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By Albert J. Rigoni and Nori A. Van Elzen

Why did Skokie become one of the first Illinois municipalities to jump on the WiFi bandwagon? The answer is that this is a natural fit for our community. Our schools advocate providing access to information anywhere, anytime. It's natural for us to provide WiFi access outside the library, in local parks, and near the community college. The Internet has become the place for people to seek information, pay bills, apply for jobs, and communicate with friends and family. Providing WiFi access in the downtown areas assists with making the downtown a destination area and allows visitors and residents to access the Internet during lunch breaks or after school or work.

The Village of Skokie has a population approaching 65,000. We are a northern suburb of Chicago located on 10.2 square miles. According to the 2000 Census, our population base increased 6.6% from 1990 making the Village the 12th largest municipality in Northeast Illinois and the 18th largest in the state. The town is one of the most culturally rich communities in the state—over 90 languages are spoken in Skokie homes. The Village's Fitch AAA bond rating attests to strong economic health and prudent fiscal management.

In 2003, the Village became the first municipality nationwide to achieve nationally accredited Police, Fire and Public Works Departments, and a Class 1 Fire Department as rated by the Insurance Services Office (ISO). Skokie is proud of the fact that over 250 residents advise the Mayor and Trustees on community matters. It is this distinction that prompted the Governor to designate Skokie an "Illinois Home Town." The Village keeps abreast of all community needs whether these needs are business (economic development) or residential-based. Every three years a citizen survey is conducted by an outside firm to provide the Village with the opportunity to obtain public opinion on Village programs, services, and initiatives.

SkokieLink's Beginning

SkokieLink was initiated by citizens, staff, and businesses. The Skokie Community on downtown Development, Skokie Cable Commission, and the Independent Merchants of downtown Skokie approached the Village Board with the concept of introducing public WiFi access to parts of the downtown area. The group felt that public WiFi would enhance services in the downtown area and complement the downtown redevelopment project. In addition, a planned commuter train station and the new Illinois Science + Technology Park promises to increase visitors to the downtown Area. The Illinois Science + Technology Park is a 23-acre corporate research campus that when complete will consist of two million square feet of high-tech facilities. Recently, Evanston Northwestern consolidated their Data Center operations to the park, bringing over 500 new jobs to the downtown area. Combined with other new biotech uses, the number of employees in the park is about 750.

The concept of a downtown public WiFi system was approved by the Village Board. A consultant was hired to review existing Village assets,
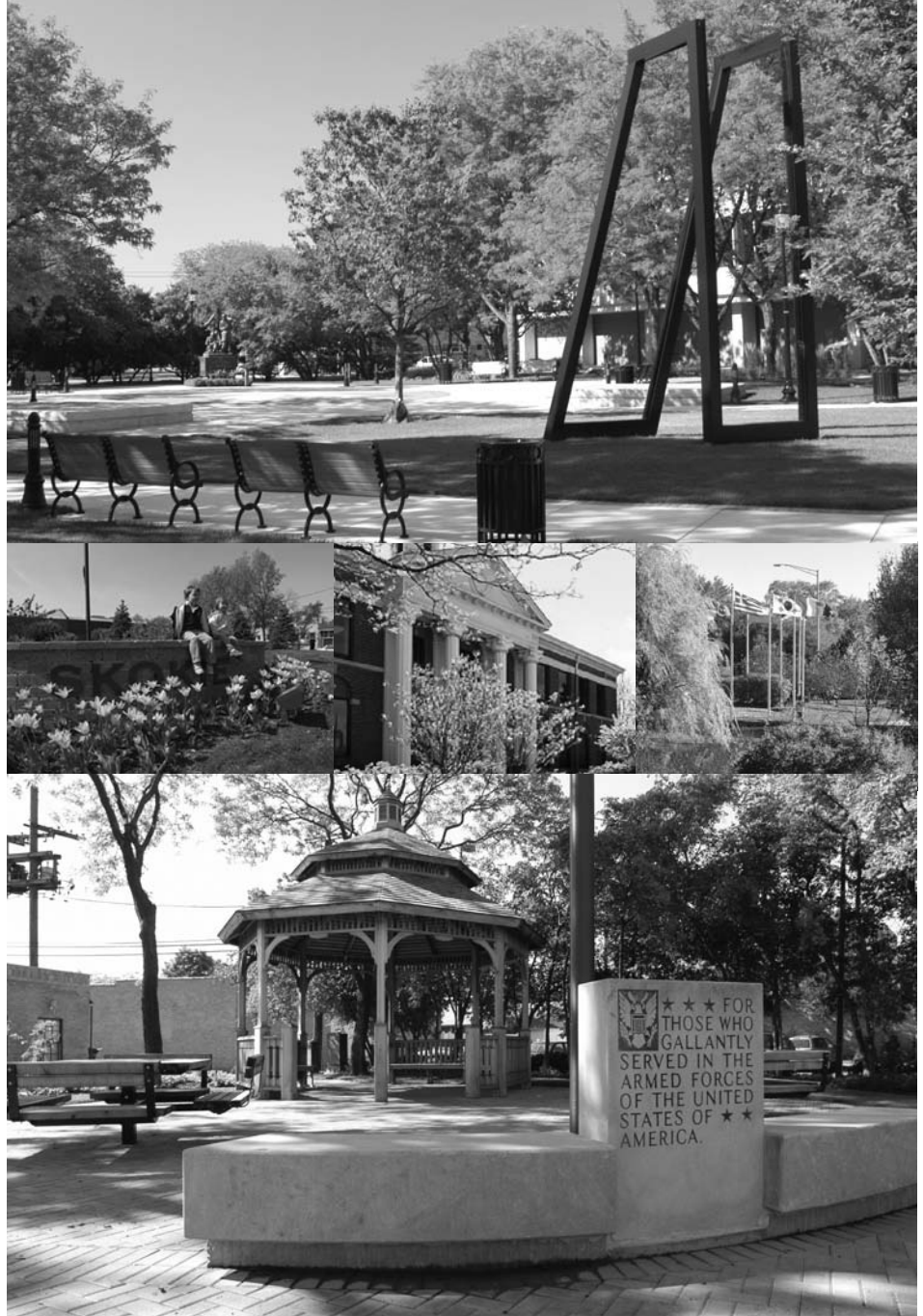
develop a network design, oversee project implementation, and assist the Village in forming a network operation governance structure.

