

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

In the Matter of
Petition of General Communication, Inc. for
Waiver of Certain Channelization and Other
Restrictions on Common Carrier Fixed Point-to-
Point Operations Between 6425 and 7125 MHz
WT Docket No. 16-209

MEMORANDUM OPINION AND ORDER

Adopted: October 21, 2016

Released: October 21, 2016

By the Chief, Broadband Division, Wireless Telecommunications Bureau:

I. INTRODUCTION

1. In this Memorandum Opinion and Order, we grant, on a limited basis, the request for waiver filed by General Communication, Inc. (GCI) of certain channelization and other limitations in the 6425-6525 MHz, 6525-6875 MHz, and 6875-7125 MHz bands (Upper 6 GHz bands). As discussed further below, this waiver is limited to the specific sites in GCI’s existing network identified in Appendix A of GCI’s amended waiver request, and listed in the attachment to this Order. We find that these waivers are consistent with the underlying purposes of the rules because GCI has demonstrated it would be unduly burdensome to increase capacity using fiber or another spectrum band; and to use the Upper 6 GHz band for wireless backhaul, GCI has no reasonable alternative to seeking waivers of the channelization and other restrictions to increase capacity of its sites in order to serve its customers in rural Alaska. Further, there are no Local Television Transmission Service (LTTS), Private Operational Fixed Point-to-Point Microwave Service (POFS), or Cable TV Relay Service (CARS) operations in the 6425 – 6525 MHz band centered around permanent locations in Alaska where GCI has operations.

II. BACKGROUND

2. The 6425-6525 MHz band is currently available for assignment to mobile LTTS, POFS, Broadcast Auxiliary Service (BAS), and CARS stations. When the Commission allowed broadcasters, networks and cable operators to access the 6425-6525 MHz band on a co-primary basis in 1987, it observed that its action would “provide added flexibility in establishing microwave links for mobile television pick-up. This flexibility is needed in some urban areas where the 1.9 and 6.8 GHz bands are heavily utilized and demands are increasing.” According to Commission licensing records, the 6425-6525 MHz band is not

1 Amended Petition of General Communication, Inc., for Waiver of Certain Channelization and Other Restrictions on Common Carrier Fixed Point-to-Point Operations Between 6425 and 7125 MHz (filed May 3, 2016) at App. A. A copy of the list of sites appears in Appendix A of this item.

2 The 6425-6525 MHz band allows mobile operations and is shared with mobile stations licensed pursuant to Parts 74 and 78 of the Commission’s Rules. See 47 CFR § 101.147(j). See also 47 CFR §§ 74.602(i), 78.18(a)(5), 101.101, 101.147(j), 101.803.

3 See Establishment of a Spectrum Utilization Policy for the Fixed and Mobile Services Use of Certain Bands Between 947 MHz and 40 GHz, GEN. Docket No. 82-334, Third Report and Order, 2 FCC Rcd 1050, 1054, para. 29 (1987).

assigned to any facilities that operate around permanent locations in Alaska where GCI operates.<sup>4</sup>

3. The 6525-6875 MHz band is currently available for terrestrial Fixed Services (FS).<sup>5</sup> In 2010, the Commission provided terrestrial FS licensees in the band with authority to operate channels with bandwidths as wide as 30 megahertz, making available an additional source of spectrum for high-capacity microwave links.<sup>6</sup> In 2011, the Commission permitted FS operators to share the 6875-7125 MHz band with Fixed Mobile and BAS and CARS and adopted rules to protect BAS and CARS operations.<sup>7</sup> The Commission permitted FS facilities only in areas where TV pickup operations are not licensed.<sup>8</sup> To avoid interference between FS operations and TV pickup operations, the Commission prohibited FS paths from crossing the service areas of TV pickup authorizations and required FS to coordinate with all relevant licensees, including TV pickup authorizations, pursuant to the formal Part 101 coordination procedures.<sup>9</sup> FS operations are also not permitted to operate on frequencies that are reserved for itinerant BAS use pursuant to the provisions in Section 74.24 of the Commission's rules.<sup>10</sup> The Commission permitted FS licensees to utilize 5, 8.33, 12.5, and 25 megahertz channels in the band.<sup>11</sup>

