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Ushering a New Era of TV: A National Call to Action

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Park WiFi

By Clint Pires

St. Louis Park's solar-powered, City-owned WiFi network is up and running. A year has passed since we last reported in the *NATOA Journal* on our pilot WiFi project and the subsequent plans for moving forward in implementing a high-speed Internet service delivered over a citywide wireless network. We selected a public-private partnership business model which leverages the City of St. Louis Park's strong brand image and our partner's experience in delivering retail ISP services. Under this model, the City owns the network and the retail Internet provider offers technical, sales, and marketing resources. The ParkWiFi project, approved by the City Council December 4, 2006, is the nation's first citywide solar powered wireless network. Our partner Unplugged Cities, a Twin Cities based ISP, was awarded a management services contract in December of 2006.

Pilot Network

In April 2006, the City of St. Louis Park initiated a WiFi pilot in four neighborhoods. There were 375 households that signed up for the initial

trial service in four pilot areas. We found that 185 of those households were located in areas where the pilot emulated the true experience of a citywide implementation.

Participation in the pilot program was very high. While there was no guarantee that the service would continue beyond the pilot period, and we charged for service during the pilot, 21 percent of all eligible households participated.

The pilot network performed well and required a few network alterations and upgrades along the way. Some of the obstacles encountered that were overcome included: ensuring there was adequate help desk support, especially for Macintosh computer users; ensuring significant equipment set-up support; and determining the impact of tree foliage on the wireless signal reception and speed.

Moving Forward

In November of 2006, the City Council approved moving beyond the pilot project into implementing a full citywide wireless network. As we looked at moving forward with a citywide wireless network implementation, there were additional concerns and obstacles that needed to be addressed.

One of the first issues encountered was negotiating for access for the equipment to power and to poles not owned by the City. These poles are owned by the power company, Xcel Energy. Xcel Energy wanted a significant sum per month per pole for unmetered electrical access. If we had used Xcel Energy poles, the pole attachment and energy fees would have exceeded \$70,000 per year - a cost too significant to meet our projected budget. Instead, we encouraged bidders to consider other alternatives for powering and placement of the network. After a request for bids (RFB) for equipment was issued, ARINC, a Maryland-based nationwide firm, proposed a cost effective powering solution - solar energy. ARINC was awarded a contract in December, 2006. Now, many might think that Minnesota is a climate where there is not enough sun to possibly consider solar power, but surprisingly the climate does support



A solar-powered wireless access point on a newly installed pole.

solar power and provides an adequate charge for the solar panels.

The project required the installation of about 400 solar powered wireless access points (radio transceivers), most of them on newly installed poles throughout the city. Locations of poles were designed for wireless radios to connect with each other, provide adequate signal strength and coverage, and get adequate exposure to sunlight. Given factors such as the tree canopy, buildings, hills, and curved streets in St. Louis Park, that limited the number of suitable locations.

Resident Feedback

Another major issue that arose during the installation of the solar equipment was an aesthetic one. Some residents were not sure that they were comfortable with the look and height of the solar panels mounted on new poles throughout the community. Any time you are placing new poles in the community, there will be residents who are not happy with the look and placement - it is important to keep this in mind. Installation of the network was halted for several weeks

while meetings were held to discuss the aesthetic issues and options for possible solutions.

The City Council then directed staff to study the following alternatives to the current locations and aesthetics of the poles based on resident feedback and their suggestions. That feedback suggested the general aims were to minimize the pole locations on public rights-of-way that align with mid-lot locations to minimize visual impact. Importantly, the City Council also directed staff to not compromise on performance of the system while finding new locations. Some of the considerations included:

- Pole color
- Pole height
- More use of intersection locations and minimize mid-lot public right-of-way ("picture window") views
- More use of park and other public land
- Co-locating street name signs and traffic control signs on the wireless pole (resulting in no net increase in number of poles at those locations)
- Mounting on public buildings and other public structures
- Locating poles in alleys
- Locating poles along major roadways with existing street furniture
- Greater use of city-owned street light poles
- Placement of poles at property lot lines

The City Council directed staff to incorporate many of these suggestions, especially pole color - it was decided that all poles will be dark brown to blend in better with the environment.

