Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	GN Docket 09-51
A National Broadband Plan for our Future	)	
	)	GN Docket 09-47
	)	
	)	GN Docket 09-137

COMMENTS OF KODIAK-KENAI CABLE COMPANY, LLC -- NBP PUBLIC NOTICE # 11

Kodiak Kenai Cable Company, LLC ("KKCC"), by its undersigned counsel, hereby responds to the Commission's Public Notice seeking information on the cost and availability of middle and second mile transport services and facilities, and how they relate to making broadband available to all Americans.[1]

I. BACKGROUND

KKCC is an applicant under both the Rural Utility Service Broadband Infrastructure Program ("BIP") and the National Telecommunications and Information Administration Broadband Technology Opportunity Program ("BTOP") for funding the deployment of a middle-mile infrastructure project. KKCC proposes to construct a new undersea fiber optic cable system to provide high speed broadband to western and northern Alaska. Called the Northern Fiber Optic Link, the new cable will provide robust broadband access for the first time to over 140 rural communities, thereby connecting the region's hospitals, medical clinics, schools, remote university campuses, public safety offices, U.S. Coast Guard communications sites, commerce and industry with real-time telecommunications and Internet services. The cable is designed to extend from Kodiak Island to the Aleutian Islands,

[1] DA 09-2186, released October 8, 2009.

to communities in the Bristol Bay region such as King Salmon and Bethel, then north to Nome, Kotzebue, Barrow and Prudhoe Bay.[2]

Many of the communities that the cable will reach already have significant ground infrastructure at the landing sites. Second- and last-mile service providers will immediately be able to utilize the cable with their existing infrastructure and bring the reliable, high-speed broadband activity to customers that have been waiting for such service.

Nearly 40 percent of Alaska's land area (equal to nearly ten percent of the land mass of the 48 contiguous states) – the entire western half of the state – lacks reliable, high speed broadband connectivity. It is served instead by satellite service which is plagued by limited capacity and frequent disruptions. Moreover, the western part of the state of Alaska has some of the most remote and impoverished communities in the United States. Unemployment ranges up to 70 percent and the poverty rate is as high as 65 percent. The communities of this region are isolated by rugged terrain, weather, and the lack of any road or rail system connecting them to any urban area. If funded, the Northern Fiber Optic Link project would create the first true broadband on-ramp to the Internet for the largest, remaining unserved region in the United States. It will also establish a redundant route for telecommunications services to the Arctic, which promises to play a vital role in the future for domestic energy supply and national security.[3]

The Northern Fiber Link will provide immediate broadband connectivity to 62 communities in western and northern Alaska. In addition, it will provide the backbone capacity to support future buildout to an additional 80 communities in this region. KKCC has

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[2] See http://www.northernfiberlink.info/pages/routes.html.

[3] The availability of broadband service in these communities will facilitate the delivery of high quality telemedicine and educational opportunities which, in turn, will help strengthen the communities' cultural traditions as residents will not need to leave their communities for basic medical care or education. Native languages are still spoken as a first language in many Alaska rural villages, a tradition that is threatened by out-migration.

provided the foregoing background because its dedication to opening the largest remaining unserved region in America to state-of-the-art broadband availability will inform its responses to the Commission's questions in this Public Notice. Because the Northern Fiber Optic Link will operate as a middle mile transport network, KKCC will not attempt here to comment from the perspective of a second-mile provider.[4] KKCC has therefore responded selectively below to the numerous questions posed by the Commission in this Public Notice.

II. RESPONSES TO COMMISSION'S QUESTIONS

1(a). On a per-end user connection basis, how much middle mile capacity is needed to provide adequate broadband Internet access to that end user connection? How does the needed capacity for middle mile connectivity vary by the number of customers or usage characteristics of the customer base in a particular location?

There is no question that, to be effective, middle mile capacity must be designed to support simultaneous multiple consumer, enterprise and anchor institution users. In order for the Commission's question to be answered meaningfully, however, an understanding has to exist regarding what "adequate broadband Internet access" means. KKCC has commented in this proceeding on two earlier occasions, in each case advocating for the Commission's adoption of a functional definition that will support not only the burgeoning applications of the Internet of the present, but for the foreseeable future as well.[5] KKCC has previously noted the inadequacy of the definition of "broadband" advanced in the BIP/BTOP Notice of Funding Availability earlier this year.[6] It is further KKCC's understanding that the

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[4] KKCC appreciates and endorses the Commission's definition of "middle mile" and "second mile" transport in the Public Notice, and its Comments below will incorporate these concepts. The Northern Fiber Optic Link will operate strictly as a middle mile transport network, supporting in turn second- and last-mile operators.

