

# Remote Telecom

Learning, working, and living better at the edge of the Last Frontier

By Tracy Barbour

Alaska is a vast state with remote communities known for their pristine beauty, stunning vistas—and limited access to telecommunications services. However, providers like GCI, Quintillion, and Arctic Slope Telephone Association Cooperative (ASTAC) offer an assortment of solutions that can be helpful to Alaskans who find themselves working and traveling in remote parts of the state. In Alaska's small, isolated communities, telecom services may be scant or even a luxury. Some villages rely on landline telephones or two-way radios to communicate. Other communities have better access to connectivity, which allows people to make wireless calls, send text messages, and access high-speed Internet. These services are not only critical for the individuals who live there but for people who may be working, visiting, or traveling in the area.

## Working to Increase Access

Telecommunications providers are constantly working to expand access to mobile, Internet, and other services in far-flung locations. GCI is a prime example. As the largest communications provider in Alaska, GCI delivers data, wireless, video, voice, and managed services to individuals and businesses throughout the state and nationwide. "We cover 98 percent of Alaska, and we are continually investing and expanding the network with new cell sites and improving technology," says Greg Klimek, GCI's vice president of wireless marketing. "We have launched LTE in many markets to make the Internet more accessible."

Crews work to build GCI's TERRA network, which traverses some of the state's most rugged terrain, to deliver services to businesses, organizations, and individuals in rural Alaska.

GCI

GCI covers 82 percent of Alaska with LTE. The company has also upgraded many of its coverage areas with 3G and satellite. As a result, Alaskans statewide can access home-

telephone service in many areas, along with Internet, video, and wireless—which are high on people's wish list in smaller communities. "We're providing fast communications and vast coverage," Klimek says.

Klimek says GCI is striving to improve services everywhere. Customers crave connectivity, and what they're seeking in mobile are voice, text, and data services. And they want the best speed they can get, which is something GCI focuses on delivering in rural markets. The company has made upgrades in Utqiagvik, Dillingham, and Bethel, and it will also be upgrading Dutch Harbor to LTE over satellite. This will enable customers in these markets to do more than just make a voice call and text. They'll have better speed and a better mobile experience so they can



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—Pam Lloyd

Vice President of Government,  
Healthcare, and Education, GCI

use an iPhone or Android cell phone, among other things.

GCI provides service to more than 240 communities across Alaska and has approximately forty retail stores statewide, according to Jenifer Nelson, senior manager of community relations. So if rural travelers find themselves facing a communication problem in Nome, for instance, they can visit a retail store for help. Alaska Commercial Company resellers and wholesalers also offer GCI products throughout rural Alaska. “We also have Fast Phone, which is a prepaid wireless option that’s popular with seasonal workers and travelers,” Nelson says.

As part of its ongoing investment in rural Alaska, GCI recently made enhancements at Shungnak, an Iñupiat village with about 270 residents. The company “turned on” LTE over satellite in the northwest Alaska community in December. “They are outside our terrestrial footprint, so this new technology allows them to use the latest smartphone technology and have better access to services,” Nelson says.

Having LTE over satellite allows people in small communities to download streaming services, use YouTube, and do many other things that customers can do in places like Anchorage or Seattle. LTE over satellite also has even broader implications, particularly in the areas of education and healthcare. The ability to have mobility is extremely important, and many students are using broadband for their homes, according to Pam Lloyd, PhD, GCI’s vice president of government, healthcare, and education. Broadband also facilitates telemedicine, which is a vital service in rural areas with restricted access to medical specialists.

In addition to network upgrades, GCI has enhanced its Internet service by offering a No Worries Plan for rural Alaska hub communities. The company introduced No Worries Internet plans in Bethel, Nome, and Kotzebue in July. Essentially, the plans double data and decrease the monthly price for the majority of GCI’s customers in these communities. They also eliminate burdensome overage charges. With the No Worries plans, customers who reach their monthly data limit have the option to continue their use at a reduced speed for the rest of the month or purchase additional data.

GCI was able to increase data usage for its

rural customers because of recent upgrades to its TERRA (Terrestrial for Every Rural Region in Alaska) network. The network provides high-speed broadband service to more than seventy communities in rural Alaska. Over the past eight years GCI has invested more than \$250 million in TERRA. As new technology becomes available, it will continue to upgrade the network to provide even greater speeds and data packages for customers.

