

fiber
is the future...

Broadband projects give northern Illinois an edge

By Kathy Siebrasse

John Lewis likens the high-speed broadband projects of today to the Rural Electrification Act of 1936.

The Act provided federal loans for the installation of electrical distribution systems to serve rural areas of the U.S. The funding was channeled through cooperative electric power companies, most of which still exist today. These member-owned cooperatives purchased power on a wholesale basis and distributed it using their own network of transmission and distribution lines.

Like the Rural Electrification Act, Lewis said federal grants funding projects to run high-speed fiber throughout northern Illinois today will revolutionize people's lives and the economic vitality of the region. It will increase Internet speeds up to 1,000 times over what is available now, and for most, at a lower price than current service.

Lewis, Senior Research Scholar in NIU's Health and Information

Technologies is chairman of the board of the Illinois Fiber Resources Group (iFiber). It was established in September, 2010, after Northern Illinois University received a \$68.5 million NTIA Broadband Technology Opportunity Program grant.

The iFiber project will construct an almost 900-mile network across nine counties in northern Illinois,

including Boone, Carroll, Jo Daviess, LaSalle, Lee, Ogle, Stephenson, Whiteside and Winnebago.

Work began in January, 2011. NIU is administering the grant and other project partners are LaSalle County, North Central Illinois Council of Governments, the City of Rockford, Boone County and Blackhawk Hills Resource Conservation and Development.

In DeKalb County, a consortium comprised of DeKalb County Government, NIU and DeKalb Fiber Optic has been working together under the banner of the DeKalb Advancement of Technology Authority (DATA) since February, 2010. The consortium received



Workers plow cable along IL. Route 72

nearly \$12 million in federal grant money, as well as state and local money for the project. The total investment is about \$15 million.

DATA and iFiber complement the Illinois Century Network (ICN), managed by the State of Illinois Central Management Services. ICN is a telecommunications network providing high-speed access to data, video, and audio communications to more than 8,000 schools, libraries, colleges, universities, museums,

local government, state agencies, hospitals, and health care centers.

Both the iFiber and DATA projects will greatly impact schools and other education programs. Slow Internet connections currently prohibit creative teachers from accessing resources.

Teachers are sometimes told to stop using Internet video or educational services because doing so creates a bottleneck that prohibits anyone else from using the Internet.



The new fiber optic network will allow schools, libraries, public safety organizations, municipalities and others to obtain speeds up to 1,000 times faster with the ability to upgrade to even faster speeds as needed.

It also will allow schools and other users to work together over an ultra-high speed network and share technical resources, video and educational services, and reducing costs.

Among those likely to benefit from both iFiber and DATA are:

• **Municipalities** – The new lines will provide a backbone infrastructure for municipalities to tap into a county-wide E-911 service, and to share resources that will allow for disaster planning and mitigation.

• **Hospitals, clinics, physicians** – The new fiber optic lines will create affordable opportunities for health care providers to tap into broadband services and begin benefitting from the use of electronic medical records or even to consult in real time with specialists hundreds or thousands of miles away.

• **Libraries** – Demand for Internet connectivity for libraries has risen exponentially over the past few years with more people using laptops and workstations while visiting. Libraries also are seeing an increase in the distribution and sharing of digital media putting more demands on slow Internet connections. Many libraries in DeKalb County have seen connectivity slow to a crawl. The new fiber optic network will allow libraries to upgrade to speeds that eliminate such delays.

• **Farmers** – Special provisions have been made that will allow farmers to connect to the lines, enabling them to transfer data from the farm to suppliers for analytical processing to help them obtain sufficient seed, fertilizer and other inputs to ensure optimal yields.

• **Individual businesses** – Because the system will be built in partnership with private firms, fiber will be available for use by private businesses. This offers new opportunities for business to obtain broadband services at ultra high speeds at rates near or below what they are currently paying. This will help the region attract large businesses that increasingly consider high-speed broadband an essential utility.

• **Private citizens** – The new fiber optic lines extend into communities where broadband service is unavailable. Service providers will work with iFiber and DATA to make service available to private homes.

About DATA

When announcing the DATA project during a press conference in 2010, the project's organizers said the average "smart phone" provides better, faster Internet service than is available at many schools in DeKalb County.

Herb Kuryliw, network and technical architect for NIU, said the DATA project has made great progress since its kick-off last year. It is laying 130 miles of fiber optic cable throughout DeKalb County.

"We plan to be complete by March of 2012. We'll be ready to light up many areas in the

project soon," said Kuryliw.

DeKalb is the center-point for both the iFiber and DATA projects, he added, with NIU serving as a Point of Presence (POP) in the ICN backbone. For more details about ICN throughout the state, visit www.illinois.net.

"This changes the whole concept of what broadband means for this region," said Dan Halverson, vice president of DeKalb Fiber Optic, explaining that the new fiber brought by the DATA project will be capable of speeds 100-1,000 times faster than available in the county now.

"That will make DeKalb County much more competitive in the global economy, it will raise our profile and it will increase our tax base."