[5] Comments of Kodiak-Kenai Cable Company, LLC, GN Docket 09-51, June 8, 2009, at 4-8; Comment of Kodiak-Kenai Cable Company, LLC (responding to Commission Public Notice NBP # 1 seeking comments on definition of "broadband"), GN Dockets 09-51, 09-47 and 09-137, August 31, 2009 (hereinafter, "KKCC Broadband Definition Comments").

[6] KKCC Broadband Definition Comments, at 5.

Commission recognizes the shortcomings of the definition employed by the funding agencies under the American Recovery and Reinvestment Act ("Recovery Act"), and that it intends to adopt its own definition as a central element of the National Broadband Plan now in evolution.[7]

With this in mind, KKCC continues to advocate that "adequate broadband Internet access" assumes a capability that enables, at a minimum, the delivery of interactive, real-time, full-motion, high-definition video content, both in a downstream and upstream mode to and from multiple simultaneous end users. As previously argued, without these capabilities, a transmission pipe will be unable to provide adequate levels of support for such critical applications as interactive distance learning and effective telehealth/telemedicine functionalities that KKCC seeks to support in the unserved areas of Alaska. It will also be inadequate to support the rapid migration to social networking and mobile video applications on the Internet that are being increasingly embraced not only by younger consumers, but in the commercial sector, as well.

KKCC estimates that a single hospital operating in a remote, rural community, in order to provide effective telemedicine applications to its customer base, should be equipped to support approximately 10 interactive video transactions simultaneously. This requirement in itself equates to in excess of half a Gigabit of capacity, requiring at least an OC-12 transmission capability. For rural service areas of the size that will be supported at each of the Northern Fiber Optic Link's multiple landing points – between 5,000 to 10,000 residents – an interactive high-definition video application that is used simultaneously by multiple users within this populace will require multiple OC-48s of capacity. On this basis, KKCC has designed its network to deliver initially at least two wavelengths at each landing point, providing the equivalent of 8 OC-48s or 2x10 Gigabits of capacity for each of its proposed

[7] *See* NBP Public Notice # 1, DA 09-1842, released August 20, 2009.

service areas. Sites with larger communities will have three or even four wavelengths in the initial configuration. KKCC assumes that this capacity will permit multiple simultaneous uses by both consumer and critical anchor institution end users, and will provide some capacity for future expansion and scaling of the network to meet growth in demand.

1(c). What are the technology options for providing adequate middle mile connectivity for the next 5-10 years. To what extent are these technologies available in rural or unserved portions of the country? Explain how the cost and bandwidth capacity of each technology option compares to other technology options and how those factors relate to projected demand for middle mile connectivity in different areas of the country, both rural and urban. Will microwave or other wireless options be able to provide cost-effective middle-mile connectivity to meet those projected needs, and how does spectrum availability impact the cost-effectiveness of these wireless options?

In rural settings, there can be no workable substitute for fiber optic technology for middle mile systems. Once the transport requirement reaches 155 Mbps and above, the only effective transport mode is at optical wavelengths requiring a fiber optic based transmission backbone. Capacity of this nature, particularly capacity that will be scalable to grow with demand, requires a fiber optic middle mile network; no wireless system, whether it be satellite or terrestrial microwave, can operate as an effective substitute.

Satellite and terrestrial wireless systems operate by means of radio frequency (RF) technology. In a digital regime, the number of digits physically capable of being transmitted per MHz of RF capacity is limited. Whereas a satellite provides the benefit of large coverage areas for delivery, the content throughput of a satellite cannot compare to the transmission rates achievable at the much higher frequencies delivered via optics technology. On a satellite, a DS-3 is considered a major transmission pipe. A fiber optic circuit is capable of delivering thousands of such channels simultaneously.

