Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of

Application of Alaska Communications Internet LLC to Modify its C-Band Very Small Aperture Terminal Network License	)))	Call Sign: E170205 File No. SES-MOD-_____

Request for Waiver of the Temporary Filing Freeze in the 3.7-4.2 GHz Band

In connection with the above-captioned Application, Alaska Communications Internet hereby requests a waiver of the current temporary freeze on the filing of applications to license new earth stations in the 3.7-4.2 GHz band.[1]

Discussion

The Commission may waive its rules for "good cause shown."[2] Specifically, the Commission may waive its rules where the particular facts make strict compliance inconsistent with the public interest.[3] In addition, the Commission may take into account considerations of hardship, equity, or more effective implementation of overall policy on an individual basis.[4] Waiver is appropriate if special circumstances warrant a deviation from the general rule, and such deviation would better serve the public interest than strict adherence to the general rule.[5] In the specific context of the C-band filing freeze, the International Bureau has held it will assess

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1 *See* Public Notice, Temporary Freeze on Applications for New or Modified Fixed Satellite Service Earth Stations and Fixed Microwave Stations in the 3.7-4.2 GHz Band, 90-Day Window to File Applications for Earth Stations Currently Operating in the 3.7-4.2 GHz Band, DA 18-398 (rel. April 19, 2018) ("*Temporary Freeze Public Notice*"). *See also* Public Notice, GN Docket Nos. 17-183, 18-122, "International Bureau Announces 90-Day Extension of Filing Window, to October 17, 2018, to File Applications for Earth Stations Currently Operating in 3.7-4.2 GHz Band; Filing Options for Operators with Multiple Earth Station Antennas," DA 18-639 (rel. Jun. 21, 2018).

2 47 C.F.R. § 1.3.

3 *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990) ("*Northeast Cellular*").

4 *WAIT Radio v. FCC*, 418 F.2d 1153, 1157, (D.C. Cir. 1969), *affirmed by WAIT Radio v. FCC*, 459 F.2d 1203 (D.C. Cir. 1972), *cert. denied*, 409 U.S. 1027 (1972).

5 *Northeast Cellular*, 897 F.2d at 1166.

requests for waiver on a case-by-case basis and may be granted "upon a demonstration that the waiver will serve the public interest and not undermine the objectives of the Freeze."[6]

This waiver request amply meets the Commission's requirements. Indeed, the International Bureau has already acknowledged that the unique operational and deployment challenges in Alaska, together with public interest benefits, that support a waiver of the freeze. Specifically with respect to Alaska Communications Internet, the International Bureau has already found that a waiver to serve ten Kuspuk School District sites was justified in light of "(1) the unique operational conditions in remote portions of Alaska, (2) the importance of the services that [Alaska Communications Internet] provides to Alaskan villages, and (3) the limited scope of operations proposed."[7] In a similar waiver granted to GCI Communication Corp., the Bureau also cited the "the absence of viable alternatives" to C-band transport.[8] Those conditions similarly apply to the sites covered by this Application to an equal or greater degree.

A. Special Circumstances Warrant a Waiver of the C-band Temporary Freeze

1. Unique Operational and Deployment Challenges Make C-Band Satellite Services Essential in Alaska

The Commission has repeatedly recognized the array of unique challenges to deploying telecommunications and broadband facilities in Alaska. No other state in the nation faces the problem of connecting so many locations separated by such great vacant distances, forbidding

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[6] *Alaska Communications Internet LLC Request for Waiver of the Temporary Freeze on Applications for New or Modified Fixed Satellite Service Earth Stations in the 3.7-4.2 GHz Band*, IBFS File No. SES-MOD-20180626-01472, Call Sign: E170205, Order, DA 19-726 (rel. Aug. 1, 2019), at ¶ 4 ("*Alaska Communications Waiver Order*"); *GCI Communication Corp. Request for Waiver of the Temporary Freeze on Applications for New or Modified Fixed Satellite Service Earth Stations in the 3.7-4.2 GHz Band*, IBFS File No. SES-LIC-20180608-01392, Call Sign: E180787, Order, DA 19-725 (rel. Aug. 1, 2019), at ¶ 4 ("*GCI Waiver Order*").

[7] *Alaska Communications Waiver Order* at ¶ 5.

