

Mohawk Tribe Brings Fiber to the Home

A community affected by economic decline now has new infrastructure – and new hope for the future.

By Jeff Beekhoo / *Saint Regis Mohawk Tribe*

In 2009, the U.S. government acknowledged that access to high-quality broadband was vital for rural communities. This led to the development of the broadband program in the American Reinvestment and Recovery Act, which provided the Rural Utilities Service (RUS) with more than \$2 billion to expand service to rural communities. One recipient was the Saint Regis Mohawk Tribe of Akwesasne, N.Y., which is using Recovery Act funding to build a fiber-to-the-home network with the hope of bringing businesses to the community. This article, the first of a series, will examine the effects of the new network on economic development of the tribe.

The Saint Regis Mohawk Tribe (SRMT) territory is in New York State. Part of the tribe's ancestral territory straddles the Canadian border, and parts of the community are located in the provinces of Ontario and Quebec. The territory adjoins a major border crossing and the St. Lawrence Seaway, a major shipping highway. When the economy was booming, a General Motors plant and an Alcoa Primary Metals facility were located close enough to the territory to provide employment to many Mohawks. Neighboring communities, such as Massena, were dependent on these plants for their economic development. At the present time, the only plants still operating are Alcoa facilities.

In 2010, the Tribal Council was approached about the broadband project. Because it saw

the investment as a way to create new jobs and ultimately bring new businesses to the territory, the council decided to take the necessary steps to clear the project. Native preference plans were put into place to ensure that outside contractors hired local help to perform the required duties. Currently, tribe members are being trained to perform fiber splicing, install optical network terminals (ONTs), use computer-aided design (CAD) software, perform site surveys and do a multitude of other jobs required for a broadband project. The Tribal Council's goal is to reinvest the profits from the broadband initiative back into the community. As part of the award process, specialty contractors are required to hire and train locals. Tribal Chief Ron La France stated, "We are investing in our community and our children. I want this network owned and operated by Mohawks in the near future."

The Saint Regis Mohawk Network will begin activating test customers in June 2013 and plans to start customer installations in August 2013. Since February 2012, when the project was given the green light and the community was made aware of it, more than 1,100 households have signed up for service. In a community of only 1,600 households, this indicates a huge interest in the program.

OUTSIDE-PLANT CHALLENGES

After resolving some hurdles with pole permits with the help of the Tribal Council, the tribal



FTTH comes to the Mohawk Tribe of Akwesasne as sovereign land gets connected.

network placed 68 miles of fiber in five months. Construction started in July 2012 and was completed by December 2012. The dedication and effort of general contractor Rocking O Construction from Caddo, Okla., were admirable. The company understood that construction would have to halt once winter came to the North Country and that any delays would affect the commitments made to RUS and possibly even jeopardize the project.

Rocking O hired a telecommunications contractor (Morgan Construction & Development Services, based in Tarpon Springs, Fla.) as a subcontractor to finalize the outside plant and fiber optic splicing. The 12,000 splices and the 12 GPON and active Ethernet cabinets had to be spliced, tested and certified during the winter months to keep up with the schedule and aim for summer activation. In the North Country, project managers

must consider weather conditions in builds of this nature to avoid project delays, failures and loss of funding. All splicing, testing and certification was completed by May 2013.

THE CENTRAL OFFICE

The central office (CO) is critical to any FTTH build. Morgan Construction & Development Services was awarded the contract to build out the CO based on its knowledge of the project and its CO experience. Thermo Bond was picked as the vendor for the building that houses all the active and passive gear to make this open-access network function.

Using equipment from the major players in the FTTH industry, the SRMT network will be future proofed and can provide services with quality comparable to those in municipalities such as Chattanooga, Tenn. The Calix E720 OLT will provide GPON services to all residential customers; the

company was selected for its proven track record, CMS integration, upgrade abilities, and market share.

Allied Telesis equipment will provide all active Ethernet components. The Allied chassis has a 20 Gbps port to service future high-capacity requirements of the casino, possible data centers and other new businesses that may invest in the community. There are also 124 100 Mbps ports for active Ethernet connections to all the government facilities and small businesses on the territory.

AFL is the vendor of choice to provide all the passive network gear in the CO, based on its record of deployments all over the world. In addition, AFL assisted with the design of the central office and has provided great support whenever called upon. The last piece of the puzzle is Cisco, which will provide all the routers for the network.