To meet the demands of communities with multiple customers over a period of five to 10 years, an effective transport system will be enabled on the Northern Fiber Optic Link with deployment of a dense wave division multiplexing ("DWDM") system. DWDM permits a

network to be scaled to meet evolving demand over an extended period of time, as has been hypothesized by the Commission. As more and increasingly larger data files are accommodated, the backbone to support such increasing demand is required. This can only be provided by means of fiber optic cable, whether terrestrial or submarine. The Regulatory Commission of Alaska ("RCA") has recognized this reality of bringing meaningful broadband capacity to rural Alaska. In comments filed with the Commission earlier this year, the RCA stated:

> "Satellite fulfilled a vital role in interconnecting Alaska's communications network and modernizing Alaska's television and telecommunications industries, but the inherent limitations of satellite service will preclude rural Alaska from participating in next generation communications....Reliance on satellite for the long-haul transport aspect of broadband service is the major impediment in providing next generation broadband speeds throughout the state, and particularly in sparsely populated areas. While satellite satisfies some broadband definitions, it entails significant recurring costs compared to fiber transport. These recurring costs preclude long-term, sustainable, affordable, broadband internet service in sparsely populated areas of Alaska, particularly as the definition of low-end broadband is modified over time to incorporate higher speeds."[8]

With a fiber system, once the electronics are replaced, the service provider is able to migrate to the next level of offering without requiring a new or additional investment in the underlying transport infrastructure. For example, KKCC anticipates that broadband applications will eventually require an upgrade of electronics on the Northern Fiber Optic Link to provide a quadrupling of the delivery capacity at its landing points to 40 Gbps wavelengths, representing many orders of magnitude beyond the capabilities achievable with satellite or microwave transport services. In the case of the Northern Fiber Optic Link, the cable has been designed with a service life of 25 years. Once the investment is made to procure and lay it, there should be no requirement to fund a replacement backbone during that period of time. Thus, while the initial capital requirements of fiber optic systems is

[8] Comments of the Regulatory Commission of Alaska, In the Matter of Report on Rural Broadband Strategy, GN Docket No. 09-29, filed March 25, 2009, at 5-6.

substantial, the resulting infrastructure provides long-term economies relative to other technology options. As the RCA recognized with regard to the BIP/BTOP programs: "[t]he existence of significant federal funding may enable the development of further middle mile infrastructure (fiber, microwave) that will allow Alaska to reduce its reliance on satellite transport throughout its rural areas."[9]

Microwave and other terrestrial wireless is not a middle mile technology; it is a second-mile solution only. Wireless technologies have limited geographic reach. As a result, multiple wireless systems are required to provide a middle mile solution. This materially impacts the scalability of wireless networks for anything larger than second-mile systems. Initially, microwave and other terrestrial wireless systems will provide useful solutions for the second mile for broadband delivery. Eventually, however, these systems will give way to fiber optic infrastructure, in remote areas as well, since they will be unable to compete with fiber in content transmission speeds.

2(a). What is the price of purchasing middle mile connectivity, broken down by relevant geographic area and technology (e.g., DS3, microwave, OCn, Fast Ethernet, Gigb Ethernet?). How much do these prices vary by length of circuit. Precisely how do these prices for middle mile connectivity vary by category of supplier (e.g., incumbent LECs, competitive access providers, wireless providers, interexchange carriers, Internet backbone providers) and by the different regulatory treatment of the connectivity.

Normally, the cost to the user of middle mile capacity increases in proportion to the distance covered, and is more expensive in remote areas, where such capacity is less readily available. The technology employed, however, can prove the most important pricing discriminator. Because of the incrementally larger transmission capacity that fiber optic delivery systems offer in comparison to satellite systems, once deployed, the end user price of broadband capacity be set substantially lower than that available via satellite. In western

[9] *Id.*, at 6.

Alaska, where satellites currently represent the sole middle mile transport means available, the cost of a T1 line averages $10,000 to $18,000 a month. This cost is not scalable, regardless of how few users exist in the last mile area accessible from the earth station. A comparable channel on the Northern Fiber Optic Link will wholesale for a fraction of that cost. Moreover, because KKCC will operate the cable system on a non-discriminatory, carrier-neutral basis, the price will not vary to the second- or last-mile provider depending on whether it is an incumbent or competitive local exchange carrier, an interexchange carrier or an Internet service provider.