The consultant determined that the system should consist of access points in areas of public gathering, and at the Skokie Public Library. The consultant also determined that future scalability of the project is of critical importance so that the network could grow as the need arises.

Making Cost-Effective Use of Existing Assets

A critical component of the WiFi project was a review of existing

municipal assets. This process enabled us to identify locations for wireless access points – and also presented the opportunity for costs to be substantially reduced through use of existing resources. With all SkokieLink partners at the table, the group was able to identify project contributions—we identified resources ranging from staff expertise to real estate to light posts to internal technical capabilities.

We then set out to use all these resources: Park District staff installed the park access point under direction of our consultant. To bring down the cost of the remaining installation work, the Village supplied a bucket truck, access

to electric power, and detailed information on existing conduit routes. The library IT Department assisted with the configuration of radios and supplied access to the library Blue Socket device for SkokieLink use. Centralization of traffic at the library reduced monthly access charges by 75%. Access points were mounted on the library and park facilities in addition to Village light posts, thus eliminating the need to negotiate a pole attachment agreement.

Designing a Scalable, Workable Network

The greatest project challenge was system design. Contrary to popular perception, WiFi design and implementation is not simple. WiFi design is unique to each community. The design of the system depends on:

- The needs of the community
- The geography of the area
- The availability of electric power, facilities or poles
- The router location
- The future scalability desired

Skokie's downtown area is narrow and has a mix of low and high structures. Line-of-sight connections were not possible and interference with existing roof-mounted antennas was a concern. The Village decided upon a 900 MHz wireless back haul with access points at each location. The backhaul solution involved more planning but eliminated the need for separate connections to the Internet and reduced maintenance and monthly costs. The library offered to host the router and the gateway device to centralize functions.

The project was designed with future scalability in mind. Future access points may be added at the new commuter train station and near the Illinois Science + Technology Park by mounting an access point and adding a backbone link to the library. If Internet traffic demand requires more bandwidth in the future, the centralization of the Internet access point permits the connection to be

upgraded by upgrading the library ISP package.

Selecting a Governance Structure

Skokie's existing I-Net governance structure was used to build the foundation for SkokieLink and made it easier to define day-to-day operations of SkokieLink. The context for determining governance was good—the Village enjoys solid relationships with the School Districts, Skokie Public Library, and Park District. We all work together to serve the needs of the Village residents, organizations, and businesses. Our I-Net serves as one such example of intergovernmental partnerships. Through a Franchise Agreement with a cable provider, all schools, libraries, parks, and municipal facilities are connected over optical fiber. The fiber was installed and is maintained by the cable provider. Internet traffic is aggregated and sent to the Internet using the State of Illinois Internet Access program, Illinois Century Network.

As a result of this intergovernmental approach, we agreed that the Park District would provide day-to-day maintenance of the park-located access point. The Village oversees the access points at its locations and the Skokie Public Library is responsible for the access point outside its facility. The Village pays the monthly ISP fees and, if necessary, provides replacement equipment. The library hosts the wireless router that manages the access points and provides the ISP

connection. Library IT staff maintains this equipment and provides monthly traffic reports showing network utilization. Another collaborator is a local school district, which helped with planning and marketing, even though it is not located in the downtown area.

Finding Funding

SkokieLink uses Tax Increment Financing (TIF) as a funding mechanism—the TIF was formed to support the redevelopment of the downtown area. Costs are very modest as a result of our creative use of existing resources—we pay only $600 per year for Internet access and we have budgeted only $5,000 per year for equipment replacement. Even without access to TIF funds, the project is designed to maximize resources and reduce monthly operation and maintenance charges.

We encourage communities contemplating public WiFi projects to use our project as a model for your own efforts, if appropriate. Please visit www.skokielink.org for more information or, better yet, visit the downtown area as we continue to redevelop it into a vibrant part of the Skokie community. ■

Albert J. Rigoni, was appointed Skokie Village Manager in 1987. He has over 30 years tenure with the Village, and has been involved in overseeing major community improvement projects, new services and initiatives. He has particular expertise in efficient management of resources, building community partnerships and financial management.

Nori Van Elzen worked in the public sector for over 15 years, including over 10 years in Skokie, before opening the Chicago Division of Columbia Telecommunications Corporation (CTC) in December 2006. CTC provides communications engineering consulting services for public sector and non-profit clients throughout the United States.