ARCTIC

B R O A D B A N D   I N I T A T I V E

BROADBAND WORKSHOP

January 27, 2021

INTERIM REPORT

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INTRODUCTION

The Arctic Broadband Workshop is a collaboration between Voice of the Arctic Iñupiat (VOICE) and the Iñupiat Community of the Arctic Slope (ICAS) to convene North Slope community leaders and telecommunication providers operating in the region to work towards developing a unified plan to promote improvements in service to North Slope communities.

VOICE, co-host of the Arctic Broadband Workshop, is a non-profit organization comprised of leaders – of tribal organizations, Alaska Native Corporations, and municipal governments – from Alaska's North Slope region. VOICE works collectively toward improving the lives of community members through advocacy and engagement in local, state, and international arenas and operates off the core belief that local people should have the greatest say in issues that affect the Arctic Slope. We were grateful to partner with our member entity and the regional federally-recognized tribal organization, ICAS, to delve into connectivity on the North Slope: how it varies between communities and how we can work inclusively to promote improvements.

This workshop took place at a critical time as the COVID-19 pandemic has highlighted the importance of affordable and reliable broadband access, as well as the major discrepancies in connectivity between urban and rural areas. in 2020 – as schools and work went online, travel was restricted and telemedicine capabilities became increasingly important – the difficulties in accessing this resource that is critical to the health and economic wellbeing of our people has never been more apparent.

The outcomes of the Workshop included identifying gaps in communication and lack of clarity about the elements of «connectivity» as it relates to broadband, especially in rural areas, celebrating leading practices, identifying areas for collaboration, and plans for future dialogue. Through a long day filled with learning and conversation, our partners worked to share their experience, broaden their perspective, and understand other stakeholders. After a productive and meaningful 2021 Arctic Broadband Workshop, we look forward to further exploring ways to continue this dialogue in the future.

PROVIDING A CONNECTION

BROADBAND

Broadband is the transmission of wide bandwidth data over a high-speed internet connection. Broadband internet service is the world's most used form of internet access due to its high speeds. Once installed, a broadband connection is always on provided it has power. Broadband is offered in five forms: DSL (Digital Subscriber Line), fiber-optic, cable, satellite, and wireless.

DSL connects using unused telephone wires that cause no interruption to telephone service (unlike old dial-up connections). DSL speeds will vary given a user's distance from the switching station; speeds are slower further away and faster closer.

Cable is a broadband internet connection provided by the local cable TV provider. A cable connection will vary widely in speed depending on the number of users on the service at a specific point in time. Given a specific geographical area, users of the broadband cable service share the connection bandwidth, which slows the speed at peak times when more users are on the system.

Fiber-optic is the newest broadband service on the market and provides the fastest connection. While the movement towards expanding fiber-optic has made huge strides recently, service areas are still quite limited because laying fiber-optic cable is labor-intensive and takes time to complete. Where available, fiber-optic is cost comparable with DSL and cable but provides a much faster connection than both services.

Satellite is the slowest broadband service. Though it can be a good replacement for dial-up for people living in remote areas, installation costs are high and satellite service is generally characterized by higher latency and connection disruptions due to inclement weather. Monthly charges are usually competitive to both cable and DSL.

Wireless broadband connects a home or business to the internet using a radio link between the user's location and the service provider's facility and can be mobile or fixed. Wireless technologies using longer-range directional equipment provide broadband service in remote or sparsely populated areas where DSL or cable service would be very costly.

Wireless Local Area Networks (WLANs) provide wireless broadband access over shorter distances. They are often used to extend the reach of a "last-mile" wireline or fixed wireless broadband connection, such as within a home, building, or campus environment.

