

**ALASKA STATE LEGISLATURE
HOUSE EDUCATION STANDING COMMITTEE**

February 15, 2017
9:12 a.m.

MEMBERS PRESENT

Representative Harriet Drummond, Chair
Representative Justin Parish, Vice Chair
Representative Zach Fansler
Representative Jennifer Johnston
Representative Chuck Kopp
Representative David Talerico

MEMBERS ABSENT

Representative Ivy Spohnholz
Representative Lora Reinbold
Representative Geran Tarr

COMMITTEE CALENDAR

PRESENTATION: BROADBAND ACCESS AND CAPACITY IN ALASKAN SCHOOLS

- HEARD

PREVIOUS COMMITTEE ACTION

No previous action to record

WITNESS REGISTER

LEONARD STEINBERG, Senior Vice President
Government Affairs
Alaska Communication Systems (ACS)
Anchorage, Alaska

POSITION STATEMENT: Co-presented the overview of broadband access and capacity in Alaskan schools.

COLIN UNDERWOOD, Program Manager
Education and Health Care
Alaska Communication Systems (ACS)
Anchorage, Alaska

POSITION STATEMENT: Co-presented the overview of broadband access and capacity in Alaskan schools.

TINA PIDGEON, General Counsel

Chief Compliance Officer
Senior Vice President
Governmental Affairs
General Communications Incorporated (GCI)
Anchorage, Alaska

POSITION STATEMENT: Co-presented the overview of broadband access and capacity in Alaskan schools.

CHRISTINE O'CONNOR
Executive Director
Alaska Telephone Association (ATA)
Anchorage, Alaska

POSITION STATEMENT: Co-presented the overview of broadband access and capacity in Alaskan schools.

ACTION NARRATIVE

[9:12:54 AM](#)

CHAIR HARRIET DRUMMOND called the House Education Standing Committee meeting to order at 9:12 a.m. Representatives Drummond, Talerico, Johnston, Fansler, Parish, and Kopp were present at the call to order.

PRESENTATION: Broadband Access and Capacity in Alaskan Schools

[9:13:42 AM](#)

CHAIR DRUMMOND announced that the only order of business would be a presentation on the broadband access and capacity in Alaskan schools.

CHAIR DRUMMOND provided an outline of the status of broad band currently enjoyed in the state, and particularly to the public schools. She said:

We've heard a lot from different school districts about how they are utilizing virtual learning and new technologies, but I think it will be helpful for all of us to learn more about the accessibility issues come parts of rural Alaska face due to geography. As someone representing Anchorage, I know it's easy to take for granted free Wi-Fi at coffee shops, restaurants, bars, even department stores and banks.

But in many rural communities, a library may be the only place to go with free Wi-Fi, and schools struggle to meet the needs of their students. We expect to provide at least 100 kbps for broadband, and we have a long term goal of 1,000 kbps but currently Unalaska City School District is dealing with 13 kbps. I was shocked to learn that during the AASB fly-in this week.

[9:15:27 AM](#)

LEONARD STEINBERG, Senior Vice President, Government Affairs, Alaska Communication Systems (ACS), began the broadband access and capacity presentation, paraphrasing from a written statement, which read as follows [original punctuation provided]:

I have lived in Alaska for most the last 40 years and have two sons who are in the Anchorage public schools. I, personally, care about the future of our state and our youth, as do my 650 colleagues in Anchorage, Fairbanks, Kenai, Juneau and many other communities across Alaska. Alaska Communications is an advocate for an effective and future-oriented public education system in our state, and we, in conjunction with the Boys and Girls Club, have annually recognized youth of distinction with a program called Summer of Heroes.

I will share a brief overview of our company and our broadband investments. Colin will then share specific education projects which we've been involved in and his expertise in federal funding for broadband services for schools.

The need for high-speed broadband to connect Alaska's schools has never been greater. The 2014 Statewide Broadband Taskforce Report states, "We no longer need to debate the benefits and role that broadband plays in the economy. The use of broadband services is prevalent in nearly all that we do from trade, commerce, education, and health care, to finance, government services, knowledge transfer, social networking, or simply entertainment. Technology, the internet, and connectedness are part of our daily lives." We agree. And, we have been working with our industry colleagues, the state and federal government to improve broadband infrastructure in Alaska.

