Exceptional performance and dependability based on multi-radio design and advanced synchronous mesh architecture to manage traffic throughout the wireless WAN

Unparalleled scalability and spectral reuse from dynamically-switched antenna array that increases range and capacity while mitigating the effects of self-interference and line-of-site obstructions

Low total cost of ownership (TCO) resulting from reduced deployment and RF planning complexity, and the ability to support multiple applications over a common wireless WAN

Flexibility to support multi-use networks, including 2.4GHz Wi-Fi, 4.9GHz public safety access, VoIP, video surveillance, SCADA, and more

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