[8] *GCI Waiver Order* at ¶ 5.

climate, and physical barriers. In considering broadband deployment policy for the state, the Commission has recognized that "Alaska faces uniquely challenging operating conditions, and . . . national solutions may require modification to serve the public interest in Alaska."[9] It is therefore "important to ensure our approach is flexible enough to take into account the unique conditions in places like Alaska . . . , such as its remoteness, lack of roads, challenges and costs associated with transporting fuel, lack of scalability per community, satellite and backhaul availability, extreme weather conditions, challenging topography, and short construction season."[10]

Among other factors present to unique degree in Alaska:

- Lowest-in-the-nation population density. Alaska has a population of about 740,000 people, only slightly greater than that of the District of Columbia, yet the state encompasses about 1/6 of the nation's land area, larger than 22 other states combined.[11] Outside of the state's three population centers, Anchorage, Fairbanks, and Juneau, the state's population density falls to about one person for every two square miles.[12] It is economically prohibitive to deploy wireline broadband facilities to serve Alaska's small, rural and remote communities, given the small number of customers among which to spread the cost.

- Uniquely isolated communities. Of Alaska's 162 communities, some 86 percent are not connected to the state's road system.[13] These Bush communities are isolated

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[9] *Connect America Fund*, WC Docket No. 10-90, Report and Order and Further Notice of Proposed Rulemaking, FCC 11-161, 26 FCC Rcd 17663 (2011) ("*Transformation Order*"), at ¶ 507.

[10] *Id.* at ¶ 508. *See also, id.*at ¶ 101 (adopting special performance standards for areas with no terrestrial backhaul), ¶ 193 (recognizing that Alaska faces uniquely challenging operating conditions, and national solutions may require modification to serve the public interest in Alaska, including freezing support for price cap carriers in non-CONUS areas including Alaska, ¶ 481 (creating the Tribal Mobility Fund).

[11] *See* United States Census Bureau, "Population, Housing Units, Area, and Density: 2010 - United States--States and Puerto Rico," *available at:* https://www.census.gov/quickfacts/fact/note/US/LND110210 (visited Aug. 7, 2019) (showing the area of Alaska is greater than that of North Carolina, New York, Mississippi, Pennsylvania, Louisiana, Tennessee, Ohio, Virginia, Kentucky, Indiana, Maine, South Carolina, West Virginia, Maryland, Vermont, New Hampshire, Massachusetts, New Jersey, Hawaii, Connecticut, Delaware, Rhode Island – and the District of Columbia – combined).

[12] *Id.*

[13] Alaska Department of Commerce, *Alaska Mapping Business Plan: Integrating Mapping, Assessment, and Resilience Planning* (Sept. 2018), Appendix 2: "An Overview of Communities in Alaska," at 52 (*available at:* https://www.commerce.alaska.gov/web/dcra/PlanningLandManagement/RiskMAP/AlaskaMappingBusinessPlan.aspx).

geographically from infrastructure resources commonly available elsewhere in the state, and the nation as a whole. Most Bush communities cannot be accessed by road, nor are they connected to the state's power grid or communications network. To reach these communities, people, as well as goods and services, must arrive by plane, barge, ferry, snow machine, all-terrain vehicle, or other off-road transportation means. Their populations range from a few dozen to a few thousand individuals. In many cases, it would take hundreds of miles of terrestrial fiber to reach these communities, deployed along improbable routes through roadless wilderness or under frigid Arctic seas. It is logistically impossible to deploy such facilities to meet customer demands and, in the absence of terrestrial alternatives, it is vital that satellite services be made available.

- Forbidding climate and short construction season. Construction of broadband infrastructure in Alaska may be reliably possible for as few as three to four months each year. Outside of that "construction season," even routine maintenance and repair tasks are possible only intermittently, and may require a costly, multi-day commitment of personnel to travel by air, barge, ATV, or snow machine to the site of the trouble. Travel is frequently slowed or interrupted by adverse weather conditions, further delaying and raising the cost and hazard of such activities. Because of the logistical challenges and compliance requirements, planning begins months in advance of the construction season itself, often in the preceding autumn. In this case, it is too late to plan, obtain permits and equipment, and construct additional terrestrial transport facilities in the areas covered by this waiver request this year and, as discussed above, economically prohibitive in any event.

