

## Tropos – Aptilo Case Study – St. Cloud, Florida

### Facts

**Industry:** Municipal Government

**Applications:** Public Access, Mobile City Workers (Public Safety, Public Works)

### Solution

- Aptilo Metro Wireless Service Management System™
- Tropos Networks Outdoor MetroMesh 5210 Router
- Tropos Networks 4210 Mobile MetroMesh Router
- Hewlett-Packard – Integration and help desk services

**Objectives:** In phase one, to provide a flexible platform that would allow successful deployment of free, citywide broadband Internet access for residents.

In phase two, expand with new mobile applications for government use, improving productivity. Overall, establish a higher level of city services in order to attract businesses and higher-paying jobs, improving the local economy.

**Approach:** Joint project between Tropos Networks, Aptilo Networks and systems integrator Hewlett-Packard to create "Cyber Spot", a wireless mesh network providing broadband Internet for the city's 17-square-mile footprint.

**Bottom Line:** A single metro wireless network is used to provide high-speed public access as well as improve efficiencies of mobile city workers. Police, firefighters and other city departments are using it to streamline processes, improve service and increase collaboration between citizens and government.

### Statistics

- Schools expect to save \$100,000 annually in Internet access fees
- Nearly 55 percent of St. Cloud households registered in the first 100 days of operation
- Saved families \$750 per year in broadband Internet access bills and City services taxes (for administration, etc.)
- Productivity gains for City employees estimated at \$500,000 in savings per year in payroll cost
- More than 3 000 devices connect to the mesh network every day

The City of St. Cloud, Florida, has become a shining example of municipal Wi-Fi becoming an essential part of the fabric of society. In March 2006, this Orlando suburb went live with a citywide wireless mesh network - the city's "Cyber Spot" service, giving its 30,000 residents free public broadband Internet access. The initiative today covers more than 17 square miles and involves more than 330 Tropos MetroMesh 5210 Wi-Fi radios. It began as a pilot project for a business park and limited-size residential community, but was so successful that the City extended the Wi-Fi not only to the rest of the City residents, but for government use as well.

### PILOT PROJECT LEAVES RESIDENTS WANTING MORE WIRELESS ACCESS

The installation began as a pilot project in 2004 to prove the feasibility of creating a wireless mesh infrastructure for St. Cloud's Stevens Plantation development, an 800-acre residential community and corporate campus.

"The free wireless Internet access was immediately popular with residents," said Howard DeYoung, CIO, City of St. Cloud. It quickly became almost a necessity for them, and they began to depend on the network for all of their Internet access. Many, in fact, soon discontinued their costly high-speed Internet subscriptions.

City officials decided to explore the concept further, and held a series of public workshops to explain the benefits of public Wi-Fi and get community feedback. After overwhelming enthusiasm for free, faster Internet service, the city decided to create a free Wi-Fi mesh network across the entire city, launching the Cyber Spot in 2006.

### MOBILE POLICE, PUBLIC WORKS EFFICIENCIES IMPROVE

The success of St. Cloud's municipal network inspired DeYoung and his team to extend the benefits to city government operations. "The long-range goal is to use the Wi-Fi network to improve service and productivity for all city departments," said DeYoung. "Overall, we're replacing employee desktop computers with laptops to make them more mobile and more effective."

Every emergency is time sensitive, and getting first responders the information they need can help save lives and property. The city was able to leverage the Cyber Spot network to improve all public safety services - police, fire and emergency medical.

New mobile applications were integrated seamlessly into existing technology - for instance, laptops and cell phones. Today, city police utilize streaming digital video from patrol cars to the station, thanks to installed Tropos 4210 Mobile MetroMesh routers designed for in-vehicle applications. Dispatchers see a live video feed from the car as the officer makes a traffic stop.

“St. Cloud Cyber Spot is still the only Metro Wi-Fi network to deliver 100% service availability in our testing.”

Novarum

“Before, from the car, everything was text-based,” said DeYoung. “With wireless mesh, we can provide officers a graphical interface directly to the state criminal justice system, and they’ll be able to see pictures and download information more easily.”

St. Cloud’s building inspectors and code-enforcement officers will also benefit from mobile wireless applications. The city is planning to install a system that will streamline

the delivery of information such as building codes and work orders to laptops in the field. In addition, wireless mesh connectivity will replace cellular data service in many instances, lowering costs for the City and improving bandwidth.

A Geographic Information System (GIS)-based maintenance and work-order system is also planned. This will deliver a rich array of information to mobile computers via the Tropos MetroMesh network. “They will have immediate access to GIS data, CAD drawings and other details in the field if there is a problem,” said DeYoung. “When a service order is generated, they will automatically be notified. Everything comes right down to the laptop in their vehicle.” Previously, city workers had to return to the corporate yard to turn in paper work orders and get new ones - a much more time consuming process.

## PROVEN TECHNOLOGY

Tropos MetroMesh 5210 routers blanket the city with 1.5 Mbps Wi-Fi, providing free service to homes, schools and businesses. Aptilo Network’s Service Management Platform controls access and service flows in the network. The Aptilo platform encompasses subscriber management, service management and monitoring. It also includes a robust reporting tool for ongoing management, so administrators can respond to changes (in user demand, etc.) at a moment’s notice.

Aptilo’s built in policy management tools allows the City to manage access - for instance, making sure that city workers (and not residents) have access specific to their needs. Designed for scalability, Aptilo’s technology proved valuable as St. Cloud’s wireless initiative grew - from the pilot, to all city residents and eventually in the last phase for government communications.

The initial startup cost of \$2.5 million came from an economic development fund related to the city-owned utility service. The annual \$600,000 annual operating expenses are a line item in the city’s annual budget. Hewlett-Packard performed the initial deployment, and provides ongoing integration and support services, including a dedicated 24-hour help line. The City of St. Cloud’s IT department regularly services and upgrades the network’s physical infrastructure. Network operations are operated remotely by Inteq. The city has one IT employee dedicated to the wireless infrastructure.

## SAVINGS FOR THE CITY

The city points to millions of dollars in access fees that previously flowed to national service providers now stays in the local economy. Additionally, local schools were together paying as much as \$100,000 a year for Internet access and are now using this money for other educational purposes instead. Students and teachers both are expected to benefit from universal Wi-Fi access. For example, online homework, coursework tracking and research materials are now available to all students.

## A WINNING SOLUTION

Since its deployment, the City of St. Cloud Cyber Spot has (for the second year in row) been ranked #1 by Novarum in their independent Wireless Broadband review. With a score of 5 out of 5 for “availability” and 4 of 5 for “ease of use,” it’s no wonder St. Cloud residents and city employees give the service their own rave reviews. Novarum is an independent company that provides comprehensive broadband wireless advisory analysis and testing services. For additional information, see their website at [www.novarum.com](http://www.novarum.com)

## LOOKING FORWARD

In the future, DeYoung suggests that St. Cloud’s municipal wireless network may be used to monitor performance and maintenance of city vehicles, or even to track school buses. The service continues to be highly popular among residents and, as the city population continues to grow, the City of St. Cloud is seeing more Cyber Spot users every day.