



COUNCIL OF ATHABASCAN TRIBAL GOVERNMENTS

P.O. Box 33

Fort Yukon, AK 99740

Ph: 907-662-2587 Fax: 907-662-3333

www.catg.org

To: Helen A. Shaw, National Telecommunications and Information Administration (NTIA)

From: James A. Pool Jr., Director of Information Technology

Subject: Response to NTIA NOI on Broadband in the Arctic

Date: 3 December 2014

To whom it may concern:

I am the Network Administrator for the Council of Athabascan Tribal Governments (CATG). Our region is known as the Yukon Flats, a watershed roughly the size of New Jersey or about 55,000 square miles, containing two national wildlife refuges and 10 tribal communities along the Yukon River and above the Arctic Circle. I appreciate being given the opportunity to provide some feedback to the Notice of Inquiry and will focus my comments on the opportunities for both business and private parties. There are a substantial number of telecommunications systems available to provide access to health care, education, and other services that we and others provide.

Currently, most of the internet, Wide Area Network (WAN), and communications are being delivered via satellite services, which are quite costly to both the provider and consumer. By using satellite broadband many individuals and companies are now able to communicate with the world. In our region, this allows for vastly improved communication, collaboration, access to health, education, and governance services between villages, and individuals in order to solve some of the most critical of issues that peoples of the arctic face this day.

The village of Fort Yukon has two different "Earth Stations" where satellite signals are beamed to the earth for communications. Interior Telephone Company doing business as Tel-Alaska is the major land line phone provider for voice and some internet communication. This company offers local calling and DSL internet packages with their "top of the line" package offering 1024kbps download speeds for approximately \$99.00 a month. For home phone services you have the option of long distance providers ranging from AT&T to Sprint and just about any other carrier in-between. There is a slight delay in voice communications, however it is hardly noticeable. This is because of the satellite backhaul, which is the amount of time it takes the signal to travel to space and back to the "other side". The second company offering services in Fort Yukon is GCI (General Communications Inc.). GCI offers mostly business internet and network services. Although they are able to offer speeds as fast as 20MBPS bi-directional (upload and download), there are still significant issues due to satellite backhaul that can cause latencies of upwards of 700 milliseconds. In normal

time 700 milliseconds is the blink of an eye, however when you are discussing computing and networking 700 milliseconds can seem like hours.

Because of the latencies, some services are often unusable or connections between computers in villages are dropped because the Time to Live expires. The average Time to Live is roughly 255 milliseconds. Some servers and services can be set up to negate the latency but the quality of services suffers significantly. High speed internet has what are called "Burst Speeds", which is a lot of data getting passed through the internet connection all at once rather than a steady stream.

Fort Yukon also has cellular services available through GCI or Tel-Alaska but GCI is the only company that offers data at approximate speeds of 256kbps. However, all data and voice communications go up over satellite to Anchorage or Fairbanks and are then routed out on fiber optic lines tying Alaska to the lower 48.

The outlying villages of Venetie, Beaver, Birch Creek, and Arctic are not offered internet speeds as high as Fort Yukon. Those villages are often serviced by a subsidiary of the larger telephone companies. United Utilities Inc. is a partner of GCI. They are responsible for both telephone and internet services unless another provider purchases equipment room in their Earth Station. Most of the time calling long distance from these villages is very costly on top of the already high cost for a phone line. Internet services are also available through Hughes Net or Star Band, which is a civilian satellite internet provider. Speeds average approximately 1.5Mbps down and 512kbps upload speed. Most often these services come with a limitation on how much data you are allowed to use due to the high cost of maintaining the network. Because many villages have underdeveloped infrastructure, the largest internet "pipes" are used by schools and clinics with average connection speeds of approximately 1.5MBPS bi-directional. Because of the high cost of internet services most residents in villages do not have regular access to home/residential internet services. The average plan on Star Band runs approximately \$80 a month, which is quite a substantial amount of money in rural Alaska. Because of heavy usage, the maximum available download speeds are rarely seen and most attempts to download require multiple attempts.

In conclusion, there is not a "lack" of broadband access in the rural villages of Arctic Alaska but a tremendous lack of quality and affordable broadband. With the development of Terrestrial communications and the laying of the fiber line from Fairbanks to the North Slope small improvements are being made. Yet it will be years before the residents of the Arctic are exposed to the benefits of improved services. I believe that more attention should be focused on providing better connections to the Arctic Regions, not only for business, education, and healthcare, but to provide the people who live here with access to the technology that provides opportunities for maintaining sustainable rural Arctic communities in a global environment.

James A. Pool Jr.
Director of Information Technology
Council of Athabascan Tribal Governments