In many rural areas, small **Wireless Internet Service Providers (WISPs)** have taken advantage of fixed wireless networks to provide wireless broadband using unlicensed devices in areas not served by cable or wireline broadband networks.
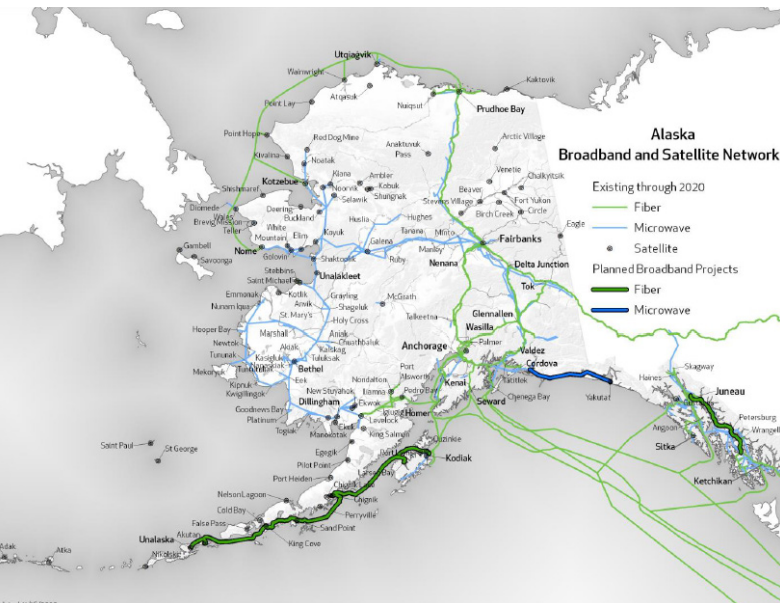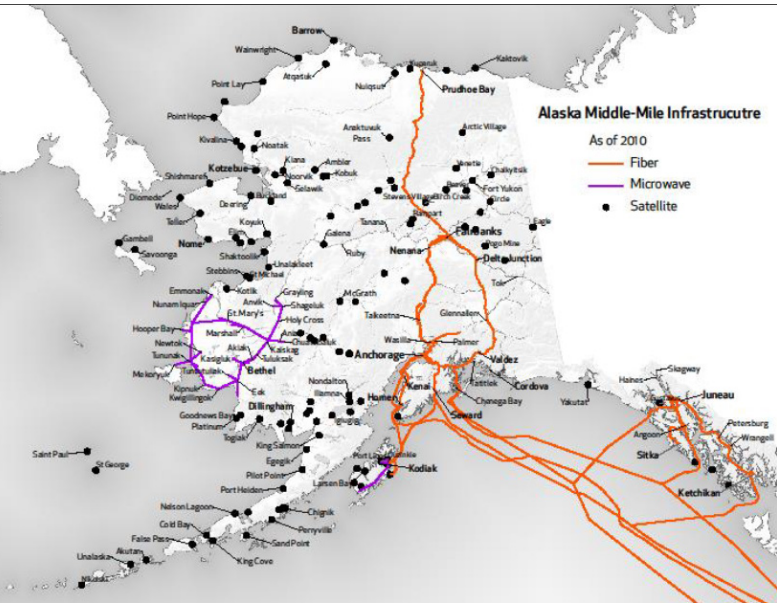
THE MIDDLE MILE

In the broadband internet industry, the "middle mile" refers to the segment of a telecommunications network that links last mile (i.e., local) networks to other network service providers, major telecommunications carriers, and the greater internet. The middle mile is a significant piece of reducing the price of broadband internet access; however, expanding this segment requires considerable capital and is very expensive. For this reason, there has been a marked increase in government proposals for broadband stimulus initiatives that are directed at building out the middle mile.

THE LAST MILE

The last mile are the local links that provide service to the customer or end-user. The last mile is typically the speed bottleneck in communication networks; its bandwidth limits the amount of data that can be delivered to the customer. The last mile links are the most numerous part of the system and have to interface with a wide variety of user equipment, and are the most difficult to upgrade to new technology.