Installation

Implementation of Park WiFi occurred in four major phases in 2007 by quadrant of the city.

- Phase 1 (Northeast) - July
- Phase 2 (Southeast) - August
- Phase 3 (Northwest) - September
- Phase 4 (Southwest) - October

Installation of the network is scheduled to be completed by the end

of October, 2007. The first customers were brought online in late July.

Services Offered to Residents

We offer a range of Internet services to the residential network subscribers, including:

- Dial-Up Buster
 - ▶ 128 Kbps data rate for upload and download
 - ▶ Always-on connection
 - ▶ Works with free Email services such as Google, Yahoo, and MSN
 - ▶ \$14.99 per month, plus the wireless gateway.¹
- Basic Broadband
 - ▶ 1 Mbps data rate for upload and download
 - ▶ Always on connection
 - ▶ 2 email accounts with 50 MB of storage per account
 - ▶ Spam and virus protection of Email included
 - ▶ \$19.99 per month, plus the wireless gateway.
- Deluxe Broadband
 - ▶ 3 Mbps data rate for upload and download
 - ▶ Always on connection
 - ▶ 5 email accounts with 100 MB of storage per account
 - ▶ Spam and virus protection of Email included
 - ▶ \$29.99 per month, plus the wireless gateway.
 - ▶ Available in most areas
- Email Forwarding into ParkWiFi Email account
 - ▶ Ability to have existing Email forwarded into the ParkWiFi Email service for free from most other service providers.
 - ▶ OR, for a one time charge of \$19.95 have all information moved to new ParkWiFi account including Email, folders, calendars, and address books. Notifies family, friends and others that address has

changed and collects Email from old account for up to 30 days.

- Email for Dial-Up Buster or any other service
 - ▶ 2 email addresses with 50 MB of storage per address
 - ▶ \$3.00 per month
- An assigned Static IP address is available for additional \$5.00 per month

Services Offered for Businesses

- Basic Broadband 1 Mbps data rate for upload and download
 - ▶ Always on connection
 - ▶ 2 email accounts with 50 MB of storage per account
 - ▶ Spam and virus protection of Email included
 - ▶ 1 Static IP address included
 - ▶ \$24.99 per month, plus the wireless gateway.²

Deluxe Broadband

- ▶ 3 Mbps data rate for upload and download
- ▶ Always on connection
- ▶ 5 email accounts with 100 MB of storage per account
- ▶ Spam and virus protection of Email included
- ▶ 1 Static IP address included
- ▶ \$34.99 per month, plus the wireless gateway.
- ▶ Available in most areas
- Email Forwarding into ParkWiFi Email
 - OR, for a one time charge of \$19.95 have all information moved to new Park WiFi account including Email, folders, calendars, and address books. Then notify family, friends and others that address has changed and collects Email from old account for up to 30 days.
- Email for Basic Broadband or any other service
 - ▶ 2 email addresses with 50 MB of storage per address

- ▶ \$3.00 per month
- An additional Static IP address is available for \$5.00 per month

Lessons Learned

In spite of any delays and unexpected issues that arose during this project, there are some lessons that we have learned through the process. We offer any other community considering a similar project the following words of encouragement and advice:

- Information to and education of key stakeholders and residents regarding the project and issues that arise is important.
- Even if there are project delays, do not cut down on testing of the system, especially for indoor coverage, to save time.
- Before the system goes live, it must be tested and optimized. This will minimize and prevent additional issues and delays.

For additional information on ParkWiFi, go to:
<http://www.parkwifi.com> or
<http://www.stlouispark.org/parkwifi>.

Clint Pires is the Chief Information Officer (CIO) for the City of St. Louis Park, MN. He previously spent fifteen years as a manager of information technologies and five years as deputy city manager for St. Louis Park. Mr. Pires has spent the last thirty-three years working in both the public sector and academia. He previously held positions with Southeastern Regional Planning and Economic District (Massachusetts); Northern Illinois University; the City of Elgin, Illinois; and was assistant director of the Illinois City Management Association. He is currently an adjunct professor at Hamline University's Graduate School of Management in St. Paul, MN.

¹ Subscribers may need to buy or lease a gateway for the best level of service. Lease option available for as little as \$5 per month or subscribers can purchase it.

² Id.