4. On April 15, 2016, GCI filed a petition requesting waivers of certain channelization and other limitations in the 6425–6525 MHz, 6525–6875 MHz, and 6875–7125 MHz bands to substantially increase the capacity of TERRA, GCI's rural broadband system (Waiver Request).<sup>12</sup> GCI seeks authorization to deploy common carrier fixed point-to-point microwave service using wider, 60 MHz channels across the three Upper 6 GHz sub-bands in a narrowly defined area of rural Alaska.<sup>13</sup>

5. Specifically, GCI requests that the FCC waive the following rules with respect to the current TERRA microwave sites or planned sites directly connected to the TERRA network identified at Appendix A:<sup>14</sup> (1) 47 CFR § 101.101 to permit GCI to use the 6425–6525 MHz band for common carrier fixed point-

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<sup>4</sup> There are 22 licenses that are authorized to use this band nationwide; however, given the remote location of GCI's proposed facilities we consider it unlikely that any of these licensees will need to operate mobile stations within the vicinity of GCI's fixed links. We note that GCI has committed to work closely with a frequency coordinator, under the existing coordination procedures, to prevent interference with other licensees and expect that GCI would resolve any potential interference conflicts with any of these existing licensees if they are currently operating in the vicinity of GCI's paths. In the unlikely event that these licensees do need to operate near GCI's paths in the future, after GCI is authorized, they would be required to coordinate their operation under the provisions of Section 101.103 of the Commission's rules.

<sup>5</sup> See 47 CFR § 101.147(a), (k).

<sup>6</sup> *Amendment of Part 101 of the Commission's Rules to Accommodate 30 Megahertz Channels in the 6525-6875 MHz Band*, Report and Order, 25 FCC Rcd 7760, 7767, para. 16 (2010).

<sup>7</sup> *Amendment of Part 101 of the Commission's Rules to Facilitate the Use of Microwave for Wireless Backhaul and Other Uses and to Provide Additional Flexibility to Broadcast Auxiliary Service and Operational Fixed Microwave Licensees*, Report and Order, 26 FCC Rcd 11614, 11619, para. 9 (2011) (*2011 Part 101 Update Report and Order*).

<sup>8</sup> *2011 Part 101 Update Report and Order*, 26 FCC Rcd at 11623, para. 16.

<sup>9</sup> *Id.* at 11625, para. 23.

<sup>10</sup> Specifically, the Commission's rules do not provide fixed microwave channels between 6975 and 7025 MHz. See 47 CFR § 101.147(l).

<sup>11</sup> *2011 Part 101 Update Report and Order*, 26 FCC Rcd at 11628, para. 29.

<sup>12</sup> Petition of General Communication, Inc., for Waiver of Certain Channelization and Other Restrictions on Common Carrier Fixed Point-to-Point Operations Between 6425 and 7125 MHz (filed April 15, 2016). On May 3, 2016, GCI filed an amended petition correcting the list of existing TERRA backbone locations found in Appendix A. GCI did not make any other substantive modifications.

<sup>13</sup> Waiver Request at 1.

<sup>14</sup> We are acting on GCI's waiver request only with respect to the specific sites listed in Appendix A of the Waiver Request (as amended on May 3, 2016). See Section IV, *infra*, for an explanation of the process by which GCI may

(continued...)

to-point service (Part 101, Subparts C & I); (2) 47 CFR § 101.109(c) to allow GCI to use 60-MHz-wide channels in frequency bands 6425 to 6525 MHz, 6525 to 6875 MHz, and 6875 to 7125 MHz; and (3) 47 CFR §§ 101.147(j)-(l) “to allow GCI to use an efficient, uniform 60 MHz channelization scheme, including channels that span band boundaries between the 6425–6525 MHz, 6525–6875 MHz, and 6875–7125 MHz bands.”<sup>15</sup>

