



Case Study Coe & Van Loo



Coe & Van Loo Consultants Share Bandwidth-Intensive CAD Files and Business-Critical Data between Locations with Reliable BridgeWave E-Band Gigabit Wireless Links

Coe & Van Loo Consultants Inc. (CVL) is a highly regarded engineering services firm with expertise in land planning, civil engineering, two- and three-dimensional graphics, water resources, environmental science, landscape architecture, surveying and construction services. Founded in 1958, the Phoenix-based company has set the standard for quality, "one-stop shop" project services throughout the thriving metropolitan area.

CVL has grown to more than 300 employees who are dispersed across two main facilities in the Phoenix area, as well as smaller affiliate offices in Denver and Las Vegas. Over the years, the company has earned a stellar reputation for its comprehensive suite of services while attaining accolades for cutting-edge work in hydrology and water and waste management.

According to John Bowers, network administrator for CVL, the company relies on the latest technologies, especially in two- and three-dimensional design and drafting along with production-quality rendering. "Coe & Van Loo embraces state-of-the-art technology to bring development projects to life quickly and expertly," he explains. "Not only do we deal with very large production files each day, we collaborate on all projects, so it's likely several people may be accessing the same files simultaneously but from different locations."

CHALLENGE

In supporting various project teams, CVL's IT group retains all project files and business-critical applications on the corporate network servers, instead of allowing work-in-progress files to be saved on local drives. As a result, network availability and reliability are paramount, especially the crucial network extension that links the Phoenix facilities.

To connect the two offices, which are nearly two miles apart, CVL had a wireless solution after rejecting the exorbitant cost of trenching for fiber along with the high monthly fees of leased, fiber-optic service. In 2004, the company installed a 100Mbps, 18GHz wireless link to deliver bandwidth for several dozen staffers at the secondary location in downtown Phoenix.

A growth spurt in 2006, however, increased headcount downtown to nearly 90 people, overburdening the 100Mbps wireless link. "Users began complaining of network latency and inefficiencies," says Bowers. "Copying a 40MB file across the network took up to four minutes. Since our rendering files were as large as 200MB and Adobe creative suite files were extending into 5GBs, it became increasingly apparent we needed more bandwidth."

At the time, CVL's best option involved upgrading to dual 400Mbps Ceragon Networks links. The price for the upgrade, however, was approximately \$125,000, which was completely cost prohibitive. While contemplating more affordable options, the 100Mbps link experienced a catastrophic failure in August 2006, severing connections between the two sites. "We had a serious problem since we had no backup connectivity and our phone system was piggybacked on the failed link," recalls Bowers. "We were completely down, so it became a matter of how fast could we fix the problem and minimize impact to our business."

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- John Bowers,
Network Administrator, Coe & Van Loo Consultants Inc.



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SOLUTION

CVL's IT team sprang into action, setting up temporary offices at headquarters for the stranded employees. After learning it would take up to two weeks to repair the faulty bridge, CVL decided to seek other wireless expertise rather than be forced into upgrading to the costly yet still bandwidth-constrained dual 400Mbps link.

CVL sought the assistance of Renaissance Networks (RNI), a Tempe, Ariz.-based provider of cutting-edge wireless radio systems. "Within hours, Renaissance Networks' executives were on our premises brainstorming how to get us up and running fast," notes Bowers. "They understood we were facing productivity losses that could exceed six figures, so they worked diligently to find a solution that would meet our immediate and longer-term requirements."

RNI was convinced that only a Gigabit Ethernet solution would deliver the high throughput demanded by CVL's applications. "CVL had GigE to the desktop at headquarters, which set the tone for what users expected at the remote site," says Todd Temple, senior account manager for RNI. "The slower network connection already had cost them lost productivity and inefficiencies, so we knew we had an opportunity to resolve their crisis and deliver a more robust solution."

RNI set sights on a new product from BridgeWave Communications, a pioneer in Gigabit Ethernet wireless networking. In June 2006, BridgeWave announced the GE80 and AR80 E-Band links, the first affordable, compact, easy-to-install Gigabit RF connectivity solutions operating in the 80GHz frequency spectrum. BridgeWave's Gigabit wireless links offer 10 times the bandwidth of comparably priced 100Mbps wireless solutions. The BridgeWave links support connectivity up to five miles, which easily accommodated CVL's two offices. "BridgeWave's GE80 was the optimal solution for meeting CVL's network bandwidth, distance and budget requirements," adds Temple. "BridgeWave has built a lot of capabilities into a cost-effective, compact and easily deployed wireless bridge."