For all of these reasons, the Commission has explained that Alaska Communications "face[s] different operating conditions and challenges from those faced by carriers in the contiguous 48 states."[14] The Commission has thus created unique broadband deployment obligations for Alaska carriers that "account for the distinctive geographic and climate challenges of building and providing voice and broadband service in Alaska."[15] Some of the factors discussed above may individually be present in areas of the lower 48 states but, taken together over such a widespread area, they conspire to create a uniquely challenging environment for broadband deployment in Alaska.

[14] *Connect America Fund*, WC Docket No. 10-90, Order, FCC 16-143, 31 FCC Rcd 12086 (2016), at ¶ 3.

[15] *Id.* at ¶ 8; *see also Connect America Fund*, WC Docket No. 10-90, Report & Order and Further Notice of Proposed Rulemaking, FCC 16-115, 31 FCC Rcd 10139 (2016), at ¶ 1 (Commission policy must accommodate the "unique climate and geographic conditions of Alaska").

2. Terrestrial Transport Alternatives Are Lacking

Alternative connectivity options at the Alaska Bush sites proposed in this Application are extremely limited or nonexistent. They divide into three groups: (a) sites where no terrestrial connectivity is available; (b) sites where terrestrial connectivity is inadequate; and (c) one site served by terrestrial fiber, where the satellite connection provides vital network redundancy and resiliency.

a) Sites Lacking Terrestrial Transport

At seven (7) of the sites covered by this Application, satellite transport is the only available option for establishing communications with other areas of the state, nation, or world. These sites include: Chenega Bay (Chugachmiut Rural Health Clinic); Ambler, Deering, and Kivalina (OTZ Telephone Cooperative); False Pass (Silver Bay Seafood); and Akutan and Sand Point (Trident Seafoods).

Many of these villages are in remote coastal or island locations. Chenega Bay is on Evans Island in Prince William Sound, east of the Kenai Peninsula and deep within the Chugach National Forest. The nearest fiber – cable landing stations for the undersea fiber optic cables connecting Alaska to the lower 48 states – are in Seward and Whittier, each approximately 50 miles away. Reaching them would require construction of additional undersea cables and associated landing stations to connect Evans Island to mainland Alaska.

Similarly, Akutan, Sand Point, and False Pass are small island villages in the Aleutian Chain, within the protected habitat of the Steller Sea Lion. The nearest access to a terrestrial fiber optic cable is in Kodiak, which is between 350 and 600 miles to the northeast. Kodiak itself is an island community in the Gulf of Alaska; to interconnect with the undersea cable serving Kodiak Island would require construction of undersea cable along the entire route.

Finally, Ambler, Deering, and Kivalina are all small communities in northwest Alaska. The nearest fiber connectivity is at the Quintillion's submarine cable landing station in Kotzebue, Alaska. These three sites are between 55 and 130 miles in a straight line from the Quintillion landing station. To reach that point, in addition to terrestrial fiber construction, Kivalina and Deering would require deployment of substantial lengths of undersea cable and the associated cable landing stations needed to cross open stretches of the Arctic Ocean.[16]

Construction of new terrestrial transport facilities to reach these communities, let alone scalable fiber optic connections, would be technically and logistically infeasible, as well as economically prohibitive. The communities where these sites are located range in population from a few dozen to just over 1000 people, the majority of whom are Alaska natives, as shown below:[17]

[16] For a detailed discussion of the challenges of constructing such facilities, *see* Brian "Butch" Webb and Zachary Casey, "Shore Approaches for Fiber Optic Cables in Arctic Construction," *Underground Construction* (Mar. 2017) (discussing the specialized horizontal directional drilling ("HDD") techniques required in the Arctic, because "the known risk from deep ice scour in shallow water would require burial depths that are unachievable with standard methods. Additionally, the large volume of material removed and the consequent stockpiling of the spoil presents an environmental problem in the Arctic that is not acceptable. The HDD technique eliminates this problem and can extend the shore approach further out to sea without the need for any sea bottom plowing or excavation of fragile arctic coastline."), *available at:* https://ucononline.com/magazine/2017/march-2017-vol-72-no-3/features/shore-approaches-for-fiber-optics-cable-in-arctic-conditions; Environmental Assessment, TERRA Southwest Broadband Telecommunications Project (April 2011) (discussing logistical and environmental challenges of constructing telecommunications facilities in southwest Alaska and rejecting a 100% fiber alternative proposal), *available at:* https://www.gc.noaa.gov/documents/alaska-eis.pdf. https://data.census.gov/cedsci/table?q=Population&hidePreview=true&table=S0601&tid=ACSST5Y2017.S0601&lastDisplayedRow=46&g=1600000US0241830,0239300,0218510,0209600,0239960,0254700,0255140,0268230,0201970&vintage=2017&layer=place&cid=S0101_C01_001E&tm=true.