NIU President John Peters shared the excitement over the educational and economic ramifications of the project.

"When we began building our own fiber optic network, NIUNet, just six years ago, something

like this seemed a distant dream. Since then, our Information Technology Services group has built a name for itself finding creative, collaborative solutions that make projects like this possible," he said.

"This collaboration is a proud moment for the university. I couldn't be more delighted to see those efforts paying dividends in our own backyard. This is an example of NIU pointing to the future and thanks in part to this project, it is a very bright future indeed."

Under the DATA project, NIU is providing infrastructure design, network design and sustainability for the network; DeKalb Fiber Optics LLC will maintain the fiber cable and provide services over the fiber infrastructure; those activities will be carried out under an agreement with DeKalb County, which will administer the project.

DATA will bring broadband to: 42 K-12 schools (most DeKalb and Sycamore schools are already connected); 12 municipalities;





More than 100 people celebrated the Groundbreaking Event of iFiber in August.

20 county sites (including E-911 services); 2 hospitals; 5 clinics; 68 library locations; Kishwaukee College; NIU; more than 3,600 businesses (potentially); and 82,500 county residents (potentially).

The majority of the money (an \$11.8 million grant) comes from the economic stimulus bill passed in 2009 (the American Recovery and Reinvestment Act). The grant is administered by the National Telecommunications and Information Administration, which is a branch of the U.S. Department of Commerce.

That agency's Broadband Technology Opportunities Program is spending about \$4.7 billion to deploy broadband infrastructure into un-served or underserved areas of the country.

Another \$1.3 million is being provided by the State of Illinois, with DeKalb Fiber Optic also contributing \$1.3 million in cash, services and materials. Other contributors include: NIU, \$150,000; Kishwaukee Community Hospital, \$100,000; and DeKalb County, \$75,000.

For more information about DATA, visit www.dekalbfiberoptic.com/projects.

About iFiber

"A robust, comprehensive broadband network is very important to help the region transition into new economies. If we want to promote community and economic development we need to ensure that community anchor institutions, business and residents have access to high speed Internet. It will become the primary method of communication and learning in the future," said Nora Fesco-Ballerine, Executive Director of the North Central Illinois Council of Governments, one of iFiber's partner organizations.

In September 2010, NIU, as the fiscal agent, received a \$68.5 million NTIA Broadband Technology Opportunity Program grant to deploy an almost 900-mile network across the northwest Illinois region.

The project will bring 10 Mbps to 10 Gbps speeds to approximately

533 community anchor institutions (CAIs), significantly improving their ability to leverage broadband technology for improvements in rural education, economic opportunities and public safety.

During the grant application process the team planned for the formation of a not-for-profit (NFP) organization to be established for the sole purpose of constructing the network and overseeing the 48 public strands of fiber that will be installed. iFiber was established as that NFP in January, 2011.

"This \$69 million federal broadband construction grant connecting many of the communities in nine counties will level the Internet playing field in our area. The nearly 900 miles of buried fiber optic cable in rural northwest Illinois will greatly enhance Internet speed and capacity for over 500 community anchor institutions and Internet providers with residential and business customer," said Dr William Tonne, Chairman of Blackhawk

Hills RC&D, who also serves as treasurer of the iFiber board.

The federal, state, and matching funds that comprise the \$68.5 million in total BTOP project funding are dedicated to capital costs such as construction and build of the infrastructure. This includes engineering design, permitting, installation of the conduit, blowing of the fiber, site restorations, and last mile building entrances and linkages to the 533 public and not-for-profit organizations to the dedicated public sector fiber network.

CAIs will pay monthly ISP fees which include maintenance for the fiber network being built with BTOP grant funds and traditional connections to the Internet.

The project also plans to provide infrastructure for a core upgrade to the Illinois Century Network, the state's educational network, and interconnect with NIUNet and Northern Illinois Technology Triangle, enabling 10 Gbps service for manufacturing and technology parks across the region and promoting job growth, entrepreneurship, and economic development.

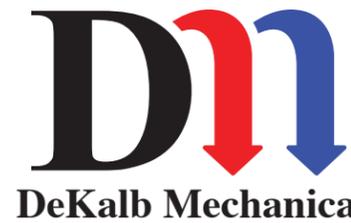
For more details, visit ifiber.org.

Key iFiber Project Facts include:

- Constructing 711 miles of new fiber and incorporating 233 miles of existing fiber to facilitate more affordable and accessible broadband service for up to 280,000 households and 16,000 businesses by enabling local Internet service providers to utilize the project's open network. At least 10 local Internet providers have plans to interconnect with the network to enhance broadband services for households and businesses.

- Providing backbone infrastructure to a region of northwestern Illinois with significant economic vulnerability, including Boone, Carroll, Jo Daviess, LaSalle, Lee, Ogle, Stephenson, Whiteside and Winnebago counties.

- 533 Anchor Institutions Connected: 190 schools (K-12); 60 medical and healthcare providers; 80 public safety entities; 40 libraries; 8 community colleges; 100 government facilities.
- Completed by August, 2013. ■



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