STATE OF BROADBAND

Christine O'Connor, Executive Director
Alaska Telecom Association

Expanding the Middle Mile: *maps show middle mile infrastructure in place in 2010 (top) and 2020 (bottom), including fiber lines, microwave coverage, and satellite service. Alaska has made massive strides towards connectivity.*
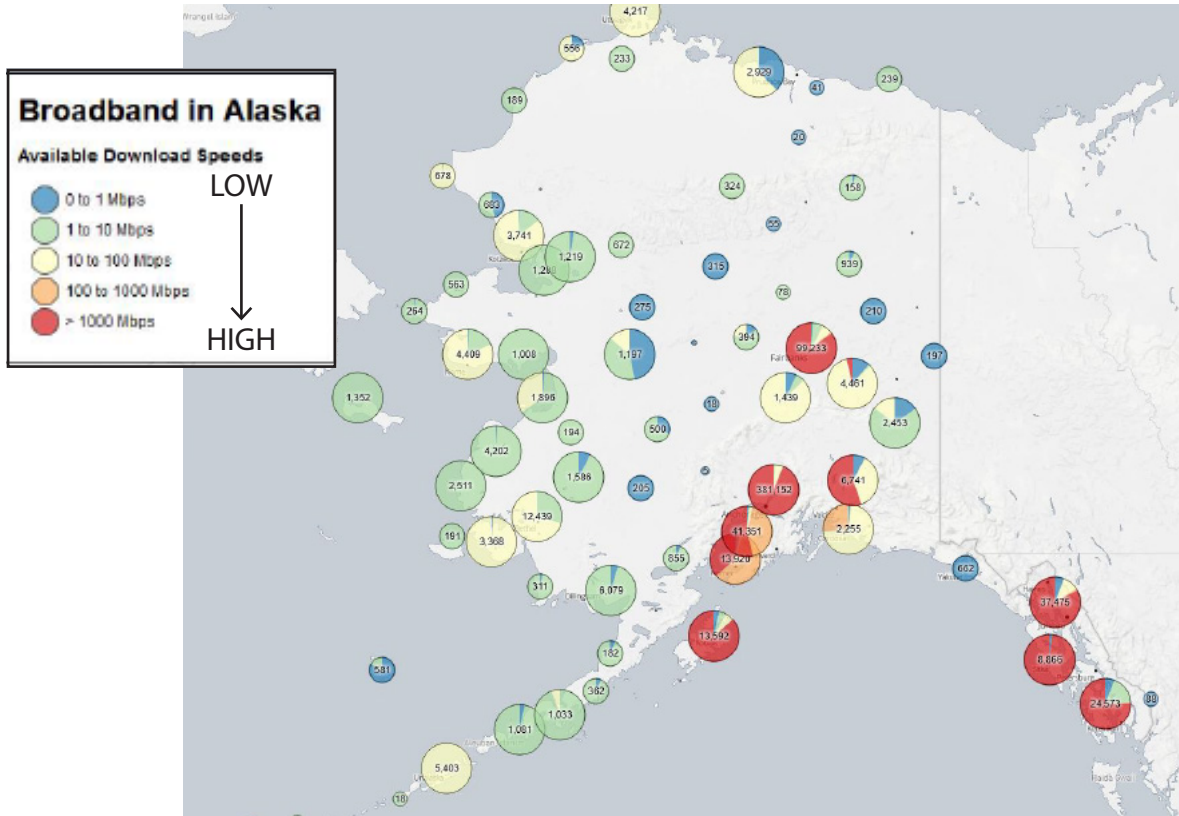
ALASKA'S MIDDLE MILE

- Middle mile infrastructure in Alaska includes thousands of miles of fiber-optic cable, microwave networks that extend hundreds of miles, and many remote communities covered by satellite when fiber-optic or microwave connections are not available.

- Improvements to this segment of telecommunication infrastructure are critical in Alaska, but in other parts of America, middle mile infrastructure is already well established, and they have full access to backbone connections. As a result, expanding end-user service is not the massive undertaking that it is in Alaska.

- Though there are still large gaps where the middle mile connection is through satellites, middle mile networks in Alaska are changing rapidly in both fiber and microwave capability.

- In recent years, we have seen massive investment in building middle mile in Alaska.

- Quintillion brought fiber to communities on the North Slope, Western and Southeast Alaska have seen significant increases to - or newly established - microwave networks, there is new fiber running up the Dalton Highway, new terrestrial and subsea fiber cables were laid connecting Alaska to Canada, and many additional projects are in the planning stages.

STATE OF BROADBAND

MORE PIECES OF THE PUZZLE

- Alaska's reliance on satellites - which are more limited in capacity, have much higher latency, and suffer from interference from inclement weather - means that we are falling behind in many areas of the state.
- 49,927 locations in Alaska were upgraded or connected to broadband by Alaska Telecom Association members since 2015.
- Smaller communities pay more for services because there are less users sharing the costs than in urban centers like Anchorage and Fairbanks.
- Broadband in Alaska is a complex puzzle, and we are seeing the pieces coming together: investments by Alaskan Telecom companies, stable and predictable programs at the federal level, state programs that support operations, and Congressional support of broadband programs that keep grants funded.
- ReConnect is a program operated by the USDA mandated by Congress to fast-track broadband grants and is one of the main drivers of expansion of service in Alaska. Several additional projects received funding in winter 2020 to further expand capabilities over the next several years, including on the North Slope of Alaska.
- State-run programs to support broadband include the Alaska Universal Service Fund and the School Bag program that provides matching support to schools to offset e-rate costs and provide every school a baseline speed of 25 mb.
- Alaska has strong support from our congressional delegation, and Congress as a whole is very focused on promoting improvements to broadband service in rural areas nationwide.
- Opportunities for new technology are on the horizon, including Low Earth Orbiting satellites (LEOs) - Starlink (SpaceX), Project Kuiper, Telesat, One Web – which may provide reliable, fast internet for rural areas without huge middle mile investments.