[17] *See* United States Census Bureau Data, *available at:* http://data.census.gov.

United States Census Bureau

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Search / Tables / S0601

SELECTED CHARACTERISTICS OF THE TOTAL AND NATIVE POPULATIONS IN THE UNITED STATES

Survey/Program: American Community Survey TableID: S0601 Product: 2017: ACS 5-Year Estimates Subject Tables

Data Notes | 7 Geographies | Years | Topic | Survey | Code | Hide | Filter | Sort | Transpose Table | Margin of Error | Restore Layout | Download | Print | Share | More Data | Map

	Akutan ANVSA, AK	Ambler ANVSA, AK	Chenega ANVSA, AK	Deering ANVSA, AK	False Pass ANVSA, AK	Kivalina ANVSA, AK	Sand Point ANVSA, AK
	Total	Total	Total	Total	Total	Total	Total
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Total population	782	299	41	152	68	678	1,332
RACE AND HISPANIC OR LATINO ORIGIN							
One race	99.0%	99.0%	100.0%	100.0%	100.0%	99.4%	87.8%
White	15.5%	3.3%	26.8%	1.3%	42.6%	5.8%	16.3%
Black or African American	16.6%	0.0%	0.0%	0.0%	0.0%	0.0%	1.7%
American Indian and Alaska Native	16.2%	95.3%	73.2%	92.1%	50.0%	93.7%	44.6%
Asian	33.9%	0.0%	0.0%	6.6%	2.9%	0.0%	20.3%
Native Hawaiian and Other Pacific Islander	1.8%	0.3%	0.0%	0.0%	0.0%	0.0%	2.1%
Some other race	15.0%	0.0%	0.0%	0.0%	4.4%	0.0%	2.9%
Two or more races	1.0%	1.0%	0.0%	0.0%	0.0%	0.6%	12.2%
Hispanic or Latino origin (of any race)	18.7%	0.0%	0.0%	0.0%	4.4%	0.6%	8.3%
White alone, not Hispanic or Latino	12.9%	3.3%	26.8%	1.3%	42.6%	5.2%	15.2%

The telecommunications industry has not developed any technology or techniques that support the economic deployment of fiber over vast distances of roadless wilderness and open ocean to reach such small communities. Even after receiving more than $88 million in federal financial assistance from the Rural Utilities Service under the 2009 Broadband Initiatives Program ("BIP"), GCI Communication Corp. ("GCI"), for example, was able only to construct a series of microwave links in western Alaska, and could not deploy a network composed entirely of fiber.[18]

b) Sites Served only by Terrestrial Microwave Service

Six of the sites covered by this Application are located in the vicinity of the route taken by the microwave portion of the TERRA system, operated by GCI. These sites include: Naknek (Trident Seafoods); as well as Noorvik, Kiana, Buckland, Selawik, and Noatak (OTZ Telephone

[18] TERRA Environmental Assessment, *supra* n.16, at page 1-4 (noting that RUS awarded the TERRA-SW Project approximately $88 million in federal financial assistance, split roughly equally between a $44 million grant and a $44 million loan).

Cooperative). The TERRA microwave network represents the only source of terrestrial connectivity in the area, but TERRA is not a viable terrestrial transport alternative for these sites.

First, based on experience of Alaska Communications Internet, the microwave portion of the TERRA system is congested, oversubscribed, and unreliable. It covers over eighty Bush communities in western Alaska, and simply lacks the capacity to carry all of the broadband traffic generated by all of them, a condition made worse by adverse weather that prevails throughout the long Alaskan winter.[19] In three instances, Alaska Communications Internet has purchased capacity on the TERRA microwave system to serve as a backup redundant connection for its satellite-based service to rural health care providers. In all three cases, the connections are unstable, and do not consistently deliver the full bandwidth called for in the company's service contract with GCI. Currently, as a result of these service quality issues, Alaska Communications does not, and cannot in good faith, use TERRA connectivity to support primary service to its customers.

