CASE STUDY

City of Reading Leverages LightPointe Optical Wireless Technology To Extend High-Speed Network to New Public Works Facility

Secure LightPointe Link Also Facilitates City Disaster Recovery Initiative While Offering Exceptional Cost and Bandwidth Advantages Over Competing Technologies

Widely recognized for its rich history of railroading and industry, the city of Reading, Pa., today revels in cultural advancement, boasting a symphony orchestra, civic opera company, colleges, hospitals and more.

To accommodate fast-paced population growth and the need for services, the city government built a new public works facility in late 2004. As construction neared completion, city officials realized they needed a cost-effective, reliable way to extend the municipality's communications network to the new building, which is approximately a half mile from city hall.

THE CHALLENGE:

An important factor in Reading's search for a connectivity solution was finding a highly secure system that would preserve the integrity of sensitive data. In addition, city officials determined they needed a Gigabit Ethernet link, which provides 1.25 gigabits per second—more than 25 times the throughput of a standard fixed T3 line.

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> City of Reading

When the city's IT manager, Henry Tangredi, began his evaluation of connectivity alternatives, he contemplated T3 lines from a local service provider, but found the bandwidth to be inadequate and monthly leasing costs exorbitant. Fiber-optic cable was also ruled out because installation would require deep trenching beneath railroad tracks in an established urban setting. In addition, fiber optics involved a costly long-term leasing commitment from a local service provider.

Seeking a more economical alternative that would also support a government disaster recovery plan to transport nightly data backups of up to one terabit of data to the new facility, the city enlisted the help of Integral Wireless Solutions, Inc. As a Reading-based reseller specializing in wireless products and services, Integral Wireless introduced Tangredi and his team to LightPointe, a pioneer in the development of Optical Wireless solutions based on free-space optics (FSO) technology.

LightPointe designs and manufactures license-free, high-speed outdoor wireless products that have earned high marks in both government and Enterprise networking installations. Optical Wireless products link two or more buildings with classic LAN-to-LAN backbone connectivity, delivering bandwidth from 100 Mbps up to 1.25 Gbps.

After confirming line-of-sight for a wireless connection between the two buildings, and following careful due diligence, Tangredi and his staff decided their best all-around choice for cost savings, security and reliability was LightPointe. They chose the LightPointe FlightStrata™, a high-performance Optical Wireless system with full-duplex throughput of up to 1.25 Gbps.

THE SOLUTION:

According to city of Reading Mayor Thomas McMahon, the LightPointe FlightStrata has provided an ideal building-to-building connectivity solution for Reading. "The decision to go with LightPointe was easy," explains McMahon, who is leading the city to deploy advanced technologies. "LightPointe met all of our requirements while also delivering a quick return on investment, with pricing at a fraction of other alternatives. Best of all, the FlightStrata saved the city from the trenching disruptions of fiber-optic cable."

High-speed campus-style networks in urban settings such as Reading are driving increased demand for Optical Wireless connectivity solutions, according to Mickey Branson, executive vice president of business development for Integral Wireless Solutions. "Customers in government and private settings alike deploy Gigabit LANs only to face connectivity challenges as they expand operations to additional buildings," adds Branson. "LightPointe solves the dilemma with secure, high-speed wireless links that are ideal for handling today's bandwidth-intensive applications, such as voice over IP, digital imaging and video."

As LightPointe's flagship product, FlightStrata not only delivers maximum performance for the city of Reading, but also offers Multi-Beam Array Tracking (MBAT), Automatic Power Control (APC) and Optical Beam Shaping (OBS). These advanced features ensure system redundancy via multiple send-and-receive paths, provide additional power during reduced weather visibility and allow continuous adjustment to address any movement from building sway.

THE BENEFITS:

Today, a staff of 60 municipal employees – representing almost one-tenth of the city's workforce – occupies the public works facility. The LightPointe system makes it possible for employees to gain Gigabit Ethernet access to Reading's network. Installation was a breeze, according to Tangredi. "Once the link was established, we were up and running very quickly. Training took only five minutes," he recalls.

Almost immediately, the Reading staff began reaping the benefits of their new high-speed Optical Wireless link. With Gigabit Ethernet bandwidth, the FlightStrata ensures efficient and transparent transfer of even the largest files. In addition, reliability has already exceeded the staff's expectations. "The FlightStrata has performed flawlessly," says Mayor McMahon. "Even during one of our most severe storms, the link remained up and continued operating without a hitch."

The FlightStrata has also played a vital role in the city's disaster recovery initiative, allowing quick and easy transport of 220 gigabits of data on a nightly basis from city hall to the secondary data center in the public works building. With backups anticipated to soon reach the terabit level, Tangredi says he also likes the fact that the FlightStrata offers plenty of bandwidth.

In addition, city officials are pleased that the LightPointe product addresses their stringent data security requirements. Optical Wireless, which is immune to radio frequency interference, has built-in security features. "Ensuring data integrity is critically important to us," explains Tangredi. "Because it's virtually impossible to intercept an Optical Wireless transmission, we have every assurance that LightPointe is providing the utmost in protection for our sensitive city data."

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Most importantly for city governments such as Reading, which operate on tight budgetary constraints, the LightPointe FlightStrata has proven to be extremely affordable, offering a significant cost advantage over the monthly leasing requirements of T3 or fiber. "With LightPointe, we've minimized our ongoing costs substantially while finding the best possible building-to-building connectivity solution for Reading," concludes Mayor McMahon.

www.lightpointe.com | +1.858.643.5200

CUSTOMER:
City of Reading, Pa. (http://www.cityofreadingpa.com/)

INDUSTRY:
City government

RESELLER:
Integral Wireless Solutions, Inc., (www.integralwireless.net/)
a Reading, Pa.-based provider of worldwide consulting, design, installation and management of wireless data and voice networks.

CHALLENGES:
- Fast-paced growth required construction of a new public works facility.

- Network reliability and protection of highly sensitive city data were top priorities.

- Fiber-optic cable required deep trenching beneath city railroads.

- Cost constraints reduced list of viable options.

SOLUTION:
- LightPointe FlightStrata with Multi-Beam Array Tracking (MBAT), Automatic Power Control (APC), Optical Beam Shaping (OBS) and connectivity speeds ranging from 1.5 Mbps to 1.25 Gbps.

BENEFITS:
- High-speed networking at a fraction of the price of other alternatives.

- Convenient wireless link requires no trenching for trouble-free urban installation.

- Secure, reliable LAN extension withstands severe weather and protects critical data.

- Sufficient, expandable bandwidth to support disaster recovery initiatives.