CUSTOMER SUCCESS STORY

THE CITY OF GREENSBORO KEEPS MOVING WITH A CISCO METROPOLITAN MOBILE NETWORK

EXECUTIVE SUMMARY

CUSTOMER

- City of Greensboro, North Carolina

INDUSTRY

- Municipal Government

BUSINESS CHALLENGE

- Improve the quality of information services to city employees
- Reduce service delivery costs
- Improve service availability and reliability

NETWORK SOLUTION

- Metropolitan Mobile Network from Cisco Systems®, including Cisco Aironet® 1200 Series Wireless LAN solution
- Cisco intelligent switched network, including Catalyst® 6500, 5500, and 4006 series switches

BUSINESS VALUE

- Saved approximately three hours per day, per inspector, while simultaneously accelerating inspection results available to contractors
- Increased the number wireless access points to more than 50 across the city
- Saved more than US$300,000 annually in telecom support and maintenance costs, and was able to reassign two staff positions

Greenboro's citywide Metropolitan Mobile Network from Cisco Systems® has mobilized city workers—helping the city achieve outstanding productivity, cost savings, and service delivery improvements.

The seat of Guilford County, North Carolina, Greensboro has had important roles in the American Revolution, as a major stop along the "Underground Railroad" during the American Civil War, and later, in the Civil Rights movement. With approximately 224,000 residents, today Greensboro is the third-largest city in the state and a thriving center for service, manufacturing, and retail businesses.

BUSINESS CHALLENGE

Like many large cities, Greensboro, North Carolina constantly juggles the demand for improving city services with a growing population and shrinking budgets. Saving time and increasing responsiveness of city workers who were in the field was a major objective. Greensboro addressed this challenge by upgrading the foundation of city service delivery—its network.

City officials and police officers have traditionally relied on wireless communications to exchange information. In addition to two-way radios, many use mobile computers to send and receive data over Cellular Digital Packet Data (CDPD) or private wired radio networks. With an effective transmission rate of 9.6 Kbps, these networks offer adequate bandwidth for text-based applications such as e-mail, instant messaging, and simple database queries, but they are too slow to support more processing-intensive applications. Now many agencies are enhancing and complementing these systems with Cisco wireless LANs based on the international IEEE 802.11 standard, making it possible to store and retrieve data faster.

For example, Greensboro's Inspections Department inspects new and existing construction projects for plumbing, electrical, mechanical, and structural compliance and safety. In the past, inspectors would travel from home to the main downtown office, return phone calls, receive their daily assignments, and then return to the field, only to return late in the day to file reports. Wireless access to daily schedules, reporting, and e-mail would save the inspectors time, the city money, and help prevent additional costs or delays for building contractors. A high-speed wireless data solution would not only accelerate the inspection process, it would open the door to entirely new applications that could be used in other city departments. Law enforcement, water treatment, solid waste, and other mobile city workers could similarly benefit—increasing the city's return on its network investment.

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NETWORK SOLUTION

Greensboro took advantage of its existing Cisco intelligent switched network to deploy a new Cisco Metropolitan Mobile Network with 50 high-speed wireless access points across the city.

According to Darryl Jones, the city's director of Management Information Systems, prior to the deployment of the Cisco Metropolitan mobile network, Greensboro employed a wireless solution that was slower and afforded less visibility into patterns of use. The previous solution didn't permit Jones and his team to monitor network activity at access points, view individuals' usage, connection and transmission speeds, or signal strength. To access any of this information, an IS staff member would physically have to drive to each remote location to gather data.

Today, two Cisco Catalyst 6500 Series switches form the core of a powerful network, and connect more than 80 locations across the city via fiber and Gigabit Ethernet—including fire stations, police stations, libraries, parks and recreation centers, the city's water plant, coliseum, sewage treatment plant, golf courses, parking structures, and office buildings.

At 50 locations throughout Greensboro, a Cisco 3550 or 4006 switch connects each specific site to a Cisco Aironet wireless access point. An antenna on top of the building at each of these sites provides a powerful signal that allows users to log onto the wireless LAN within a 300-foot radius. Cisco Aironet client adapter cards in employees' handheld and laptop computers enable secure access to the high-speed wireless LAN. Cisco Aironet 1200 Series access points deliver up to 54 Mbps of connectivity in both the 2.4 and 5 GHz bands, fully compliant with IEEE 802.11a, 802.11b, and 802.11g standards.

The wireless network also features 128-bit wired equivalent privacy (WEP) encryption, which provides data security equivalent to a wired LAN, as well as the Cisco Wireless Security Suite with Cisco Extensible Authentication Protocol (LEAP), which is used in IEEE 802.1X solutions. LEAP supports a broad range of operating systems and allows existing security procedures, such as user-name and password prompts, to be integrated into a single sign-on and authentication process. And with network operations centralized at the Melvin Municipal Office Building, the entire network can be monitored by a single administrator, if necessary.

"Saving time is saving money and the Cisco Metropolitan Mobile Network not only saves both, it makes life easier for everyone. Cisco enabled us to put our vision in motion."

— Mitchell Johnson, CIO and Deputy City Manager, Greensboro, North Carolina

BUSINESS VALUE

"The mobile network definitely saves us money because it's saving us time," Jones says. "We calculated that it adds between two and three hours per day per inspector, and we have 32 inspectors. That's the equivalent of adding eight additional employees without incurring the overhead costs of eight full time positions. And it saves inspectors unnecessary trips back and forth to the office." Instead, inspectors begin their days by logging into the city's network from their handheld devices, downloading the day's itinerary, and checking e-mail from the field.

Twice daily inspectors visit the nearest access point to upload reports to the building department system. The system is automated and available 24 hours a day, and allows inspectors not only to download information for immediate posting, but to carry every active permit with them at all times. With the wireless system inspectors have access to all the functions they would have if they were at their desks.

And with 50 access points around the city, inspectors can check e-mail, upload information, and receive notifications at any time during the day. The Mobile Inspector application save almost three hours each day in travel and office trips. The wireless system has also assisted in saving valuable office space for use by another department. Inspection reports are now uploaded within a few hours and faxed directly to the respective contractors with the results. Keeping contractors better informed allows them to complete projects faster and more cost-effectively, thereby improving customer satisfaction for city services.

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Another group that benefits from the Cisco Metropolitan Mobile Network is the Greensboro Police Mobile Response Team. Civilian employees—who work for the department but are not sworn police officers—record general police reports on events such as stolen bikes or car break-ins. Like the inspectors, the mobile responders can drive to a nearby access site and upload reports to the police record management system, making them available in near-real time.

NEXT STEPS

Greensboro continues to extend wireless LAN access to almost 70 locations that will virtually cover the city. The Solid Waste Management and Water Resources divisions will soon be added to the wireless network. With wireless devices in their trucks, workers for these departments will be able to upload reports, immediately pick up messages, and respond to residents' needs within minutes or hours—rather than days. "Smart routing" applications will save the city in time and fuel costs by eliminating unnecessary backtracking. The city's soil-erosion experts, fire inspectors, sworn police officers, and park and street maintenance personnel will also be added to the network.

In deploying its wireless network, Greensboro continues its long tradition of mobilizing people for achieving great goals, by dramatically improving service delivery and reducing costs.

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For more information about Cisco solutions and services, visit www.cisco.com.

Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

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