Alaska Communications has a 120-plus-year history connecting our state and have transformed over that time, from a phone company, to a broadband and IT services company. Our purpose is to be a partner for Alaska organizations, listen to their needs and work together to find solutions. We believe we must earn the trust, every day, of our customers. That includes customers at home, wanting to Facetime with a family member, to larger customers like the Kenai Peninsula Borough School District, wanting to connect their students with the rest of the world.

At the same time, we are one of three publicly traded companies based in Alaska. As such, we must balance our responsibilities to our customers, employees, communities and shareholders. We look for every opportunity to invest in broadband, as long as it makes good business sense to do so. In just the past four years, we have invested around \$140M of capital in our state. These investments range from building out fiber infrastructure, to updating applications and systems critical to serving customers.

For example:

In 2014, we partnered with Chugachmiut, a tribal native organization, to bring 2,200 residents in the Prince William Sound region better access to healthcare through broadband-enabled telehealth.

In 2015, we partnered with Quintillion to acquire an underutilized fiber optic system on the North Slope, expanding high-speed broadband to better serve Alaska's oil and gas industry.

Just last year, we became Alaska's first Microsoft partner to offer a private connection to cloud services; we also became the only Microsoft-certified gold education partner in the state.

We have served the Kenai Peninsula Borough School District, for more than 10 years, building out broadband infrastructure to schools, including those in remote communities, bringing 21st-century technology to Alaska's largest geographic school district.

And in Anchorage we have connected every school with fiber to provide the best possible connections to the internet.

Our core network (which you can see in the map provided to you) extends across the state from the North Slope to the Lower 48. It includes two, diverse undersea fiber optic cables connecting Alaska with the rest of the world, secure access to private and public cloud servers for new cloud capabilities, two, diverse, fiber optic cables connecting Anchorage and Fairbanks, a fiber optic network on the North Slope, two fiber routes on the Kenai Peninsula and to Kodiak, two fiber routes into Juneau and microwave links throughout parts of Southeast and Kodiak Island. In addition, we offer end-to-end IT solutions, such as security and network monitoring, and partner with industry leaders like Microsoft, Aruba, Watchguard, Barracuda, Nimble and more.

In addition, we are very excited to become Quintillion's first reseller of its fiber optic network. Quintillion is on track to bring high-speed fiber to five communities this year that, to date, have relied solely on satellites for communications outside their towns and villages. In essence, Quintillion will be a wholesale provider, and we are looking forward to facilitating access to their fiber in schools, health clinics, and businesses in those communities.

I will now invite Colin to talk about federal funding available for schools, through the e-rate program, and how that has and can continue to benefit Alaska schools.

[9:21:58 AM](#)

COLIN UNDERWOOD, Program Manager, Education and Health Care, Alaska Communication Systems (ACS), addressed the committee, paraphrasing from a written statement, which read as follows [original punctuation provided]:

I serve as the Education Program Manager at Alaska Communications. I am the proud father of a very

bright 4-year-old son, my wife and I are looking forward to watching our son grow in the Alaska public school system.

The E-rate program began in 1996, along with the other Universal Services, with the first funding issued in 1998. E-rate funding is percentage based on the poverty of a school, ranging from 20 to 90% funding support. E-rate has grown from a 1.25-Billion-dollar program to over three Billion in the past 18 years. As of June 30, 2016 Alaska has received over 500 Million dollars in E-rate support since 1998, and during the 2015 fund year, July 1 to June 30, Alaska received just over 100 Million dollars in E-rate support.

The E-rate program provides financial support for much needed broadband connectivity to schools and libraries, but sometimes being percentage based funding, school districts are not able to afford the broadband speeds they need. Accessibility and affordability are equally important.

As my colleague Leonard mentioned we have served the Kenai Peninsula Borough School District for over 10 years. In 2013 we built terrestrial microwave services to Nanwalek and Port Graham, to bring high speed broadband to the schools in those communities; enabling the students to participate in video conferencing real time distance education, and allowing them to collaborate with other students in the district and across the State.

The Kenai Peninsula Borough School District was able to purchase this new broadband infrastructure, thanks to the support of the E-rate program. But like all school districts across the State, the district is paying a higher monthly rate, than similar services in an urban setting, due to the sparse population and remoteness of these communities.

However, with changes to the E-rate program last year, the program will now support upfront, one time payments of broadband infrastructure construction, with the expectation that E-rate recipients will see at least a 50% drop in their monthly service, or urban like pricing. Additionally, the E-rate program will

also allow for matching funds up to an additional 10% in support, if a state or tribal entity contribute funds to the construction. This opportunity should be seen as a method to provide greater and new broadband capacity to communities lacking such access today.