VENDORS AND CONTRACTORS FOR THE SAINT REGIS MOHAWK NETWORK

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| AFL | www.afglobal.com |
| Allied Telesis | www.alliedtelesis.com |
| Calix | www.calix.com |
| Cisco..... | www.cisco.com |
| Morgan Construction & Development Services..... | www.morganconstructionusa.com |
| Rocking O Construction | www.rockingoconstructionllc.com |
| Thermo Bond Buildings | www.thermobond.com |

Akwesasne currently uses a combination of T1 circuits and Canopy Wireless to serve government buildings and schools. The new fiber network will incorporate all government buildings on the broadband network, reducing the number of T1 circuits and the overall monthly cost to the tribe. The network is also dedicating fiber to all schools in the territory to accommodate present and future requirements.

SPECIAL PROJECTS

Telemedicine: The telemedicine circuit was provisioned and turned up in April 2013. The tribe's Health Services Program is now connected to more than 50 health care providers, using connections made possible by grants

DESIGN CONSIDERATIONS

The design of the central office took into account the current needs of the tribe, the existing services provided and the ability to provide for such future needs as distance learning, telemedicine, local community channels, power grids, gas grids, spare fibers to parks for Wi-Fi and intelligent traffic control.

and FTTH. The new Adirondack Champlain Telemedicine Information Network, or ACTION, will allow participating health care providers to readily access and share information. This will reduce costs for the transfer of medical information through the use of interactive audiovisual media for consulting, conducting examinations and performing remote medical procedures. Members will also be able to create diverse telemedicine applications that will improve the long-term sustainability of the network.

Telemedicine applications of the new enhanced service include telepsychiatry, telestroke, telecardiology, and teledermatology, all of which require secure connections at high bandwidth. All ACTION members are connected to one another via full-duplex 100 Mbps or 1 Gbps fiber/Ethernet connections that logically emulate a multicounty campus area network. Additionally, all members are able to access a 500 Mbps public Internet connection. These new connections will allow ACTION members to eliminate or reduce existing Internet connections, which can now be used as an emergency backup service. The primary facilities on the network are Alice-Hyde Medical Center, Adirondack Medical Center, CVPH Medical Center, Elizabethtown Community Hospital, Fletcher Allen Health Care, Glens Falls Hospital, Inter-Lakes Health, Massena Memorial Hospital and the Saint Regis Mohawk Tribe Health Services.

Community channels: Three local community channels will be broadcast in the territory. The first channel will be for businesses to advertise in the hotels and casino. The second will enable residents to view special and live events, community news and council meetings, among other things.

The third channel will be a Mohawk-language channel that will help maintain the education of the younger generation. The Tribal Council would like to keep traditions and language in place so that they are not lost over time, and this channel will broadcast old programs and shows with voice-overs in Mohawk. The Mohawk cultural specialist at Salmon River

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Fiber dedicated to health care providers will support telemedicine applications.



Under a native preference program, local residents are being trained to splice fiber.

Central High School can help students in the territory learn to edit and provide content so that the tribe can ultimately create its own broadcast station with existing native resources.

Digital literacy: The Saint Regis Mohawk Tribe received a Broadband Technology Opportunities Program (BTOP) grant in 2011. The grant enables the tribe to increase public computer access, promote digital literacy and provide educational opportunities to youth, seniors, persons with disabilities and the unemployed. SRMT is deploying more than 60 new computers in five public computer center locations in the Saint Regis Mohawk Tribal territory and providing broadband access through the Boys & Girls Club, library, senior center, economic resource center and a training center.

Each public computer center location was selected to serve specific

target populations. The project makes use of online training resources, instructor-led courses, workshops and a partnership with a local university. Having 21st century skills to go along with their fiber network infrastructure and fiber-to-the-home access is important for the Saint Regis Mohawks.

Because of the broadband stimulus, Mohawks finally see a light at the end of the tunnel where the market turns around and starts an upward trend. What might have seemed impossible is now possible, thanks to the foresight of the RUS. It is an honor and privilege to work with the Saint Regis Mohawk

Tribe. Being involved with a project of this caliber from preconstruction to activation has allowed me to experience firsthand the power that broadband has to give to a community and its positive impact on economic development. ❖

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