FEDERAL FUNDING PROGRAMS

PROGRAM	AGENCY	INFORMATION
Community Connect	USDA	Provides grants to applicants to provide broadband service in rural communities where service doesn't exist. Grants are up to three million dollars for broadband projects.
ReConnect Program	USDA	There is likely to be another - third - round of ReConnect grants. Up to 1 billion dollars is expected to be designated for this program to distribute. Applications can be burdensome, expensive, and require community support.
Distance Learning & Telemedicine	USDA	Helps rural communities acquire technology and training to connect educators and medical professionals with teachers and providers to serve rural residents. In 2020, the program funded six projects in Alaska, totaling over 4 million dollars.
Universal Service Fund	FCC	Provides support for constructing and operating broadband networks in rural high-cost areas - one of few programs that pay ongoing costs of maintenance on operations of a project.
Emergency Broadband Benefit	FCC	A new program that directly helps people with low income get broadband connections during the COVID-19 pandemic. It will be a $75 credit that flows through the service provider to help everyone get connected. Rules are being established by FCC, should kick off in April 2021.
COVID-19 Telehealth Program	FCC	An additional 250 million dollars has been dedicated to the program through the COVID-19 relief bill. The aim is to help healthcare providers to provide connected care services to patients at their homes in response to the pandemic. The program provides immediate support to eligible healthcare providers by fully funding their broadband services. FCC is required to fund at least one program from Alaska. Healthcare providers must apply to receive funding through this program.
Tribal Broadband Connectivity	NTIA	One billion dollar grant program that will provide one-time funding directly to tribes. Designation of eligible "tribal entity" is very broad for this program: tribal government, tribal college, Native Corporation, or tribal organization. Every organization that applies will receive an equitable share of funding. The money can be used for many things: "Expand access to and adoption of broadband service on tribal land or remote learning, telework, telehealth resources during the pandemic." Rules for the distribution of funds are still being established. Money must be spent or committed within one year, and funds can be used to subcontract with a broadband provider.
Broadband Infrastructure Program	NTIA	$300 million nationwide to be used for broadband projects that are partnerships between states, municipalities, or boroughs and broadband providers to support infrastructure deployment, especially in rural areas.

LOCAL PERSPECTIVES

WAINWRIGHT
- Providers: ASTAC (Telephone/Broadband/Wireless), GCI (Wireless), HughesNet (Satellite Broadband)
- On Quintillion fiber line
- Issues with bandwidth with more people are online due to pandemic. Difficult to have people in one home trying to work and attend classes at the same time.
- High costs of service
- Major concern is improving service so students can still get an education.

UTQIAĠVIK
- Providers: ASTAC (Telephone/Broadband/Wireless), GCI (Telephone/Broadband/Wireless), HughesNet (Satellite Broadband), Alaska Communications (business only)
- On Quintillion fiber line
- Outages are common in Barrow.
- Transformer connection should be moved to a safer location to protect the integrity of the system.
- Positives and negatives to both providers; there is always room for improvement.

POINT LAY
- Providers: ASTAC (Telephone/Broadband/Wireless), GCI (Wireless), HughesNet (Satellite Broadband)
- ASTAC recently put in dish antenna, raised above snow drifts.
- Problems with infrastructure sinking into tundra due to permafrost melt.
- Internet peaks during midday, users often get kicked off.
- Still unknowns in how Quintillion fiber will affect Point Lay.
- Weather conditions play a huge role in connection service - in bad weather, its common to lose coverage, internet, tv, radio, etc.
- Main form of communication in Point Lay is still VHF radio.

KAKTOVIK
- Providers: ASTAC (Telephone/Broadband/Wireless), GCI (Wireless), HughesNet (Satellite Broadband)
- Community currently connected through copper cable, much slower than fiber.
- Can't use programs like WebEx due to slow internet.
- Can use social media programs, but need more speed for distance learning as more kids are online at the same time.
- Internet service has been slowly improving with respect to speed.