Indeed, GCI itself has acknowledged the issue, explaining that its "microwave systems are particularly susceptible to extreme weather, such as the freezing and icing that occur during the Alaskan winter and spring months (roughly anywhere from September to June) and result in significant damage to the microwave radio antennas and wave guides, leading to link degradation and service outages."[20] The unreliability of the TERRA microwave links formed one of the principal reasons supporting the International Bureau's recent grant of GCI's request for a waiver of the C-band filing freeze.[21]

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[19] *See Alaska Communications Waiver Order* at ¶ 5.

[20] *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, GN Docket No. 18-122, Comments of GCI Communications Corp. (filed Aug. 7, 2019), at 9.

[21] *GCI Waiver Order* at ¶ 5.

Second, the cost of the necessary middle mile capacity on TERRA would far exceed that of equivalent satellite bandwidth. Indeed, OTZ has previously noted that it is constrained in its ability to offer affordable broadband, explaining that, "[d]ue to high cost of middle mile transport, broadband speeds are not affordable to most of OTZ's customers."[22] Indeed, based on the rates published by GCI for capacity on TERRA,[23] the cost of middle mile backhaul to OTZ, if Alaska Communications Internet were to provide the service in this way, would be ***between two and three times the cost of using the C-band satellite platform*** and would result, as discussed above, in inferior service, despite the increase in cost.[24]

Third, like the sites that are not served by terrestrial facilities at all, discussed above, these small, primarily Native Alaskan villages cannot support new deployment of fiber. As shown below, these communities range in size from approximately 200-800 people, making it impossible to justify the high cost and logistical challenges of fiber deployment to reach them.[25]

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[22] *Ex parte* Letter from Christine O'Connor, Alaska Telephone Association, WC Docket No. 10-90, at 18 ("OTZ Performance Obligations").

[23] GCI, "TERRA Product Descriptions and Pricing," eff. May 17, 2019 (*available at:* https://www.gci.com/-/media/files/gci/regulatory/20190517gciterrapostingeffective.pdf).

[24] The Commission has previously taken note of the unusual case of the Alaska Bush, where terrestrial connectivity is more expensive than equivalent satellite bandwidth. *See Promoting Telehealth in Rural America*, WC Docket No. 17-310, Draft Report & Order, FCC-CIR1908-03 (rel. July 11, 2019), at ¶ 84 ("[I]n Alaska for funding year 2017, health care providers reported, on the FCC Form 466, rural rates ranging from $30,000 to $40,500 for a 10 Mbps satellite service per month. In comparison, rural rates for a terrestrial-based 10 Mbps MPLS service in Alaska, in many instances, were between $60,000 and $75,000 per month." (*available at:* https://docs.fcc.gov/public/attachments/DOC-358434A1.pdf). This Draft Order is slated for consideration at the Commission's August 1, 2019 Open Agenda Meeting.

[25] *See* United States Census Bureau Data, *available at:* https://data.census.gov/cedsci/table?q=&hidePreview=true&table=S0601&tid=ACSST5Y2017.S0601&lastDisplayedRow=46&g=1600000US0239300,0209600,0254700,0255140,0268230,0252060&vintage=2017&layer=place&cid=S0101_C01_001E&tm=true.

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	Buckland city, Alaska	Kiana city, Alaska	Naknek CDP, Alaska	Noatak CDP, Alaska	Noorvik city, Alaska	Selawik city, Alaska
	Total	Total	Total	Total	Total	Total
	Estimate	Estimate	Estimate	Estimate	Estimate	Estimate
Total population	627	284	509	424	579	813
RACE AND HIS...						
One race	99.8%	95.4%	88.0%	98.3%	98.6%	98.2%
White	1.8%	3.5%	44.6%	0.9%	4.8%	1.4%
Black or Af...	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%
American I...	97.3%	90.8%	39.7%	96.9%	93.8%	96.8%
Asian	0.2%	1.1%	1.8%	0.0%	0.0%	0.0%
Native Ha...	0.0%	0.0%	0.6%	0.0%	0.0%	0.0%
Some othe...	0.6%	0.0%	1.4%	0.0%	0.0%	0.0%
Two or more...	0.2%	4.6%	12.0%	1.7%	1.4%	1.8%
Hispanic or ...	0.6%	0.0%	2.9%	0.0%	0.0%	0.0%
White alone, ...	1.8%	3.5%	43.4%	0.9%	4.8%	1.4%