6. GCI states that the Commission’s Lower 6 GHz rules currently allow eight 60 MHz channels of common carrier fixed point-to-point microwave service across a single 500 MHz spectrum band (5925–6425 MHz), consistent with ITU-R Rec. F-384.<sup>16</sup> Instead of a single continuous band that mirrors the Lower 6 GHz band, GCI states that the Commission’s Upper 6 GHz plan creates three separate bands (6425–6525 MHz; 6525–6825 MHz; and 6825–7125 MHz), the first of which is not available for common carrier microwave service under 47 CFR Part 101, subpart I, and none of which allows 60 MHz channels.<sup>17</sup> GCI contends that the current Upper 6 GHz band plan will significantly and unnecessarily limit its ability to bring broadband to currently unserved or underserved communities and to deliver the low-latency, high-speed connections demanded by consumers, schools, and clinics, as usage grows.<sup>18</sup>

7. GCI asserts that a geographically-limited waiver to allow it to use contiguous 60 MHz channels across the three Upper 6 GHz sub-bands, enabling GCI to expand capacity on the TERRA network by adding more capacity with fewer radios, would allow GCI to avoid the need for extensive new construction that, because of Alaska’s unique conditions, would be infeasible.<sup>19</sup> GCI states that it has identified no other operators in the Upper 6 GHz bands near the TERRA backbone sites that would be affected by the proposed waiver.<sup>20</sup> Further, GCI asserts that the requested waiver will advance the public interest by allowing GCI to efficiently use otherwise idle spectrum and increase middle-mile broadband capacity in rural Alaska by almost 40% (7.045 Gbps) over what is achievable pursuant to the Commission’s current rules.<sup>21</sup> GCI states that such an increase would be greater than the current capacity of its entire TERRA network.<sup>22</sup>

8. On June 30, 2016, the Wireless Telecommunications Bureau (Bureau) issued a Public Notice seeking comment on GCI’s waiver request.<sup>23</sup> Two parties filed initial comments in response to the Public Notice. The Alaska Rural Coalition (ARC) generally “supports efforts to utilize Alaska’s spectrum

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seek identical waivers for “new sites that connect directly to the TERRA network.” See Waiver Request at 15 n.26. See also GCI Reply at 2 (seeking “authorization...in the narrowly defined area of rural Alaska that covers current TERRA microwave sites and microwave paths directly connected to those sites”).

<sup>15</sup> Waiver Request at 12.

<sup>16</sup> *Id.*

<sup>17</sup> *Id.*

<sup>18</sup> *Id.* at 17. GCI states that by 2018 it will “ring” TERRA by constructing two additional mountaintop repeater microwave sites between Galena and Dime to create a continuous, unbroken network. Ringing the system, GCI states, will improve reliability and effectively double backbone capacity, providing all traffic with two physical routes back to GCI’s interconnection point in Anchorage and to the closest Tier 1 Internet POPs in Seattle or Portland. Waiver Request at 9. Despite these efforts, GCI claims that current traffic projections will exhaust TERRA’s capacity before 2020. *Id.* at 10.

<sup>19</sup> *Id.* at 12-13.

<sup>20</sup> *Id.* at 15.

<sup>21</sup> *Id.* at 2.

<sup>22</sup> *Id.*

<sup>23</sup> *Wireless Telecommunications Bureau Seeks Comment on General Communication, Inc.’s Request for Waiver of Certain Requirements in the Upper 6 GHz Bands*, Public Notice, WT Docket No. 16-209, 31 FCC Rcd 7231 (WTB BD 2016).