POINT HOPE
- Providers: ASTAC (Telephone/Broadband/Wireless), GCI (Wireless), HughesNet (Satellite Broadband)
- On Quintillion fiber line
- Service is slow for some users depending on provider and plan.
- Costs of service are high, not everyone can afford to be connected.
- Service is dependent on weather.
- Larger businesses in community can use video conferencing for holding meetings.

ATQASUK
- Providers: ASTAC (Telephone/Broadband/Wireless), GCI (Wireless), HughesNet (Satellite Broadband)
- Grateful to see incremental improvements.
- Currently seeing community connected to the overland fiber cable; a lot of work has been going into that project.
- Looking forward to being tied into that next year and catching up with the rest of the world.

ANAKTUVUK PASS
- Providers: ASTAC (Telephone/Broadband/Wireless), GCI (Wireless), HughesNet (Satellite Broadband)
- Programs that require high internet speeds don't work well; can't do video conferencing.
- Overall, service is generally good.

REGIONAL PERSPECTIVES

ARCTIC SLOPE NATIVE ASSOCIATION

Goals:

- Bring healthcare closer to home for patients.
- Expand remote healthcare services
  - More cost-effective, doesn't disrupt patient lives; patients can be close to their support systems.
  - Tele-psychiatry: psychiatrist can speak directly to patients in crisis, allowing them to rapidly evaluate and determine a method of care. Can cut hours and days off traditional psychiatry route using tele-psych.
  - Increase remote cardiology capabilities: virtual face-to-face for pulmonary function tests. We are using a special stethoscope to listen to lungs, heart, etc., and transmit to EKG for diagnosis /treatment. Heart monitor that patients can wear at home that transmits data on heart rhythm or cardiac issues.
  - Remote sleep studies.
  - Virtual training and clinical education, simulators to continue staff education.

Challenges:

- Outlying villages don't have the same capabilities as Utqiaġvik.
- Issues if a patient has a poor connection at home.
- Remote telemedicine often has large data set; we don't have the IT infrastructure needed for the transmission of data.
- Hospital in Utqiaġvik has expanded services massively over the past few years, now doing 3D mammograms, CT scans, lung test screening, etc. but still requires a trip from outlying villages to Utqiaġvik.
- Some patients must be transported to Anchorage for advanced care and need the capability to transmit data to experts in Anchorage hospitals.
- "Can take the image, but it's no good if you can't transmit the image to experts to help get the patient diagnosed."

- There are varying levels of connectivity between communities: largest discrepancies are in Atqasuk, Kaktovik, and Point Lay – the equipment is there, and staff is trained, but we are not able to transmit images and data to/from those communities.
- Where we previously relied on satellite connections, some communities (including Utqiaġvik) are now on fiber. While this is a faster connection, it brings more difficulty maintaining the network in the Arctic.

ILISAĠVIK COLLEGE

Goals:

- Make distance learning a realistic option for all students. Pandemic has highlighted the need for more flexible approaches to learning.
- Expand bandwidth and internet speeds to facilitate virtual learning.
- Leverage grant and funding opportunities to offset student internet costs.
- Iḷisaġvik has worked to make all classes and meetings available via Zoom. Over the past year, attendance has increased as instructors have adapted methods to make students more successful. Enrollment has expanded to more out of region students across the state.

Challenges:

- Iḷisaġvik is paying the highest annual internet costs of any Institute of Higher Education in the country and has the lowest quality service and connectivity.
- Students that have family members that work for home or children in online classes aren't able to participate due to limited bandwidth.
- Limited capacity in villages.
- Students aren't able to prioritize attendance due to prohibitive internet costs.
- College is currently operating at connection ca-

pacity; an increase would double monthly costs.

- There are peak hours where community capacity is maxed out - usually in the afternoon.
- Need to prioritize reduced costs for overall internet access slope-wide.
- Quality of internet needs to improve.

NORTH SLOPE BOROUGH

- Borough plays a large role in communications in every village.
- NSB has a lot of services that it provides in communities that, due to the COVID-19 pandemic, have been forced to be handled virtually.
- We have seen, from Borough's perspective, a general improvement over the recent past, and we are grateful for those improvements while acknowledging that there are gaps that still need to be addressed.
- Distance learning has been a massive challenge for the North Slope Borough; only a fraction of children have been able to participate effectively in online coursework, which is a major cause of concern. We have learned a lot through this pandemic in regards to what is functioning and what is not functioning in the system.
- Technologies that have been commonplace elsewhere in Alaska and the country, we are just receiving on the North Slope. We are learning their applications.
- The Borough has received many requests over the past year, particularly in the areas of online learning and families' abilities to access that. This is something we are working on with Superintendent Harvey at the School District.
- Overall, we are adapting to make use of what is available to us and accepting the limitations.
- Continued discussions on this topic are needed and welcome. Areas of collaboration between tribal entities, healthcare providers, school district, community members, and service providers are necessary.