These villages lie between 25 and 75 miles from the nearest terrestrial fiber connections, often across stretches of open Arctic waters. For the reasons discussed above, these distances are too great to permit deployment of new fiber to bridge the gap.

c) Sites Served by Fiber Optic Cable

Two of the sites covered by this Application are located near terrestrial fiber facilities, namely Kotzebue (OTZ Telephone Cooperative) and Iliamna (Pebble Partnership). The presence of nearby fiber at these sites, however, does not alleviate the need for C-band satellite service.

Kotzebue, despite being the site of a landing station for the Quintillion undersea fiber, still requires access to C-band satellite middle mile transport. As the largest community in the area, Kotzebue is a regional hub. While primary connectivity for its residents will be provided using the Quintillion fiber, the C-band satellite connection will improve network reliability and

resilience by providing an important redundant backup connection to Anchorage. Should the undersea fiber suffer damage, breakage, or other failure, it could be many months before a cable ship could locate and repair the damage.[26] There are only a limited number of ships in the world that can lift and repair damaged submarine fiber optic cables. None are routinely stationed in the Arctic, meaning any repair would involve a lengthy journey to the Arctic Ocean. And, the repair could likely be completed only in summer, when the weather is more favorable and the sea is not frozen. C-band satellite backup connectivity provides an important safeguard against the impact of such calamities.

In the case of Iliamna, although the site is near the route taken by the fiber portion of GCI's TERRA network, the cost is prohibitively high for this service. GCI employs distance-insensitive postalized rates for service on TERRA, meaning that, even on the fiber portion of the network, the cost of terrestrial connectivity would be the same as it is on the microwave portion, discussed above. Thus, if Alaska Communications Internet were to provide the service in that way, the cost of the middle mile backhaul would remain at ***between two and three times the cost of using the C-band satellite platform*** proposed here. Given the extreme differential in the price of satellite and terrestrial fiber transport at the site, it would be economically impossible to provision the service at an affordable rate to the customer.

3. Advantages of the C-Band Satellite Platform over other Spectrum Allocated for Fixed Satellite Service

The advantages of C-band satellite service as compared to other satellite bands, are well-documented before the Commission. In its filings in the Commission's *Expanding Flexible Use*

[26] *See* Pat Forgey, "5.9 Earthquake Causes Telecom Outage in Southeast Alaska," *Anchorage Daily News* (Updated Sept. 28, 2016) (reporting submarine fiber optic cable cut caused by earthquake and potentially lengthy repair process), *available at:* https://www.adn.com/alaska-news/article/59-earthquake-causes-telecom-outage-southeast-alaska/2014/07/26/.

of the 3.7 GHz to 4.2 GHz Band docket, for example, Alaska Communications Internet has detailed the superior performance of C-band at Alaska's high northerly latitudes, particularly in the poor weather conditions and heavy precipitation that are all too common in the state.[27] Indeed, in granting a recent waiver of the C-band filing freeze, the International Bureau has accepted that, "Ku- and Ka-band options are not realistic alternatives because of limited satellite coverage and susceptibility to rain fade in poor weather conditions."[28]

As Alaska Communications explained in recent filings:

- C-band satellite coverage is plentiful in Alaska, as a result of the large footprint offered by C-band satellite beams. Ku-band and Ka-band satellites often employ spot beams that are targeted to more economically important markets, such as large cities in the lower 48 states or transoceanic transport corridors. In higher frequency bands, a spot beam may be aimed toward Anchorage at best, with any additional coverage merely incidental to that target.[29]
- C-band frequencies support superior performance at the low elevation angles required as a result of Alaska's high northerly latitude, where earth station antennae often must be pointed lower than 10 degrees above the horizon.[30]
- C-band frequencies suffer far less attenuation from poor weather conditions ("rain fade") and other obstructions than services that rely on Ku-, Ka-, or other higher bands. The low elevation angles required in Alaska make satellite service more