While we are proud of our investments and partnerships to expand broadband in Alaska, we recognize there are still many remote communities across our state that will be left unserved, and this is our challenge.

[9:24:38 AM](#)

REPRESENTATIVE JOHNSTON confirmed that ACS provides Kenai schools with broadband, noted the lack of high speed access to the district, and asked about a fiber optic option.

MR. UNDERWOOD reported that Kenai does have high speed connection availability and offered to provide further information.

[9:26:25 AM](#)

REPRESENTATIVE FANSLER concurred with the speaker's characterization that much work still needs to be done, and expanded the scope of the statement opining, "Not just much work, but ... a vast majority still needs to be done..." He asked to know the five communities Quintillion plans to resell fiber connections to.

MR. STEINBERG responded that the subsidy capacity will be established in [Pt.] Barrow, Wainwright, Pt. Hope, Kotzebue, and Nome. Deadhorse will receive service from the Dalton Highway service access link via a separate contract.

REPRESENTATIVE FANSLER referred to a network map, available in the committee packet, and noted that it shows local voice and data switch sites at specific locales. He asked what constitutes a data switch.

MR. STEINBERG responded that ACS owns and operates facilities that are located in communities, but does not own or operate the facilities that connect the community with the rest of the world. Inter-exchange services are accessed, which are owned/controlled by different entities, such as AT&T Alascom or GCI, utilizing satellite or micro-wave systems.

[9:31:46 AM](#)

REPRESENTATIVE PARISH pondered the possibility of the federal e-rate program being scaled back, and how the action might affect ACS and Alaska's telecommunication rates.

MR. UNDERWOOD said it's unlikely that there would be a catastrophic change; however, certain opportunities might go away in the ensuing years, as some districts are currently receiving service at a discount.

MR. STEINBERG added that discontinuance of the federal e-rate program would make broadband unaffordable to schools. A typical district would experience a rise in service rates from \$10,000 to \$100,000 per month, if it had to pay the true/full costs.

[9:34:29 AM](#)

REPRESENTATIVE KOPP recognized the capacity for broadband to bring together global classrooms and learning opportunities throughout rural Alaska. He asked whether there are regulatory hurdles, that the legislature should address, that are problematic for the company's efforts in expanding broadband development or inhibiting its carrier partnerships.

MR. STEINBERG explained that much of the legislation is archaic and encouraged the legislature to review and update the existing laws and rules.

[9:37:37 AM](#)

TINA PIDGEON, General Counsel, Chief Compliance Officer, Senior Vice President, Governmental Affairs, General Communications Incorporated (GCI), said GCI has invested billions in technology, and she provided a map to indicate the infrastructure of the broadband and satellite networks that exist or are planned through 2017. The map indicated fiber, microwave and satellite connections. Each of these technological approaches have positive and negative aspects, but all are needed to provide connectivity throughout the state. It is a high cost to connect with some rural areas. She provided contrasting maps to emphasize the advances that have been made to build important infrastructure, during the last six years. She continued, referring to a prepared statement, which read as follows [original punctuation provided]:

What this map shows [is] a statewide map of infrastructure that's available. It focuses on infrastructure that connects communities from a central point in the community to the internet backbone. This is not only GCI's infrastructure. It represents information we were able to gather from the other providers as well. In some locations there are multiple networks available, for example in a community you might have fiber and microwave connectivity, and/or satellite connectivity.

What this map represents is both existing and planned networks through 2017. Everything that is fiber is either existing or not quite online projects. The purple is the microwave connectivity and where you see black dots that represents communities that are connected via satellite only. Each of the technologies has positives and negatives but we have to be able to utilize all the tools in the toolkit in order to maximize connectivity on a statewide basis.

The three largest hurdles when it comes to statewide connectivity are a combination of: geographic complications, low population, and overall high cost. The map also is overlaid with the boundaries of school districts. So it gives you an idea of what type of services might be available by school district. Before I talk about the positives of any individual network capabilities, I also want to show you a map of where the connectivity stood just six years ago. Fully acknowledging that there are both cost and infrastructure hurdles to be overcome. I do want to identify for the committee that providers throughout the state with the existing resources available including the e-rate program have truly been able to make some remarkable advances in the last six years. And to the extent those resources and programs that remain in place, I anticipate there is continued progress that will still be made.