resources more efficiently” but seeks clarity regarding the geographic scope of GCI’s waiver request and expresses concern about congestion resulting from GCI’s occupation of the entirety of the 6 GHz spectrum in GCI’s service area.<sup>24</sup> Further, the ARC requests that to the extent the Bureau grants the waivers sought by GCI, those waivers be granted on a carrier-neutral basis.<sup>25</sup> In addition, Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS) stated that it “has no objection to the requested waivers” so long as GCI follows standard coordination protocols.<sup>26</sup> It argues that GCI did not seek in its waiver request a waiver of the Commission’s rules reserving fixed use of the channels between 6975 and 7025 MHz, however.<sup>27</sup> Therefore, EIBASS argues that 6975-7025 MHz (TV BAS Channels B5 and B6) should remain unavailable for GCI’s use.<sup>28</sup>

9. Three parties filed reply comments. AT&T filed in support of GCI’s waiver request.<sup>29</sup> AT&T agrees with GCI’s characterization of the challenges of building communications infrastructure in Alaska and supports the ARC’s proposal to extend GCI’s waiver request to all carriers serving rural and remote Alaska.<sup>30</sup> EIBASS states that even if the Commission granted GCI’s waiver requests, GCI and other carriers would still be prohibited from using the 7 GHz TV BAS band for fixed, point-to-point microwave services because of the “area preclusion caused by TV Pickup Station WQRU451.”<sup>31</sup> GCI filed in support of its own Waiver Request. GCI states that the Commission should not expand the pending Waiver Request to make it carrier-neutral, as the ARC proposes, nor should the Commission broaden the request to cover a larger geographic area beyond the “geographically limited waiver” that GCI requested.<sup>32</sup> In response to EIBASS’s comments, GCI reiterates that access to the 50 megahertz of contiguous spectrum from 6975-7025 MHz is covered by its waiver request and critical to the success of GCI’s proposal to expand coverage in rural Alaska.<sup>33</sup> EIBASS filed an *ex parte* in response to GCI’s reply.<sup>34</sup> In the response, EIBASS reiterates its arguments that GCI did not request a waiver of Section 101.147(a), Note 34 of the Commission’s rules and, contrary to GCI’s contention, EIBASS states that 7 GHz TV Pickup station WQRU451 is authorized for the continental United States in the 6,875-7,125 MHz TV BAS band.<sup>35</sup> Subsequently, EIBASS and GCI filed a total of three additional *ex partes*.<sup>36</sup>

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<sup>24</sup> ARC Comments at 2, 5-7.

<sup>25</sup> *Id.* at 2.

<sup>26</sup> EIBASS Comments at 1.

<sup>27</sup> *Id.* at 1-3.

<sup>28</sup> *Id.* at 3.

<sup>29</sup> AT&T Reply at 2.

<sup>30</sup> *Id.* at 1-2.

<sup>31</sup> EIBASS Reply at 3.

<sup>32</sup> GCI Reply at 1-2.

<sup>33</sup> *Id.* at 4-7.

<sup>34</sup> Letter from Dane E. Ericksen & Richard Rudman, EIBASS, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 16-209 (filed August 3, 2016) (EIBASS Aug. 3, 2016 *Ex Parte*).

<sup>35</sup> *Id.* at 1.

<sup>36</sup> Letter from Paul Margie, Counsel to GCI, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 16-209 (filed August 17, 2016) (GCI Aug. 17, 2016 *Ex Parte*); Letter from Paul Margie, Counsel to GCI, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 16-209 (filed August 22, 2016) (GCI Aug. 22, 2016 *Ex Parte*); Letter from Dane E. Ericksen & Richard Rudman, EIBASS, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 16-209 (filed August 29, 2016) (EIBASS Aug. 29, 2016 *Ex Parte*).

### III. DISCUSSION

10. Section 1.925(b)(3) of the Commission's rules<sup>37</sup> requires parties seeking a waiver to demonstrate that:

- (i) The underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the public interest; or
- (ii) In view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative.