ARCTIC SLOPE REGIONAL CORPORATION

- The main issue from the corporate side that we run into is not enough bandwidth at the Top of the World Hotel.
- ASRC has invested heavily, along with the Borough, in telecommunications infrastructure on the North Slope with the aim of bettering the lives of our people.
- We hear a lot of frustration from community members about not only the high cost, but also the slow speed of internet for most homes. We are hearing that folks are unable to download something as simple as a PDF document due to slow internet. This definitely has a negative impact on those working or studying from home.
- Echoing others, education is key to getting our region to a good place. It is frustrating and heartbreaking to see these kids not able to succeed through no fault of their own, but because they don't have good enough connectivity.
- We are certainly no strangers to the high costs of living that many of us experience in our communities - we see it in airfare, in the price of goods and services, and certainly in what we are paying each month for internet - but hope that this is something that may be resolved in the near term as infrastructure is expanded.
- Important to remember that what works in Barrow often doesn't work in the villages. Encourage folks that work in IT services to visit communities to get a better grasp on the capabilities.
- Realize that it will be a hard push to get where we want to be, looking forward to working collectively to find solutions.

SPECTRUM BROADBAND

Mariel Trigg, CEO and Founder MuralNet

Broadband internet access on the North Slope, like many rural areas around the country, is unreliable and expensive. In an effort to close the gap in reliable internet service between urban areas and rural tribal communities, the Federal Communication Commission (FCC) has created 2.5 GHz Rural Tribal Window that gives tribes across the country the opportunity to claim licenses - for free - within the 2.5 GHz spectrum that would allow them to provide broadband to their communities. Once tribes are approved for their licenses, they would control a section of the spectrum that falls on their tribal land.

POSSIBLE APPLICATIONS OF LICENSE:

- The Spectrum 2.5 GHz can be used like a "sprinkler head" to connect end-users to the service - a tribe can broadcast internet over their lands.
- Tribes can build their own networks, work with industry partners, or rent out spectrum.
- Can share services across the area of license, partnering with local service providers.
- Another option is to build a small, local cell network.
- Connect between villages using an outpost/tower either through the tribes or using industry infrastructure and spectrum.
- Potential to offset and pool costs through careful planning. Possibilities like taking advantage of connection of highly subsidized entities such as schools, health centers, and tribal governments and then using those as "hotspots" to broadcast to the rest of the community.
- The spectrum can be used to establish a network to provide free internet access to tribal members.
- May be possible to use a network to drive down the price of competing internet service providers.

KEY CHALLENGES:

- While infrastructure is relatively low cost for inter-community communications, connecting to "outside world" is extremely expensive.
- Monthly bills can still be extremely costly for end-users.
- Federal government provides a lot of funding for infrastructure but does not provide money for operations.
- Costs of building and operations in Alaska is generally about three times the cost of those activities in the rest of the country.
- Will require extensive collaboration efforts to make this opportunity cost-effective and useful for all members of the community.

Map of Spectrum License Applications by geographical area in Alaska.

REGIONAL LICENSE HOLDERS:

On the North Slope, three entities have applied for spectrum licenses: the Iñupiat Community of the Arctic Slope (ICAS) applied for a consortium license that encompasses tribal lands surrounding Anaktuvuk Pass, Atqasuk, Kaktovik, Nuiqsut, Point Lay, and Wainwright in collaboration with the respective tribal governments for each community. The Native Village of Point Hope and the Native Village of Barrow each applied for licenses for their individual communities. Together, the license applications cover the entirety of the North Slope.

Native Village of Barrow (NVB)

- Working with a contractor to assist with license
- Received Bureau of Indian Affairs (BIA) Broadband Plan funding to assist Tribe through the process of receiving and implementing their license.
- NVB is working to develop a plan to assist in generating income for the tribal council.
- Will have council approve plan subject to their desires.
- Tribe has exclusive jurisdiction for tribal government and child assistance, so this will help with this effort.
- BIA Broadband Grant opportunity for tribal planning and infrastructure – allows for development of options for planning and build-out.

Native Village of Point Hope (NVPH)

- License pending approval.
- Currently working with Native Village Council to develop a path forward for the community.