[9:42:41 AM](#)

REPRESENTATIVE JOHNSTON asked whether all of the infrastructure build-out was via the federal e-rate program or if other grants were involved. She also asked for a prediction regarding the future of the grants.

MS. PIDGEON referred to the work done in the Yukon Kuskokwim region and said the initial ability to extend a combination of microwave and fiber network was due to a federal stimulus program. The initial award was \$88 million in federal funds with half provided in the form of a loan; a 50/50 investment. The investment in that area provided a platform to extend connections further into the delta region. The ability to continue to fund, upgrade, and maintain the networks depends on ongoing funding, which includes the e-rate program.

[9:44:44 AM](#)

MS. PIDGEON reviewed the connectivity options and said fiber is considered to be ideal for what it can provide and how it can be supported. In some situations it may be difficult to maintain fiber and microwave can be a good alternative considering geographic challenges and cost constraints; however, upgrading microwave is significantly more expensive. Satellites have a latency factor that can cause delays in communications. Thus, connectivity is not the issue but rather the length of response time, which can prove to be difficult. She noted that technology improvements are being addressed for satellite service. Bandwidth is the major cost factor that inhibits many areas, she said, and continued paraphrasing from the prepared statement:

From the education perspective it goes without stating that broadband is critical to schools and the education mission. The reverse is also true. Schools and education are critical to extend broadband out into the communities because without the large capacity usage it would be very difficult to make the large investments throughout the state simply to provide service based on residential usage alone. It would be very difficult to make that investment and get any sort of return or be able to service the network in any way going forward. It's my understanding that the committee has heard from school districts [(SD)] and has probably heard many examples of the usage of distance learning. I hope you won't mind if I just provide a few examples.

Lower Kuskokwim SD - largest videoconferencing network in the state. Across five studios it is able to provide simultaneous 5 class sessions at a time.

Kodiak SD - Students there participated utilizing broadband services in an international competition, winning by providing real solutions to real problems, proposed by NASA.

NW Arctic Borough SD - Focus on partnering with the Alaska Technical Center to focus on Career Pathways in areas such as education, healthcare, process technology, and culinary arts.

Schools have also participated in mandated online testing, dual enrollment for high school and college courses, and video conferencing that allows not only in district learning, but to utilize resources across districts as well.

It is possible to provide all of these services across any technology at that point the question really comes back to cost.

Technology can also be used to facilitate cost savings. The focus of this map and this hearing have been mostly the between community connections. Schools also have to have inside, internal connections. And what's been traditionally called inside wiring, which is actual physical lines within the walls and that becomes very expensive in terms of maintenance and upgrade. It's also possible through technology now to utilize more cost effective Wi-Fi services to allow for connectivity in the building.

I'll simply note in wrap up that there is also the ability of accessing resources in the cloud, which may also provide opportunities for cost saving on hardware investments that are typically occurring on the ground today.

[9:52:44 AM](#)

The committee took an at-ease from 9:52 a.m. to 9:53 a.m.

[9:53:27 AM](#)

CHRISTINE O'CONNER, Executive Director, Alaska Telephone Association (ATA), addressed the committee, paraphrasing from a prepared statement, which read as follows:

ATA's members include the landline and wireless providers in Alaska - and these days that means broadband.

Thank you for the invitation to speak with you today. I would like to take a few minutes to talk with you about the Alaska Plan, which is the foundational funding mechanism allowing us to have broadband in rural areas.

What is the Alaska Plan? It is targeted funding to operate, upgrade and extend broadband availability in remote Alaska.

It supports improved and new fixed (landline) and mobile (wireless) broadband as well as voice service, it increases broadband access, but just as essentially, it sustains existing broadband networks.

I'd like to touch briefly on the underlying funding which is enabling the Alaska Plan to move the needle on broadband for Alaskans. Similar to the old rural electrification program, the universal service fund was created to extend networks throughout the United States, even in places where there was no business case to support the network.

Universal service funding has been crucial to Alaska's networks, without it our networks would be a shadow of what they are today. In many, many of our towns and villages, there is no economic business case for broadband without Universal Service support. But with USF funding, companies have been able to build and operate broadband networks and will be expanding and upgrading them over the 10 years of the AKP.