2(f). Given current and projected demand and supply conditions, what portion of the overall cost of providing broadband Internet service to an end user is attributable to middle mile and second mile transport? Using specific examples, demonstrate whether and how the price of obtaining middle mile and/or second mile transport affect the business case for broadband deployment, both now and in the future.

In rural areas, such as western and northern Alaska, a large majority of the cost of providing broadband access to the end user is dictated by the middle mile transport component. In a number of these communities, relatively robust second- and last-mile networks already exist, in most instances developed and operated by local exchange carriers. Because satellite operators for the most part operate in this region without competition in providing middle mile transport, however, the costs are steep (as reflected in the answer to Question 2(a) above), and the service quality is uncertain. General Communication, Inc. ("GCI"), one of the two providers of satellite transport services in rural Alaska, has itself conceded:

> "The satellite network simply cannot keep up with bandwidth demands, and even new satellite capacity would result in a broadband price point that consumers cannot afford. Even if affordable satellite middle-mile capacity emerged, many applications (e.g., videoconference) are latency sensitive, and the only way to eliminate satellite latency is to switch to terrestrial middle-mile service."[10]

[10] Comments of General Communication, Inc., In the Matter of a National Broadband Plan for Our Future, GN Docket 09-51, filed June 8, 2008, at 8.

KKCC is acutely aware that the large distances characterizing remote rural areas, and the scattered dispersion of population, render impossible the development of a business case for deployment of fiber-optic backbone, as is the case in western and northern Alaska. KKCC's development of its initial Kodiak Kenai Fiber Link, a 600-mile submarine fiber optic system connecting the 60,000 inhabitants of Kodiak Island and the Kenai Peninsula of Alaska with Anchorage, was made possible only through federal funding justified to support a Defense Department satellite launch facility on Kodiak Island. The BIP/BTOP broadband infrastructure program made available under the Recovery Act is offering a unique opportunity to replicate this experience over the much broader area that the Northern Fiber Optic Link will service. These programs make feasible a business case for deploying a fiber optic backbone network to a vast region that would otherwise remain unserved, or gravely underserved.

By contrast, in urban areas, the opposite tends to be the case. High-capacity backbone networks are normally found in or adjacent to such areas, and the majority of cost of delivering broadband capacity lies in deploying last-mile networks in densely populated communities of end users.

3(b). Does the price for connecting to an Internet backbone vary from location to location, and to what extent? Are prices in large cities for Internet backbone connectivity less expensive than in smaller cities or towns, and by how much? If so, is this because backbone connectivity prices in smaller municipalities include a substantial middle mile transport component?

Alaska presents a unique microcosm in which the providers of middle mile capacity also control access to the Internet, which is ultimately accessible only through the Tier 1 backbone network operating in the lower 48 states. In most of the continental United States, the Tier 1 backbone operators sell Internet access to lower-tier wholesale or retail carriers, who ultimately make such capacity available to Internet service providers. Where numerous

competitive transport carriers and ISPs exist, the price of access to the last-mile carrier and its consumer is driven down by market forces.

Alaska presents a different model. No Tier 1 backbone providers operate in Alaska. As a result, the Internet "cloud" must be accessed in the lower 48, with Seattle as the typical first point of opportunity for such access. For this reason, no competitive Internet backbone provider market has developed in Alaska. Access to the Internet is brought to Alaska by the handful of carriers that control cable capacity from the lower 48 to Anchorage. From Anchorage to the large rural portions of the state, transport is reduced to satellite delivery provided by GCI and its sole competitor, AT&T. These carriers effectively act in rural Alaska as "Tier 1" operators. These operators offer to rural last-mile carriers and their consumers a choice of either acquiring Internet access from them, or transport from them to access the lower 48 themselves.

