

## Wi-Fi Continues Revival of Downtown Springfield, Missouri

The city of Springfield, Missouri has been engaged in an urban renewal process for the last ten years. Participants include the city government, local businesses and the Downtown Springfield Community Improvement District, a nonprofit community organization with a mission to improve the community of Springfield.

When the city decided to install a broadband wireless network to help with the downtown revitalization, it selected a BelAir Networks wireless infrastructure provided by SpringNet.

### The Challenge

Recently, Springfield decided to offer free Wi-Fi in the downtown core to attract new business, local college students, and encourage people to spend more time in the area.

SpringNet, a division of the municipal utility in charge of broadband services, collaborated with the Downtown Springfield Community Improvement District to select and deploy a wireless broadband network. The requirements for the network were very specific: it needed to cover a wide area, it had to be unobtrusive and aesthetically pleasing and, most importantly, it needed to easily accommodate network expansion as the city's needs grew.



In addition, SpringNet wanted a solution that would allow it to extend its existing fiber network into areas that were cost-prohibitive to traditional wired deployments.

## The Solution

After an extensive review process, SpringNet selected a BelAir Networks wide-area wireless infrastructure because it was the only one that delivered high-bandwidth wireless backhaul and Layer 2 VLAN capabilities. The modular design of BelAir's multi-radio wireless switch routers was another deciding factor. SpringNet saw that this design would allow it to leverage its fiber infrastructure by expanding the wireless network throughout the city when required. It would also allow future wireless technologies to be added easily as they became available.



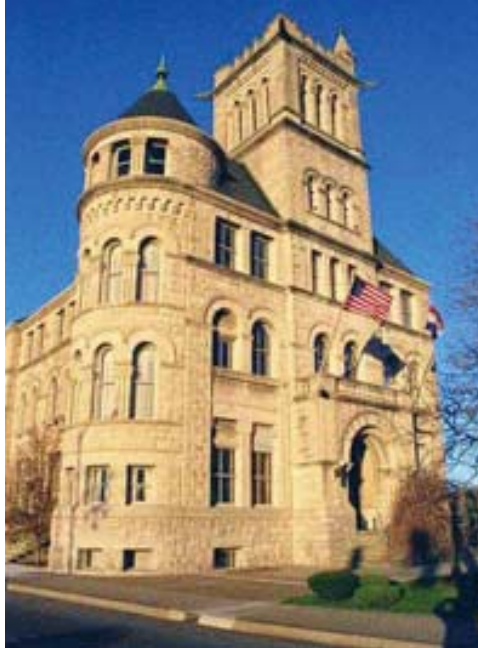
“SpringNet was looking at alternative solutions, but it was important to find one that allowed us to leverage and distribute additional bandwidth in the easiest, most cost-effective way,” said Dan Brewer, Product and Services Manager, SpringNet. “BelAir's multi-radio platforms allow that, and the multiple point-to-point backhaul mesh provides bandwidth that is head and shoulders above the rest.”

Working with BelAir, Dan's team preconfigured a network built with four BelAir200 Multi-service Switch Routers in SpringNet's unique underground lab. This allowed for the access and backhaul portions of the network to be tested before being deployed. As a result, the actual deployment was completed in days with negligible disruption to city life.

The BelAir200 units deployed in Springfield are four-radio platforms built specifically for outdoor deployments. Each BelAir200 includes an access radio module that uses the 2.4 GHz band to support Wi-Fi client access. The access radio is connected to integrated antennas that project Wi-Fi signals over wide open areas and directly into multi-story buildings from the outside. Every BelAir200 can also be configured with up to three separate 5 GHz backhaul radio modules.

These radios and their associated antennas are used to connect multiple BelAir200 systems in a wireless backhaul mesh that takes client traffic to and from the Internet. The resulting system delivers unmatched capacity, security and scalability for large-scale wireless applications.





The complete system is packaged in a small, environmentally-hardened enclosure designed to be mounted directly on light poles in parking lots or on city streets.

### **The Results**

SpringNet launched the new wireless service on March 7, 2005 at a ribbon-cutting ceremony. The new network provides wireless broadband coverage to a broad section of downtown Springfield, including the

South Street, Walnut Street, the Discovery Center, Park Central Square and the Gillioz Theater areas. Users anywhere in this wireless hot zone have free access to the network to check email, or surf the Internet.

"The ability to run up to 16 virtual LANs (VLANs) over the wireless mesh gives us a number of advantages," noted Brewer. "One of the most important is the security and flexibility to expand the network with additional applications beyond wireless voice, video and data, to support secure utility, city and private business use."



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