The Alaska Plan is a solution to an urgent problem. Beginning in 2011, reform efforts at the federal level were a poor fit for Alaska. Alaska's broadband providers absorbed an average 21% reduction in the support for operating and investing in broadband networks in just 4 years. Universal service support was curtailed and broadband service threatened and delayed.

August, 2014: Chairman Wheeler and Commissioner O'Rielly toured Alaska and challenged industry for a solution. ATA members formed a working group to

develop an Alaska Plan. We worked closely with the FCC and our congressional delegation to advocate for the Plan. It was finally adopted last fall.

The AKP freezes existing USF support, it re-targets resulting broadband improvements to areas outside Alaska's major urban centers.

It's very important to note that this is the same pot of money which had been dedicated to Alaska (reduced from 2011 levels) and is essential to operating broadband and voice networks. It has now been stabilized and re-targeted to move it from urban areas to the more rural.

This is support that is essential to operating and maintenance of our existing networks today, except now it will stop declining, it is predictable, and is tied to specific obligations. For example, rural providers rely on AKP funding for 25% to 45% of their operating revenue. Without it, networks would go dark.

Predictability is an essential benefit of the Alaska Plan. When companies are investing in infrastructure which may have a useful life of 30 years or more, it is essential to have some certainty in what resources will be available to support that investment.

The Alaska Plan adds that certainty to drive infrastructure. Carriers participating in the Alaska Plan have committed to specific, measurable obligations in return for stability in funding.

The FCC conducted a rigorous review of each company's performance plan. The obligations are tailored to each company's resources and capabilities. It was very important that each company do as much as it could with the funding, but that the bar was not set so high that it was unachievable and would cause a company to lose support entirely. And as I've touched on, loss of support would be catastrophic for our providers.

The Alaska Plan introduces a new level of accountability to USF in Alaska with new monitoring, reporting and potential penalties. The FCC is particularly focused on mapping locations of broadband

service as well as monitoring availability of middle mile. Each company will report progress annually, certify to their benchmarks and provide detailed location reporting. If, at the end of 10 years the targets are not met, the companies will pay back 1.8 times the support.

In Summary, the Alaska Plan is an essential funding mechanism which will both operate and deploy broadband service to Alaskans in rural areas over the next 10 years. It brings the stability essential to investing in broadband infrastructure.

My members are committed to meeting their obligations under the plan, and work is already underway to bring more broadband to their communities.

[9:59:43 AM](#)

REPRESENTATIVE KOPP asked about the source of the funding that she reported provides 45 percent of the operating budget for rural Alaska.

MS. O'CONNOR responded that rural companies are able to have operating revenues funded, ranging from 25-45 percent, via the Alaska Plan universal service funding.

REPRESENTATIVE KOPP questioned what middle-mile monitoring covers.

MS. O'CONNOR replied that the Federal Communications Commission (FCC) is concerned with the lack of middle-mile in some areas of Alaska. Middle-mile is the connectivity, for example, from Dillingham out to the world. The FCC is requiring an every other year report on the availability of service that covers the middle-mile.

[10:01:08 AM](#)

REPRESENTATIVE PARISH asked about the life span for cable.

MS. O'CONNOR answered that it varies, offered that copper cable can provide service in excess of 30 years, and deferred further comment.

[10:01:38 AM](#)

REPRESENTATIVE JOHNSTON noted that there is a new FCC chairman, and asked whether funding changes are anticipated under the new administration.

MS. O'CONNOR responded that there is a commitment to rural broadband, and no role backs are expected.

REPRESENTATIVE JOHNSTON said the field is changing quickly, especially regarding satellite development. It would be good to know what may be in store for the northern hemisphere based on technology that is being applied in the southern hemisphere. The commission that formed the report and adopted plans two years ago could now be considered outdated, she pointed out.

[10:04:31 AM](#)

MS. PIDGEON offered that there are a number of projects that have been announced, or are under consideration, such as the low Earth orbit satellites (EOS). The opportunities that these devices hold for Alaska are two-fold: 1) providers of the networks are not just looking at demand for service in Alaska, but rather globally, creating a much different set of cost characteristics; 2) an EOS which because it's networked and operates closer to Earth, can overcome latency issues and minimize the response time between points A and B. These satellites may exceed the efficiency of fiber connectivity, she said, and offered to provide further information.

[10:06:26 AM](#)

CHAIR DRUMMOND thanked the participants and announced the next meeting.

ADJOURNMENT

There being no further business before the committee, the House Education Standing Committee meeting was adjourned at 10:06 a.m.