The resulting choice for rural users of the Internet is grim. The combination of a lack of transport competition in many of these rural communities, and a scarcity of Internet access resources created by the thin satellite pipes, results in an astonishing rise in cost to the last-mile provider, with the large majority of this cost increase attributed to the choke point in transport capacity and technology between Anchorage and most of the rest of the state. An illuminating perspective on this market phenomenom is provided in correspondence sent by the CEO of OTZ Telephone Coooperative in Kotzebue, in western Alaska, to his Congressional representative in June 2008 making an argument for the universal service high-cost program to be expanded to recognize broadband as a supported service (Attachment 1). The analysis presented demonstrates that a 5 MBps FiOS download package offered in the lower 48 for $42.99 a month would cost a customer in the Kotzebue market between $1,200 and $30,000 a month, depending on how many end users in the rural community would agree to share the cost of the transport service. This example starkly affirms that the

cost of Internet backbone access varies dramatically among locations due to the substantial middle mile transport component, and that such price differentiation, in the case of rural Alaska, is driven by both lack of robust transport competition and lack of adequate transport capacity due to the current exclusive reliance on satellite long-haul services.

3(c) What concentration ratio do broadband ISPs utilize in purchasing Internet backbone connectivity?

While KKCC can only estimate this, the normal concentration ratio to support high-speed Internet access should be no higher than 10:1. In rural Alaska, given the scarcity of broadband capacity made available by satellite transport, concentration ratios are running at multiples of that target number: 50 or as high as 100 to 1. The result is widespread experience of inordinately slow download speeds, even on systems that are advertised as providing "broadband" capability. A new study by the Communication Workers of America ("CWA") ranks Alaska at the bottom among states in terms of average download speeds and among the lowest of any state in the country for upload speeds.[11] This poor showing for the state is undoubtedly heavily skewwed negatively by the painfully slow download and upload speeds experienced in the rural portions of the state as a direct result of the scarcity of Internet access resources available via satellite.

3(d) Given current and projected demand and supply conditions, what portion of the overall cost of providing broadband Internet service to an end user is attributable to Internet backbone connectivity. Does this portion of cost vary by distance to the nearest T1 connection point, and to what extent?

As previously stated above, the cost of Internet backbone connectivity is inextricably linked to the cost of transport services in rural Alaska. They are offered by the same providers. In the Alaska rural market, the high cost does not vary in any direct proportion to

[11] Speed Matters: Affordable High Speed Internet for America (August 2009). *See* www.speedmatters.org.

distance from the T1 connection point, but rather is governed by the lack of competition and scarcity of capacity in the middle mile transport segment between Anchorage and rural communities. For example, Anchorage is located approximately 2,000 miles from the nearest T1 connection point in the lower 48, as measured by fiber optic cable. From Anchorage, the distance to rural communities ranges in the hundreds of miles. Yet, the cost of a T1 line between Anchorage and Seattle will approximate $1,000 a month, whereas an identical connection (including the satellite link) out to Bethel or another regional rural center of the state will be priced in the $10,000 a month or higher range. Therefore, the cost for Internet access jumps dramatically and disproportionately as a result of both the prevalent satellite technology currently employed, and the lack of competitiveness in the provision of that service.

4(a). Is the provision of a high-capacity fiber optic middle mile or second mile connection to a particular location a natural monopoly in some locations?

KKCC will not attempt to answer this question in relation to second mile systems. In certain remote rural areas, such as the one KKCC proposes to serve in Alaska, the deployment of a high-capacity fiber optic middle mile system will almost certainly require public funding support since it is unlikely that a business case can be developed for the construction of such a system on a commercial basis. In such cases, it is equally unlikely that public funds will be used to support the construction of competing middle mile networks. Notwithstanding the foregoing, a single publicly funded middle mile fiber optic network will not display the adverse characteristics of a monopoly if it is operated as a carrier's carrier, permitting competing second-mile and last-mile providers access to the backbone infrastructure on a non-discriminatory basis. Under such circumstances, the end users gaining broadband access by means of the backbone system will not perceive the presence of a monopoly provider. This is exactly the business model that KKCC intends to follow in its

operation of the Northern Fiber Optic Link, and a condition that it has proposed for its funding under BIP/BTOP.

4(e). To what extent, if any, is the availability of adequate, reasonably priced, and efficiently provided middle mile and second mile transport infrastructure in an area limited by access to capital?

The development of second-mile networks in remote rural areas has been supported in part by providers' access to federal high-cost universal service support dollars that may be used to fund DSL networks offering both a voice telephone and broadband application. Other infrastructure development in this sector has been made possible by low-cost Rural Utility Service loan programs.