RNI provided CVL with an economical, three-year lease, which included a redundant, hot-swap GE80 bridge—all for \$3,400 a month. "We were able to get a Gigabit Ethernet solution with fully redundant backup for much less than the price of an 800Mbps link without a maintenance contract," explains Bowers. RNI worked with its BridgeWave distributor, Hutton Communications, to accelerate delivery, so the equipment could be installed and operational within three days after the outage. "RNI restored our network faster than anticipated," Bowers adds. "The impact from the outage was minimal, thanks in large part to RNI's great response, expert advice and top-quality service."

BENEFITS

The most immediate benefit of the new connection was the rousing end-user endorsements of network speed. Early testing showed moving a 150MB file between the two offices took less than six seconds, a big improvement over the previous time of up to four minutes. To further leverage its amplified throughput, CVL placed Gigabit switches on each end of the wireless link to ensure GigE connectivity network-wide. "We receive nothing but kudos about our blazing fast network," says Bowers. "The remote office now has the same functionality as headquarters. Now no one cares if they have to move to the other building. The only thing that changes is the view."

Seamless connectivity between the sites ensures staffers can exchange large AVI and MPEG files without network delays. For example, CVL now develops short videos to depict proposed projects, such as displaying the transformation of agricultural land into a housing development. "With our high-capacity BridgeWave link, we no longer have bandwidth limitations so we can embrace the latest and greatest tools to improve the quality of our work, such as mental ray, for fast production-quality rendering and mapping innovations like Microsoft Visual Earth and Google Earth," Bowers adds.



BridgeWave



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An unexpected but welcome benefit of BridgeWave's robust bandwidth was the ability to increase Internet access from 10Mbps to 200Mbps. "Boosting our Internet connectivity to OC3 speed was amazing," says Bowers. "BridgeWave's Gigabit Ethernet links have enabled us to take our overall efficiencies to the next level."

The BridgeWave GE80s also impressed CVL with their small form-factor, ease of installation and simplicity of operation and management, which has led to dramatically lowered administrative overhead. "The GE80s are compact devices, which are simple to install and even easier to operate," Bowers says. "Our previous 100Mbps RF link was three times larger and complex to deploy and manage. The inherent security of the licensed BridgeWave 80GHz links is another advantage as the products boast an extremely narrow antenna beamwidth, resulting in high resistance to data interception." Additionally, CVL appreciated the expedited registration process that BridgeWave offers for spectrum licensing, which enabled them to move forward with the accelerated install without any delays.

Since the BridgeWave units were installed in August 2006, CVL has experienced flawless operation. "I'm a big believer in the BridgeWave's GE80 E-Band links," concludes Bowers. "I can't say enough about the outstanding performance and reliability of BridgeWave's GigE product. In the end, our outage was a blessing in disguise."

CASE STUDY



BridgeWave



Case Study

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CUSTOMER:

Coe & Van Look Consultants Inc., a personal services firm based in Phoenix, www.cvlci.com

INDUSTRY:

Engineering Services

CHALLENGES:

- Rapid increases in headcount and file sizes maxed out performance of existing 100Mbps wireless link.
- Proposed upgrade to 800Mbps proved too costly while falling short on bandwidth.
- Subsequent catastrophic 100Mbps link failure required immediate replacement

SOLUTION:

- BridgeWave GE80 80GHz (E-Band) wireless links.

CHANNEL PARTNER:

Renaissance Networks Inc., a Tempe, Ariz.-based provider of cutting-edge wireless solutions (www.rni.net)

BENEFITS:

- Compact bridges were operational in less than three business days of catastrophic failure.
- Seamless connectivity between locations yielded major productivity and efficiency improvements.
- Ample bandwidth for sharing data-intensive files and video applications with no performance impact or network latency.
- Easy to operate bridges have dramatically lowered administrative overhead.

CASE STUDY



BridgeWave

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