11. Based on the record before us, GCI has justified waivers of the Commission's rules under the second prong of the waiver standard. Specifically, GCI has demonstrated that it would be unduly burdensome to lay fiber underground in extremely rural areas of Alaska or to use other spectrum, such as the 11 GHz band, to increase its capacity; and that for the provision of wireless backhaul in the Upper 6 GHz band, GCI has no reasonable alternative to using the 6 GHz band with the requested channelization and other modifications. The waivers apply only to the sites on GCI's existing network identified in Appendix A of its amended Waiver Request.<sup>38</sup> If GCI expands its network in the future, GCI should attach a similarly detailed waiver request to each site-based application. Assuming these sites are similarly situated to those for which GCI has been granted waivers, we anticipate a similar waiver would likely be appropriate, after Public Notice is given for the pending site-based application(s).

12. In reaching our decision, we recognize that GCI proposes to use spectrum in the Upper 6 GHz band in extremely remote locations in Alaska.<sup>39</sup> The ARC notes that in remote areas in Alaska, carriers have no reasonable alternative to point-to-point microwave solutions.<sup>40</sup> Carriers face unique circumstances deploying broadband-capable networks in Alaska including Alaska's large size, varied terrain, harsh climate, isolated populations, limited availability of personnel to construct networks and shortened construction season.<sup>41</sup> GCI addresses EIBASS's inquiry into alternatives to the waiver request<sup>42</sup> when GCI states that it relies on fiber backbone where possible, but "it is not feasible to bury fiber throughout much of [the] vast, inhospitable, and federally protected areas of western Alaska. While high-capacity fiber is often the technology of choice for core networks or dense urban environments, building fiber to all, or even most, Alaskan locations currently is logistically, technologically, operationally, and economically infeasible."<sup>43</sup> According to GCI, "[m]uch of Alaska is covered by a thick layer of permafrost. This would not only make the initial trenching process difficult and costly, but permafrost also undergoes structural changes over time which can damage fiber and other buried communications equipment."<sup>44</sup> We agree that

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<sup>37</sup> 47 CFR § 1.925(b)(3).

<sup>38</sup> See Waiver Request at App. A (as amended on May 3, 2016). By limiting our waiver grant to the sites on GCI's existing network, we have recognized EIBASS's concern about "me too" waiver requests. See EIBASS Aug. 3, 2016 *Ex Parte* Letter at 3. We note EIBASS's observation that GCI has not submitted a study by a frequency coordinator showing that existing Part 101 frequencies are not available to accomplish GCI's objectives without a waiver. EIBASS Aug. 29, 2016 *Ex Parte* at 2. The waiver standard articulated in Section 1.925(b)(3) of the Commission's rules does not require a party to submit third-party documentation from a frequency coordinator to demonstrate that there is no reasonable alternative, as suggested by EIBASS. 47 CFR § 1.925(b)(3).

<sup>39</sup> See GCI Comments at 15.

<sup>40</sup> ARC Comments at 4-5.

<sup>41</sup> See AT&T Reply at 1-2.

<sup>42</sup> EIBASS Aug. 3, 2016 *Ex Parte* Letter at 3-4 (requesting that the Commission ask GCI why it cannot construct fiber optic links in lieu of requesting a waiver to construct microwave links).

<sup>43</sup> Waiver Request at 6. See also GCI Aug. 22, 2016 *Ex Parte* at 2-3.

requiring GCI to lay fiber as an alternative to using wireless backhaul for the sites listed in GCI's Waiver Request would be unduly burdensome.

13. By limiting the relief to waivers for the existing sites in GCI's TERRA network, we address the ARC's concern that the Bureau "limit this waiver request to those areas of Alaska where fiber is prohibitively difficult to utilize."<sup>45</sup> Given that numerous small communities in remote Alaska lack adequate or even the most basic mobile service, we believe that granting these waivers serves the public interest by fostering provision of broadband service in communities in Alaska where it will support economic growth, education, healthcare and public safety.<sup>46</sup>

14. Given the differences in propagation characteristics between the 6 GHz and 11 GHz bands and the attendant cost of rebuilding and re-equipping many of the towers of the TERRA backbone, we agree that transitioning GCI's entire microwave backbone to a new band – 11 GHz – would be unduly burdensome.<sup>47</sup> As GCI stated in its Waiver Request, "if GCI were to switch the TERRA backbone to use frequencies in the 11 GHz band, it would be required to construct numerous additional towers to compensate for the inferior propagation characteristics—and, in particular, rain fade—of these frequencies."<sup>48</sup> The Bureau's own analysis of the microwave paths used at the TERRA network sites supports GCI's contentions.<sup>49</sup>