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[27] *See* Alaska Communications Internet, LLC, Section 1.65 Letter, File No. SES-MOD-20180626-01472 (filed July 9, 2019), at 1-2; *Expanding Flexible Use of the 3.7 GHz to 4.2 GHz Band*, GN Docket No. 18-122, *Ex Parte* Letter from Richard R. Cameron, Counsel to Alaska Communications (filed June 21, 2019), at 1; *Expanding Flexible Use of the 3.7 GHz to 4.2 GHz Band*, GN Docket No. 18-122, Comments of Alaska Communications Internet, LLC (filed Oct. 29, 2018), at 8-11) ("Alaska Communications C-Band Comments").

[28] *Alaska Communications Waiver Order* at ¶ 5; *see also GCI Waiver Order* at ¶ 6 ("Ku- and Ka-band options are not realistic alternatives for technical reasons: specifically, due to limited lower link availability resulting from propagation conditions and the higher link margins required for Ku- or Ka-band fading.").

[29] *See Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, GN Docket No. 18-122, Comments of Alaska Communications at 8-9 (*citing* ViaSat, Inc., Call Sign E110015, SES-LIC-20110211-00150, "FCC International Bureau Presentation" (Apr. 11, 2018), at 9 (ViaSat-1 Ka-band spot beam covering Anchorage), *available at:* https://licensing.fcc.gov/myibfs/download.do?attachment_key=910492).

[30] *Id.* at 9.

> sensitive to these attenuation issues, even from distant precipitation occurring along the line of sight to the satellite, than locations where the satellite is higher overhead.[31]

Given the state's extreme northerly latitudes and harsh weather, the C-band thus offers better performance, availability, and coverage than other satellite spectrum bands, making it far superior to other spectrum for serving customers in Alaska. Over much of the year, dangerous and unpredictable conditions make it difficult at best for Alaska Communications Internet network technicians to reach remote customer sites, making such service reliability a paramount concern.

Reliable communications are particularly important in the case of schools, libraries, and rural healthcare providers, which use services supported by the Commission's E-rate and Rural Health Care Universal Service Support Mechanisms for the benefit of rural and remote Alaskan communities. Alaska Communications Internet uses C-band satellite earth stations to provide E-rate and RHC-supported services, including some that may be served using the earth stations proposed in this application.

More broadly, Alaska Communication Internet's customers, which include a broad array of rural health care providers, the Federal Aviation Administration, other federal and state government entities, public safety first responders, Alaska native-owned economic development enterprises, among others, are well aware that C-band services are consistently more stable and perform more reliably than Ku- or Ka-band alternatives. As a result, these customers routinely insist that their services be provisioned using C-band connectivity, and will specifically choose C-band services over other options.

[31] *Id.* at 11.

B. A Waiver Would Serve the Public Interest and Would Not Undermine the Objectives of the Temporary Freeze

Grant of this waiver request will serve the public interest by allowing Alaska Communications Internet to further expand its network, create an additional competitive alternative for customers in the Alaska Bush, an undeserved area with little access to telecommunications connectivity. Disproportionately, Bush villages are home to vulnerable communities of Alaska Natives, for whom equal opportunities offered by broadband are particularly critical.

The Chairman recently reaffirmed that closing the Digital Divide in this nation is the Commission's "top priority."[32] The earth stations proposed here represent important steps to expand (and in the case of the OTZ sites, maintain) affordable access to broadband connectivity for Alaska's uniquely isolated communities, supporting a range of services to businesses, residential customers, and community anchor institutions. The International Bureau has previously cited the importance of the services that these facilities will support when granting previous waivers of the C-band filing freeze.[33] Alaska Communications Internet will use the earth stations proposed here to serve a rural healthcare provider (at Chenega Bay), provide middle mile backhaul for mobile and fixed voice, data, Internet access, 911 emergency, and all other traffic generated by residential and business customers of the local exchange carrier serving these communities; and key engines of economic opportunity and growth in remote Bush communities (Pebble Partners, Trident Seafoods, Silver Bay Seafood).

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[32] *Rural Digital Opportunity Fund*, WC Docket No. 19-126, Notice of Proposed Rulemaking, FCC 19-77 (rel. Aug. 2, 2019), Statement of Chairman Pai, ¶ 1.