The deployment of middle mile networks in KKCC's proposed service area, on the other hand, has been severely retarded by a lack of access to capital. Because no business case for a satisfactory return on investment can be made, given the capital expenditure demands of middle mile fiber optic projects and the small and widely dispersed population centers of the region, no fiber optic middle mile network exists there today. The large coverage areas of commercial communications satellites has permitted the deployment in this region of middle mile satellite networks. The limited technical capability and unacceptably high cost of such systems due to their lack of scalability for small, rural population centers has been discussed above. Without public support at some level, the deployment of an effective, competitive middle mile broadband system in KKCC's proposed service area would never occur.

4(g). If some government subsidy or action is necessary to facilitate construction of second mile and middle mile facilities, please identify the type of government action that would be adequate, such as the proposed regulatory action, explicit funding, or tax credits.

For a high-capacity fiber optic delivery system to be deployed where a case for a commercially developed system cannot be made, public grants and low-interest loan funding of the type offered through BIP and BTOP will be required. Tax credits will not in

themselves be sufficient to spur such development, since the front-end capital requirement for such a system are large when compared to the project's calculated revenue stream, and the recoupment of such an investment through credits would, as a result, take too long to be effective. Finally, regulatory concessions should not be prioritized for this purpose. KKCC has found that it has been able to meet all environmental and permitting requirements, without waivers or special exemptions, in preparing the Northern Fiber Optic Link for shovel-ready status. Thus, the government's most useful contribution would be on the funding side.

5(a). How do firms compete in providing middle mile transport services? Do firms compete on a circuit-by-circuit basis, by offering connectivity to specific points specific by the customer, or do firm compete for the customer by offering customers the ability to order a set of particular circuits at certain averaged or specified prices or terms?

In rural Alaska, middle mile transport capacity is controlled by a duopoly of satellite capacity providers. The broadband capacity they offer is limited and of uneven reliability, and as a general rule these operators do not tailor their service offerings to the needs of specific customers. Instead, to the extent they compete (in those select communities of western and northern Alaska where both operators are, in fact, active) it is for customers in the locations they service. A further material characteristic of the Alaska middle mile market is that both providers of satellite capacity own and operate retail facilities and services, and provide transport in support of their own retail services, as well as for other second- and last-mile providers. KKCC believes its broadband backbone will operate with maximum effectiveness if KKCC does not attempt to compete in either the second-mile or last-mile space, thereby avoiding operating adversely with its own customer base.

5(b). What is the effect on price of the presence of a second or third facilities-based provider of middle mile or second mile transport service? More specifically, when a second provider of middle mile transport service enters the market, how are those services priced in relationship to the incumbent provider's price, and what is the price response by the existing provider? Does price competition vary if the second provider utilizes a different technology to provide middle mile or second mile transport?

In the Alaska rural market that KKCC seeks to serve, because the available transport capacity is of limited quantity and quality, the fact that two operators exist has proven of little consequence. The scarcity of broadband capacity, versus demand for access, has effectively pushed the two providers into a duopoly mode resulting in no perceivable price benefit to the end user. By seeking to become a third transport provider to the region, but by means of fiber optic technology, KKCC hopes to effect a more dramatic impact in terms of both higher reliability and lower price. The latter effect would be the result of deploying a pipe capable of delivering broadband capacity in multiples greater than that available by means of satellite technology. Thus, KKCC believes it is not simply the number of competitors in a middle mile marketplace, but the nature and quality of infrastructure provided, that can have a materially beneficial affect for the end user.

5(d). Are there contractual terms and conditions in typical contracts for middle mile or second mile transport that impair or impede the ability of competitors to compete for either middle mile or second mile transport services?

Because fiber optic backbone networks servicing rural areas of the country will, in most cases, require some measure of public funding support, KKCC believes it is important for the Commission to consider what terms of operation and use should apply to infrastructure deployed with such assistance. KKCC submits that all such assistance recipients should be required to operate their systems as a carrier's carrier on a carrier-neutral basis, contracting with all other carriers non-discriminatorily.