TERRA is a hybrid terrestrial fiber-optic and microwave network that removes the limitations of satellite and provides symmetrical broadband service to Alaska’s remote and rural regions. With a direct land-based connection to Anchorage and the Internet, the TERRA network delivers critical bandwidth to numerous public, nonprofit, and private entities such as regional health corporations, school districts, native organizations, and residents.

In fact, much of the reason why GCI has been able to build out many of the rural areas is because of “anchor tenants” like school districts and healthcare facilities, Lloyd says. “They are the largest employers in rural Alaska, and they’re why and how we bring broadband into the community,” she explains. “But we don’t stop there. We bring Internet into the home and cell service into the community.”

Klimek says GCI has worked hard to build out its expansive TERRA network, the perimeter of which is almost 3,300 miles—slightly larger than the Texas border. The terrain in rural Alaska can be rugged and unforgiving, which make the logistics of the build-out challenging at times. For instance, in southwest Alaska near Naknek, a diver had to plunge through frigid ice to lay fiber under a river bed.

GCI’s completion of the TERRA network allows individuals who depend on its services for work and other uses to have greater reliability. “It was a tremendous feat, but it does provide great service to our customer,” Klimek says. “If we have a problem along the TERRA network, we have redundancy so it doesn’t go down.”

Quintillion is also facilitating broadband and mobile solutions with its fiber optic cable system. The system, which delivers gigabit and higher bandwidth services on a 1,400 mile subsea and terrestrial fiber optic network, went live in December 2017. It includes a subsea trunk line from Prudhoe Bay to Nome



with branching lines to five communities: Wainwright, Point Hope, Nome, Kotzebue, and Utqiagvik—the northernmost city in the United States.

Quintillion is a wholesale bandwidth services provider, and now these communities can take advantage of its subsea fiber optic cable system to capitalize on twenty-first century communications in the Alaska Arctic. Consequently, telecom providers can use Quintillion’s system to gain access to high-speed broadband capacity at a far lower cost and improved quality of service than existing satellite and microwave options, according to a February press release.

The perimeter of GCI's TERRA network is nearly 3,300 miles—slightly larger than the Texas border.

GCI



The advent of faster Internet to Quintillion's markets will enhance health and education services, help stimulate economic development, empowers local businesses, and allow consumers to use video and other high-speed applications that many potential Quintillion end-user customers previously did not have access to or could not afford. Ultimately, service options in these remote communities will depend on what different retail providers choose to offer their customers.

ASTAC also focuses on delivering telecommunications services to distant areas of the state. The full-service, member-owned utility has been providing telecom services

to North Slope residents since 1981. ASTAC provides local and long distance, 4G wireless, broadband Ethernet and Internet, and data services to Utqiagvik, Wainwright, Atkasuk, Anaktuvuk Pass, Nuiqsut, Kaktovik, Point Hope, and Point Lay. It also delivers telecommunications solutions to the production complex at Deadhorse-Prudhoe Bay.

"ASTAC's designated service area is a roadless, remote Arctic area between Point Hope and Kaktovik—more than 90,000 square miles, which is larger than forty of the fifty states," says Thomas Lochner, ASTAC's director of business development. "Our 4G wireless service reaches as far as seven miles out to sea."

Now Alaskans who are traveling in ASTAC's coverage area will have greater access to wireless and Internet services. Earlier this year, ASTAC completed the installation of fiber optic cabling in the villages of Nuiqsut, Wainwright, and Point Hope. And in 2006, ASTAC technicians installed fiber to all of the buildings in these communities. The new distribution fiber provides an end-to-end fiber optic broadband connection when combined with Quintillion's subsea fiber network. Currently, people in Nuiqsut, Wainwright, and Point Hope have the highest bandwidth and lowest latency services that they have ever experienced.

# ASTAC serving area



## ASTAC's Service Area

ASTAC's service area - Point Hope to Kaktovik  
**90,000+ square miles**, which is larger than  
40 of the 50 states.



ASTAC

ASTAC says it is excited to offer high quality Internet service at faster speeds and with lower latency. Now all of its wireline and 4G wireless customers in Wainwright, Point Hope, Nuiqsut, and Utqiagvik can enjoy the benefits of the fiber-fed networks. ASTAC is now migrating customers in all fiber-fed markets to its faster Home Internet10 service. Lochner says Quintillion's fiber only lands at half of the villages ASTAC serves. "ASTAC has a goal within the next five years to link all of the villages together on terrestrial bandwidth," he says.

Since 2012, ASTAC has invested more than \$33 million in its North Slope network.