Iñupiat Community of the Arctic Slope (ICAS)

- License is pending approval.
- Working to establish a consortium with the Native Village tribal governments of Anaktuvuk Pass, Atqasuk, Kaktovik, Nuiqsut, Point Lay, and Wainwright.

NORTH SLOPE TELECOMMUNICATION PROVIDERS

Jane Nelson, Tyson Gallagher - GCI

- GCI provides services for healthcare industry, oil and gas services, and residential use.
- Residential GCI services rely on satellite technology, which drives prices higher and limits products and services.
- Microwave technology is effective but expensive and is used to connect communities to mainline infrastructure in many places in Alaska.
- GCI is working to update infrastructure statewide
- Launched internal 10-year strategy to connect and invest in rural Alaska - is working to identify investment priorities, consumer behavior, and new technologies.
- Pandemic has really highlighted and put a strain on existing issues.
- Goal is to deliver 1 gigabyte service to communities.
- Two-way communication requires more from system than one-way communication. For example, speeds for streaming/video teleconferencing are:
    - Netflix, 2-5 megabits/second for one-way streaming
    - Zoom or two-way calls require 4-8 megabits/second

Thomas Lochner, Brian DeMarco - ASTAC

- Reaches 87% of all North Slope homes with fiber.
- Working to extend network and improve service to 4 communities that rely on satellite service as they did not get tied into fiber through Quintillion: Atqasuk will be connected to fiber line in 2022, Kaktovik will have microwave expansion in 2023. Point Lay and Anaktuvuk Pass will be part of the next large project/grant cycle - 'Re-Connect 3'
- Currently has 23 cell sites across all villages.
- Working to move to 5G

- ASTAC has been working through the pandemic to provide COVID credits to help offset increased costs associated with at home learning and work.
- Working to get a local school network set up to allow students to use internet for free for school content. System would use the School District as the hub and ASTAC would grant school access to every student's home. Currently working with industry partners, the FCC, and the school district to do proof of concept tests.
- If successful, will be working with ASNA to duplicate this idea in healthcare sector.

Ariel Burr - Quintillion

- Quintillion provides the middle mile, the "freeway," but does not provide end-user services.
- Partners and works closely with ASTAC and GCI, who buy their service to deliver to end-users.

- Subsea fiber optic cable connects to terrestrial cable at Prudhoe Bay, travels along the Dalton Highway. Another terrestrial cable connects to Prudhoe Bay and then to oil and gas infields in the region, facilitates those operations and their networks.
    - 30 terrabyte capacity that can be expanded up to 90 terrabytes
- Planned projects: Extend subsea cable to the Aleutian Islands and Japan to the west; east to Greenland, and on to Europe. This will hopefully facilitate Alaska becoming a more strategic player in the global markets.

GOOD PRACTICES & NOTABLE SUCCESSES

- Industry-wide acknowledgement of need and areas of improvement. Raising capacity is a near-term goal.

- Industry has been able to bring in federal money through grants - mainly the Connect & Reconnect Grants through the United States Department of Agriculture - to offset the high costs of infrastructure expansion on the North Slope.
- Collaboration between companies allows for creative solutions to complex problems and maximizes available infrastructure.
- Employing multiple wireless technologies leverages existing infrastructure.

KEY CHALLENGES

- Capacity is very expensive; much of it is tied up by schools, businesses,and healthcare facilities, which raises prices for residential use.
- COVID-19 pandemic has increased demand at a rate that was impossible to predict with no ability to quickly expand services.

OUTCOMES

COLLABORATION IS KEY

The necessity of collaboration and continuing the conversation were key outcomes from the 2021 Arctic Broadband Workshop. Opportunities to continue working together to identify mutually beneficial solutions are numerous.

Gathering many stakeholders around one (virtual) table was a great exercise in expanding perspectives and clarifying information. It was helpful for community members to hear from industry representatives about the ongoing efforts to improve service, alleviate the stresses of a maxed-out system, and reduce costs. Equally important was industry participants hearing direct information from community leaders on areas in which the system currently in place falls short.

Together, we discussed how to strengthen connectivity in rural communities, identified several areas of improvement with policy, recommendations for the future, and how Voice of the Arctic Iñupiat can support an outcome that benefits the North Slope region.

Below are some of the discussion items and outcomes from the conversations.

1. **Be proactive in advocating for funding.**
   - The federal government has placed an increased focus on expanding communication capabilities, especially in rural areas.
   - Funding received from outside sources - such as grants - can offset extremely high costs of service and infrastructure improvements.
   - Community entities working with local service providers to leverage and focus spending can maximize grants and government relief programs.

