



Committed to the future of rural communities.

USDA Rural Development: Telecommunications Program;

Broadband Initiatives Program (BIP) and Telecommunications Infrastructure Loan Program —Alaska

United Utilities, Inc.

Need:

Communities in Bristol Bay and the Yukon-Kuskokwim Delta (Y-K Delta) in Southwestern Alaska were without access to broadband services. Due to the vast distances between them and the icy and difficult-to-navigate landscape, the people in these communities had been unable to connect to the outside world via broadband technology until Rural Development stepped in to help.

How Rural Development Helped:

United Utilities, Inc. is a long time borrower and grantee with Rural Development. Through the Telecommunications Infrastructure Loan Program, they have received a little over \$24 million since 1981, the most recent being a 2007 loan for \$8,751,000. In 2010 they received a \$44 million loan and a \$44 million grant through the Broadband Initiatives Program (BIP) in an effort to connect 65 communities in southwestern Alaska spanning 75,000 square miles—roughly the size of Oregon. This particular project makes use of a combination of undersea fiber, terrestrial fiber, and microwave links to provide connectivity. The network being constructed has been dubbed TERRA-SW and would bring terrestrial broadband to these communities for the first time ever.

Results:

Construction of the TERRA-SW project was completed in early 2012, but not without difficulties. The original plan was to lay 43 miles of fiber between Iguigig and Levelock during the winter, when the tundra was frozen, and travel was possible. However, when they reached the Kvichak River, the ice was refreezing in the cut before the fiber could be inserted. A small trencher was flown to the site, but it was unable to cut the thick ice.



Diver under frozen Kvichak River placing fiber on river bottom

Finally they came up with a solution: a diver would walk the fiber under the ice. A hole was cut through the ice where the diver entered the water, 300 feet from shore. He would walk back to shore and grab the mule tape, then walk 600 feet out onto the frozen river, where they would cut another hole and secure the end of the tape. The diver, then walked back to the original entrance hole, and climbed out. He then re-entered the water through a second hole, 600 feet from the first, walked back to retrieve the mule tape, and repeated the process for the 1,400 foot span of the frozen river. Once complete, they used the mule tape to pull the cable across the river, under the ice.

That was only one obstacle United Utilities faced, but eventually the network was completed. In early 2012, the first live terrestrial videoconference using TERRA-SW took place between the state capital of Juneau and Bethel's Yukon-Kuskokwim Health Corporation (YKHC). YKHC administers a comprehensive health care delivery system for

more than 50 rural, primarily Native communities in Southwest Alaska and is only one of many beneficiaries of the newly built broadband network.



United Utilities installed equipment in remote and difficult to navigate terrain, as illustrated by this site on Kulukak Mountain

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CEO and president of YKHC Gene Peltola spoke to Governor of Alaska Sean Parnell on the historic video call, saying “YKHC will be one of the largest beneficiaries of this new network. It will allow us to continue expanding the use of telehealth applications, including video conferencing with doctors, teleradiology, telepsychology, implementing new electronic health record applications, and much more.”

In addition to the health benefits that this remote region will receive from the network, more than 9,000 rural Alaskans and 750 businesses and organizations—including regional healthcare providers, school districts, and Alaska Native organizations—in 65 communities will have broadband access now that the network is complete.

United Utilities isn’t finished yet! Though initial construction of TERRA-SW is complete, they continue to use their remaining funds to increase capacity between critical sections of the network. This increased bandwidth will further benefit these rural communities.