KKCC endorses the FCC's Internet Policy Statement and the network openness principles and requirements set forth in the Notice of Funding Availability ("NoFA") for the BIP/BTOP programs.[12] In addition, KKCC believes publicly funded backbone network operators should invoke the requirements of Section 251(a) of the Communications Act, as amended, to request interconnection wherever technically feasible with the facilities of all second- and last-mile providers in its proposed service area. Finally, KKCC submits such operators should be enjoined from installing any network features, functions, or capabilities that do not comply with the guidelines and standards established pursuant to Sections 255 and 256 of the Communications Act.[13]

[12] 74 Fed. Reg. 33104, July 9, 2009, at 33110-11. As made clear in the NoFA, the interconnection and network management standards employed shall also remain subject to the needs of law enforcement acting pursuant to statutory delegated authority.

[13] 47 U.S.C. §§ 255, 256.

Respectfully submitted,

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November 4, 2009

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June 22, 2008

The Honorable Ted Stevens
Senator
522 Hart Senate Office Building
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Dear Senator Stevens:

It is becoming increasingly difficult to provide Internet download speeds in rural Alaska that are comparable to Internet download speeds available in urban areas of the country. As the first two attachments to this letter show, an Internet customer subscribing to Verizon's FiOS Internet package can get a 5 Mbps download for $42.99 per month, while that same customer would have to pay between $1,200 and $30,000 per month just for the satellite transport to get a similar download speed in rural Alaska.

The Communication Workers of America conducted a national survey of Internet speeds between September 2006 and May 2007, and the results were included in a July 2007 publication entitled: "Speed Matters: A Report on Internet Speeds in All 50 States." While the survey was not a scientific collection of data, the results are troubling. The survey ranks Alaska at 51st in both download and upload speeds. Attached is a chart that summarizes the download speed data from the Report. Alaska is significantly behind the rest of the nation, and I believe that the very low download speeds are attributable, in large part, to rural Alaska.

As the download speed gap between rural and urban Internet users is only going to increase over the coming years, we believe that it is time to include broadband as one of the supported services under the USF program. As provided by the Alaska Telephone Association, listed below is an outline of how broadband could be integrated into the USF program:

- Add a broadband requirement to the definition of universal service for rate of return carriers. The broadband speed will evolve as anticipated in the dynamic concept of universal service. Rural rate of return carriers will provide the required service as part of the regulatory contract.

- Maintain USF mechanism for rural rate of return carriers. Rural rate of return carriers will be afforded the opportunity to set affordable rates. Any reasonable

ATTACHMENT 1

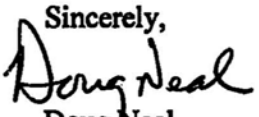
costs that are not recovered from affordable rates should be recovered from the USF.

Justification: Network support to rural rate of return carriers is justified by 47 U.S.C. § 214, which clearly distinguishes between rural and non-rural. At the Commission's discretion, this USF network support becomes a program only available to rural rate of return carriers in exchange for COLR, including broadband deployment, to the standard set by the Commission. Competing landline carriers still may qualify for lifeline and linkup support.

- The cost of DSL specific network equipment (DSLAMs, etc.) and the cost of transport to the internet portal qualify for USF support for rural rate of return providers.

I want to close by thanking you for all that you have done for rural telephony in Alaska. Were it not for your hard work as our Senator, we would not be able to provide, nor would our customers be able to afford, communications services.

Sincerely,



Doug Neal
CEO

cc The Honorable Lisa Murkowski
The Honorable Don Young
Jim Rowe, ATA Executive Director

Enclosures: Verizon FiOS Internet price sheet
Spreadsheet comparing download speed costs in urban vs. rural Alaska
Average U.S. Internet Download Speeds

Can I Get FiOS?
Please enter your home phone number below.
GO!
Don't have a Verizon phone number?
Qualify your address

Plans & Pricing

Get our best offer for our annual plans* only online. Special Offer: First month **FREE**.

Verizon FiOS Internet Service Plans and Speeds

Annual Plans Check Availability

Fast	Faster	Faster Plus	Fastest
5 Mbps/2 Mbps	15 Mbps/2 Mbps	15 Mbps/15 Mbps	30 Mbps/15 Mbps
$42.99/mo.	$52.99/mo.	$64.99/mo.	$139.95/mo.
		Includes FREE services	Includes FREE services

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Actual throughput speeds will vary. Learn more about service speeds and our pricing plans.