2. **Prioritize continued education about the telecommunications industry in Alaska and on the North Slope.**
   - Bring education and information about the broad system to all stakeholders.
   - Make policy understandable for all people; frustrations arise from the unknown and feeling unheard.
   - Clarify the process from origin to end-user.
   - What are the goals and future projects of industry service providersk, and how can we support them for the collective benefit of our communities and people?
   - What are the needs of individual community members to keep on pace with the rest of Alaska and the world?

3. **Continue the dialogue.**
   - Partnership between all users to unite to create improvements to infrastructure.
   - More information-sharing regarding projects

4. **Recommendations for the future:**
   - Work regionally to identify goals and needs for 2.5 GHz spectrum licenses.
   - Identify areas that need improvement and strategize how to pool resources to address those issues.

HELPFUL TERMINOLOGY

Latency - The time it takes for data to be transferred between its original source and its destination, measured in milliseconds.

WiFi - WiFi is a wireless connection in your house or business that connects your phone or computer to your modem/router. Broadband is the actual internet connection that your modem/router uses to send and receive data from your house to the wider world.

Bandwidth - The maximum amount of data transmitted over an internet connection in a given amount of time. Bandwidth refers to volume, not speed. Calculated in megabits per second (Mbps)

Backhaul - Refers to the portion of the network that communicates with the global internet. Usually implies a high capacity line.

PARTICIPANTS

Arctic Slope Native Association
Arctic Slope Regional Corporation
Arctic Slope Telephone Association Cooperative (ASTAC)
City of Atqasuk
City of Utqiaġvik
City of Kaktovik
City of Point Hope
City of Wainwright
GCI
Iḷisaġvik College
Iñupiat Community of the Arctic Slope
Kaktovik Iñupiat Corporation
Native Village of Barrow
Native Village of Kaktovik
Native Village of Point Hope
Native Village of Point Lay
North Slope Borough
Nunamiut Corporation
Olgoonik Corporation
Tikiġaq Corporation
Quintillion
Ukpeaġvik Iñupiat Corporation
Voice of the Arctic Iñupiat

2021 ARCTIC BROADBAND INITIATIVE WORKSHOP AGENDA

27 JANUARY, 2021

WELCOME

- Rex Rock, Sr, Chairman, Voice of the Arctic Iñupiat
- Sayers Tuzroyluk, Sr, President, Voice of the Arctic Iñupiat
- Morrie Lemen, Executive Director, Iñupiat Community of the Arctic Slope

INVOCATION

- John Hopson, Jr.

PURPOSE AND GOALS

- To listen to what is working and what needs imprvement as it relates to connectivity in communities across the North Slope;
- To outline the Spectrum Broadband Tribal Opportunity; and
- To gather stakeholders and develop a united plan to promote improvements in service to all communities

NEEDS ASSESSMENT

- Community Perspective - Local leaders

    Outline the situation in your community. What works well and what needs improvement, from your perspective?

- Regional Perspective - Regional Entities

    Looking to the future, what improvements are needed to get your organization where you want it to be?

    How can regional entities leverage upcoming opportunities for the benefit of their entities and the region?

TRIBAL SPECTRUM BROADBAND OPPORTUNITY

- Overview of license opportunity
- ICAS, Native Village of Point Hope, Native Village of Barrow

    Goals & next steps

    How can the region support you as a license holder

STATEWIDE PERSPECTIVE

- Christine O'Connor, Executive Director, Alaska Telecom Association

INDUSTRY PANEL - OVERVIEW OF CURRENT SYSTEM AND INFRASTRUCTURE

- QUESTIONS

    How does your business serve North Slope communities? (provide your company information, your "piece of the puzzle")

    What are your drivers to provide the best service?

    What are the limitations of the current system, from your perspective?

    What recommendations do you have to improve the system currently in place?

- PANELISTS

    Jen Nelson, Tyson Gallagher - GCI

    Brian DeMarco, Thomas Lochner - ASTAC & ASTAC Broadband, LLC

    Ariel Burr - Quintillion

CLOSING COMMENTS

- How can we work together & collectively support each other moving forward to take full advantage of the opportunities in front of us?
- Where do we want to be one year from now?

QUYANAQ

COLLABORATIVE PARTNERS

ARCTIC BROADBAND INITIATIVE INTERIM REPORT