### Coverage for the Dalton Highway

Telecom coverage is also being enhanced along the James W. Dalton Highway, often referred to as the Dalton Highway or Haul Road. The Dalton Highway used to be considered one of the most isolated stretches of road in the United States. The 414-mile road runs from the Elliott Highway north of Fairbanks to the "community" of Deadhorse, which serves the Prudhoe Bay Oil Fields.

In July, GCI completed a new wireless tower near Coldfoot and brought the first-ever wireless service to the Dalton Highway. Previously, there had been no cell phone service along the road, and travelers had to communicate by Citizens Band radio or satellite phone. As many as 250 trucks use the Dalton

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Director of Business Development  
ASTAC

Highway each day, and GCI's wireless coverage is a much-needed solution for these and other travelers who depend on cell phones.

The new tower provides wireless coverage along 15 miles of the Dalton Highway. "There was a big gap before," Klimek says. "This provides a good amount of coverage."

The tower—located near mile 175—cost about \$500,000 and took a year to permit, construct, and integrate into the GCI wireless network. GCI is planning other wireless towers along the road as part of a \$30 million project to expand and upgrade wireless communication throughout the state.

ASTAC is also working to address the dearth of telecommunications coverage along the Dalton Highway. The utility, along

with a number of partners, is planning to build more cell towers along the highway. The first tower will be placed at the Franklin Bluffs area and will meet the coverage ASTAC already provides for Deadhorse and slightly southward. While ASTAC's new towers will not cover the entire highway, they will provide a considerable amount of coverage that people did not have before.

The utility is also working on a solution to address places where Alaskans are completely off the telecom grid and have to rely on satellite phones. It offers Beartooth, an off-the-grid network for smartphones. Beartooth allows individuals who are not connected to a wireless or satellite network to use cell phones to keep in contact off grid up to a

ASTAC

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ten-mile range. They can text up to ten miles and push to talk up to five miles away using Beartooth and a custom phone app.

#### Impact of Services in Remote Areas

Upgraded telecom solutions are making it more feasible to work, live, and play in some of the remote regions of Alaska. ASTAC provides the largest cell coverage footprint on the North Slope, from Point Thomson on the east to west of Alpine, south to Franklin Bluffs, and up to seven miles out in the Beaufort Sea going north. ASTAC's cell service is helping whalers stay in contact while at sea within the seven-mile coverage area, which enhances their ability to work more safely.

ASTAC's Beartooth allows search and res-

cue parties to use their cell phones to connect even when they're off the telecommunications grid, enhancing their ability to perform life-saving work. Beartooth is also providing an extra level of safety and communications for hunting parties.

Oil and gas exploration both west and south of Nuiqsut (on the Colville River) is enhanced due to cellular coverage through an ASTAC partnership.

GCI is also seeing the positive impact of telecommunications in rural Alaska. For example, a search and rescue team was able to rescue a snow machiner who was lost in a blizzard because he was able to send them his location from his iPhone and a business customer was able to use his smartphone to approve time cards for his employees while he was fishing on the river in Bethel.

Enhanced telecom services are also having a positive effect on shopping in the Bush. In fact, shortly after some of the communities outside Bethel received enhanced services, one freight carrier became overloaded with Amazon boxes: with faster data speeds, residents were able to shop online instead of having to purchase all their items locally.

GCI is also providing a telecom solution for teachers who move to Alaska's remote areas from the Lower 48. Many of them find that their service from national carriers doesn't work in some parts of the state so they switch to GCI to remedy the situation.

Telecommunications technology is also helping to save lives. GCI's support of tele-

medicine and telehealth is making it possible for Alaskans in remote communities to get in contact with specialists instead of having to travel thousands of miles into Anchorage. This is especially crucial given the fact that faster access to healthcare can save lives. "In the healthcare world, time is life," Nelson says.

Telecom services are also having a professional impact on the lives young people. Thanks to high-speed Internet service, Byron Nicholai of Toksook Bay has been able to share his singing, dancing, and other talents with the world. His "I Sing, You Dance" videos have made him a YouTube sensation and led him to perform at the White House for President Barrack Obama and other venues worldwide.

Social media was instrumental in the success of Nick Hanson from the 750-person village of Unalakleet. Hanson was featured on America Ninja Warrior and now has a broad platform to promote the benefits of exercise to youth everywhere. "These are the stories that make a difference to people who live in rural Alaska," says Lloyd. "We provide service to the world, no matter the zip code." ✨

*Tracy Barbour has been an Alaska Business contributor since 1999. As a former Alaskan, she is uniquely positioned to offer in-depth insight and enjoys writing about a variety of topics.*



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