All Plans Include:

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- 9 email accounts
- 10 MB for your own Web page
- Access to online entertainment
- Exclusive member discounts
- Choice of online services
- Option to add premium services

Get Started

Verizon reminds you to always download legally.

Limited time promotional offer applicable to customers who order Verizon FiOS Internet 5/2 Mbps, 10/2 Mbps, 15/2 Mbps, 15/15 Mbps, 20/5Mbps or 20/20 Mbps speed package with a one or two year plan ONLINE. Not available with bundle offers or 30/50 Mbps speeds. First month free after bill credit. Normal monthly rates apply for remainder of plan term. Rate may increase after term plan expires. $29.99 activation charge.

Acceptance of Verizon Online Terms of Service required. Verizon Installation required. Installation charge of $79.99 applies to configuration of main computer only for month-to-month packages. Installation of additional computers at additional fee. Minimum systems requirements apply. Windows 98, Windows 98 Second Edition (SE) and Windows ME (Millennium Edition) with Verizon FiOS Internet not supported by Verizon. Not all features of Verizon FiOS Internet Service with Windows Live, AOL or Verizon Yahoo! are Macintosh compatible. Equipment provided will be new or a fully inspected, tested and warranted return unit. Limited to one router provided at no charge per household per FiOS service, FiOS Internet and/or FiOS TV. If one year plan is cancelled between months 2 and 12, $99 early termination fee may apply, or if two year plan is cancelled between months 2 and 24, $149 early termination fee may apply. Router provided at no charge must be returned or $99.99 equipment fee applies. Month-to-month packages available. CAT5 or higher grade inside wiring or existing RG59/RG6 coaxial cable required. Connection speeds are between your location and Verizon central office serving your location. Actual download and upload speeds will vary based on numerous factors, such as condition of wiring at your location, computer configuration, Internet and network congestion, and speed of website servers you access, among other factors. Available in select areas. Speed and uninterrupted use of service not guaranteed. Current Verizon Online High Speed Internet customers who move to FiOS Internet service will have their Verizon Online High Speed Internet permanently disabled after their FiOS conversion. Additional charges, taxes and terms apply.

Voice service for FiOS customers is provisioned over fiber. A battery unit will supply back-up power for standard voice service (but not Voice Over IP services), including E-911, for up to eight hours. Power for services provided on the Verizon FiOS network must be supplied by customer. Customer is responsible for backup battery replacement. Backup battery does not supply power for Internet, VOIP, or video services. In case of power failure, 911 service (except through VOIP) will be available until backup battery expires. Certain telephones, answering machines and other telephone equipment not meeting industry standards may not work

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A comparison of the cost of obtaining high speed Internet in an urban part of the country vs. rural Alaska
A 5Mbps Fiber backbone Internet Connection versus a 5 Mbps Satellite backbone Internet Connection
Prepared by Doug Neal, June 12, 2008,

Fiber to the Home - 5Mbps download
With fiber to the home, how much does it cost a user to get a 5Mbps Internet connection? $42.99 per month
Please see attached Verizon pricesheet - 5Mbps/2Mbps for $42.99 per month in Portland, Oregon

Satellite Backbone, Rural Alaska Internet - 5Mbps download
With satellite backbone, how much does it cost a user to get a 5Mbps Internet connection in rural Alaska?

Satellite Transport - 1.5Mbps = T1,
It will take approximately 3 T1s (5Mbps/1.5Mbps = 3.3 T1s) to provide a user with a 5Mbps download
A T1 Satellite Circuit costs from $8,000 to $10,000 per month

1 Customer pays full cost of satellite transport	$8,000 x 3T1s = $24,000 per month $10,000 x 3T1s = $30,000 per month
10 Customers share the cost of satellite transport	$24,000/10 = $2,400 per month $30,000/10 = $3,000 per month
20 Customers share the cost of satellite transport	$24,000/20=$1,200 per month $30,000/20=$2,400 per month

To obtain a 5Mbps download speed, a customer would have to pay somewhere between $1,200 and $30,000 per month in satellite transport fees

To obtain DSL Internet service - Add $25 to cost of satellite transport