[33] *Alaska Communications Waiver Order* at ¶ 5; *GCI Waiver Order* at ¶ 7 ("[T]hese satellite links will support critical community services. In addition to supporting mobile wireless voice and broadband services, the links will support other critical community services, including telehealth services to support health clinics in both Chevak and Hooper Bay, school access services for the Kashunamiut and Lower Yukon School Districts, wireless 911 routing, and as a backup to wireline 911 services.")

Moreover, a waiver of the freeze would not undermine the purpose of the freeze. The Commission imposed the freeze "to preserve the current landscape of authorized operations in the 3.7-4.2 GHz band pending Commission action as part of its ongoing inquiry into the possibility of permitting mobile broadband use and more intensive fixed use of the band,"[34] with particular focus on terrestrial "5G" mobile broadband service. The freeze was intended more specifically to prevent the filing of speculative earth station applications in anticipation of potential future actions in the band by the Commission.[35]

These sites are located in remote areas of the Alaska Bush, far from any urban areas or significant population centers. As a result, as with the other recent waivers of the freeze granted by the International Bureau, a grant of this waiver "will result in no more than a *de minimis* change to the existing landscape of authorized operations in the 3.7-4.2 GHz band."[36] As such, it is highly unlikely that grant of this application will hinder the Commission's analysis of additional mobile and fixed use of this band, particularly given the overwhelming support expressed in the record for excluding Alaska from any reallocation of this spectrum to terrestrial mobile use.

Moreover, these earth stations are not speculative. Rather, these earth stations illustrate the uniquely challenging deployment conditions in Alaska that "create a demand for satellite services like ACI offers in remote regions."[37] Indeed, many are already operating under previous grants of Special Temporary Authority. As such, they are "a necessary extension of existing services provided by [Alaska Communications Internet] in remote parts of Alaska."[38]

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[34] Temporary Freeze Public Notice at 1.
[35] *Alaska Communications Waiver Order* at ¶ 6.
[36] *Id.*; *see also GCI Waiver Order* at ¶ 8.
[37] *Alaska Communications Waiver Order* at ¶ 5.
[38] *Id.* at ¶ 6.

Alaska Communications Internet currently operates satellite earth stations at multiple locations in the Alaska bush with no reported cases of interference to terrestrial licensees. There is no reason to expect a different result here. Alaska Communications Internet has limited its usage in the C-band to the minimum amount of spectrum necessary to support its customers, in order to minimize any potential interference with other authorized spectrum users in the band. (Potential interference cases, in any event, have arisen primarily arisen in the 5.925-6.425 GHz uplink portion of the band, not the 3.7-4.2 GHz downlink spectrum). These operations were deemed compatible with terrestrial operations and entered into frequency coordination databases as of the date of the filing of this application. Thus, there is no potential for any adverse impact or other prejudice to terrestrial systems or services from grant of the requested waiver.

This waiver is particularly critical in the case of the OTZ sites, because the satellite that currently provides the backhaul services requested here is past the end of its useful life, and is in the process of being retired. As such, OTZ is actively migrating away from its existing middle mile legacy solution due to the impending end-of-life of the satellite space station currently supporting those services. Alaska Communications Internet is working with OTZ to support the transition and ensure no gap in its services to these local communities. The villages served by OTZ are not accessible by the Alaska road system (only by boat, airplane or snow machine), and depend on OTZ for essential connectivity. Thus, the uninterrupted delivery of services to these remote villages relies heavily on Alaska Communications Internet's ability to provide timely satellite backhaul, as proposed herein.

Conclusion

For the foregoing reasons, Alaska Communications Internet requests that the International Bureau grant a waiver of the temporary filing freeze on applications to license new satellite earth stations in the 3.7-4.2 GHz band. The broadband services that will be supported by these earth stations are particularly important in the Alaska Bush, where no adequate terrestrial connectivity alternative exists. Disproportionately, these Bush villages are home to vulnerable communities of Alaska Natives, for whom the enhanced civic, cultural, educational, economic, and healthcare opportunities offered by broadband are particularly critical. Without a grant of this waiver, Alaska Communications Internet will be unable to serve these additional sites and these benefits will be lost to these communities.