

Fiber Extensions By Alaska Power & Telephone

- The Lynn Canal Fiber project laid fiber to connect Haines and Skagway to Juneau.
- AP&T can use 40 wavelengths in a single fiber. There are 36 fibers in AP&T's new cable. If AP&T's existing service to Haines and Skagway is a two-lane road, a single wavelength is a 20-lane road. A single fiber is an 800-lane road. The cable as a whole is a road with 28,800 lanes.
- AP&T followed the fiber project with a FTTH effort in Haines and Skagway.
- AP&T's new broadband tiers range in speeds and usage from 5Mb/1Mb with 150GB of usage for \$49.95 per mo to 25Mb/1Mb with 600GB of usage for \$229.95 per mo where fiber is available.

The Silver Arrow feeds the last segment of AP&T's fiber optic cable, near Skagway, Alaska.



Exhibit 6 *Arctic Slope Telephone Cooperative Association's Fiber Project*

- ASTAC completed a fiber backbone project in Utqiagvik. ASTAC completed FTTH projects in Nuiqsut, Point Hope, and Wainwright. ASTAC plans additional FTTP projects planned over next few years.



ASTAC Cellular Upgrade

- ASTAC completed wireless upgrades to HSPA+ (4G) in all 9 ASTAC markets with LTE overlay in Deadhorse and Kuparuk. Additional sites planned for 2018.
- Vastly improved Wireless performance.



Bristol Bay Telephone Cooperative

- Bristol Bay Telephone Cooperative invested in a LTE upgrade for the King Salmon, Naknek and South Naknek region. Construction and installation has been ongoing since August.
- BBTC expects to start beta testing in December with a commercial date of 15 April.

Bush-Tell's FTTH Project

- Bush-Tell is constructing FTTH in six villages/communities over the next 10 years to improve quality of and access to broadband.
- Aniak is the first community to be constructed. Customers will start transitioning to fiber in December 2017.
- Pricing and capacity remain limited by the cost of middle mile.

Copper Valley Telephone Cooperative Middle Mile Project

- Copper Valley Telephone recently invested in a middle mile fiber build from Glenn Rich to Delta Junction.
- Project extends the network and improves ability to offer high speed broadband to more communities.



Copper Valley Telephone Cooperative *FTTH Project*

- Between May and October 2017, CVTC installed fiber optic broadband in 575 homes in Valdez to provide faster internet service.



Cordova Telephone ^{Exhibit 6} Broadband, Cellular and Microwave projects

- Cordova Telephone Cooperative runs fiber to the node and recently invested in technology to bring VDSL service (32/5) to roughly 70% of it's members.
- Cordova recently upgraded its cellular network 4G/ LTE capabilities and added two cell/microwave sites in the past 2 years.
- Cordova is in the process of completing its microwave network upgrade which supports its wireless network and provides redundancy for its undersea fiber cable to Valdez.

Cordova Telephone Cellular and Microwave Site on Pigot Point



KPU's Middle Mile Expansion and FTTP Project

- KPU completed a multi-year project: construction, turn-up, and expansion of digital Microwave system between Ketchikan and Prince Rupert, BC, Canada. Provides significant broadband middle-mile transport circuits between Southeast Alaska and Seattle.
- KPU investment in high-capacity middle-mile infrastructure necessary for Alaskans' to access affordable high quality broadband services today and in the future.

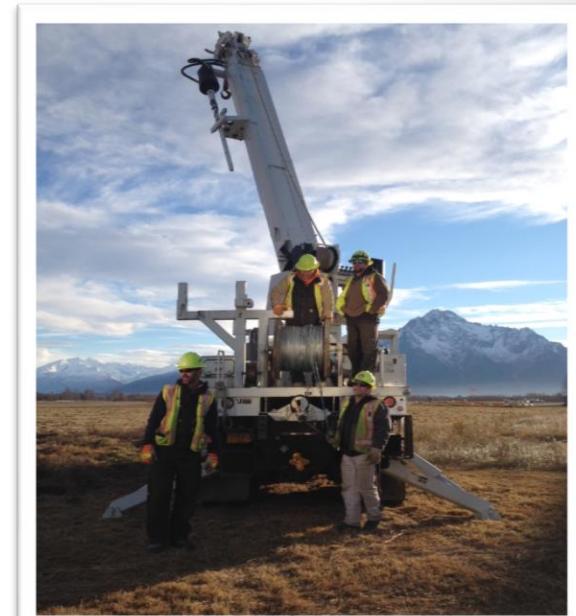
KPU Microwave Tower



MTA's Expanding Fiber Network

- MTA deployed 98 miles of fiber-optic cable in the last year.
 - Connecting new subdivisions
 - Pushing fiber further into neighborhoods
 - Building fiber connection to Fairbanks
- Taking advantage of Borough construction projects to upgrade plant.
 - MSB upgraded roads in the Finger Lake Subdivision. MTA could move copper or install new fiber. MTA chose the latter.
- MTA upgraded broadband services to 6,300 structures this year.

MTA Fiber Installation



Nushagak Telephone Cooperative

Upgraded Microwave Capability

- Nushagak upgraded its microwave network between Dillingham, Clark's Point and Manakotak.
- Nushagak continues to invest in microwave capacity to create and expand its network. Nushagak also invested in fiber connectivity within Dillingham and to Aleknagik.
- Investments in middle mile microwave and fiber infrastructure improve the quality and availability of broadband.

OTZ Upgrades Cellular Network

- OTZ upgraded cellular network infrastructure in Kotzebue in 2016.
- OTZ sought and received an FCC waiver to construct cellular infrastructure in Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Noatak, and Noorvik.
- After approval of the Alaska Plan, OTZ constructed all of these sites, except Ambler.
- Ambler will be completed in 2018.

TelAlaska Expands Network

- TelAlaska extended fiber-optic capability from Moose Pass to Seward.



- TelAlaska installed fiber to the Illiamna airport to boost public safety.