15. *Waiver of 47 CFR § 101.101 to allow for Fixed Service Operations in the 6425-6525 MHz Band.* We conclude that GCI has justified a waiver of Section 101.101 of the Commission's rules. As discussed *supra*, use of higher frequency bands would not meet GCI's reliability objectives. A waiver of Section 101.101 of the Commission's rules in the 6425–6525 MHz sub-band, however, enables two additional 60 MHz channels (one per polarization) in the 6425–7125 MHz spectrum, increasing potential capacity for the upper 6 GHz spectrum by 25% (705 Mbps).<sup>50</sup> Furthermore, under the unusual circumstances of this case, allowing GCI to operate fixed microwave facilities in the 6425-6525 MHz band would be consistent with the Commission's decision generally to reserve the frequencies for mobile use. The Commission anticipated that the primary need for this mobile use band would be in urban areas.<sup>51</sup> The purpose of this waiver is to facilitate broadband service "to some of the most rural communities in the United States."<sup>52</sup> The communities GCI's TERRA network serves have low population density and high infrastructure deployment costs, but also an increasing demand for broadband.<sup>53</sup> The 6425–6525 MHz

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<sup>44</sup> GCI Aug. 22, 2016 *Ex Parte* at 3.

<sup>45</sup> ARC Comments at 4. *See also* GCI Aug. 22, 2016 *Ex Parte* Attach. at 2 (showing a map of the sites in western Alaska where GCI plans to construct additional microwave links in its TERRA network).

<sup>46</sup> *See* GCI Aug. 22, 2016 *Ex Parte* at 2.

<sup>47</sup> *See* GCI Comments at 10-11, 14 n.25.

<sup>48</sup> *See Id.* at 14 n.25. *See also* Waiver Request at App. B (Declaration of Gene Strid).

<sup>49</sup> Section 101.143 of the Commission's rules (Minimum path length requirements) states that the minimum path length for frequencies in the 6 GHz band is 17 km whereas the minimum path length for the 11 GHz band is 5 km. 47 CFR § 101.143. Based on the sites listed in Appendix A of GCI's Waiver Request, all of GCI's paths would exceed the minimum path length for the 11 GHz band. *See* Waiver Request at Appendix A. Further, given that the paths GCI is using for the TERRA network sites are more than four times the minimum path length for the 11 GHz band, it is a reasonable conclusion that the 11 GHz band would not provide the necessary reliability for those paths.

<sup>50</sup> *See* Waiver Request at 15.

<sup>51</sup> *See* Establishment of a Spectrum Utilization Policy for the Fixed and Mobile Services Use of Certain Bands Between 947 MHz and 40 GHz, GEN. Docket No. 82-334, Third Report and Order, 2 FCC Rcd 1050, 1054, para. 29 (1987).

<sup>52</sup> *See* Waiver Request at 3.

<sup>53</sup> *See id.*

band is not assigned to any facilities that operate around permanent locations in this rural part of Alaska. To the extent there may be future demand for mobile use of the band in Alaska, GCI's microwave links are unlikely to preclude such future use because of the links' remote locations, transmitting in a limited number or known directions using highly directional antennas.

16. GCI states that it is committed to complying with existing coordination requirements under Section 101.103 of the Commission's rules and "will work closely with a frequency coordinator, under the existing coordination procedures, to prevent interference with other licensees [including ARC members] who operate in the Upper 6 GHz bands in close proximity to the TERRA backbone now or in the future."<sup>54</sup> EIBASS has no objection to the requested waivers provided that these standard Section 101.103 prior coordination notice (PCN) protocols are followed.<sup>55</sup> Even withstanding GCI's commitment on coordination, we emphasize that the 6425-6525 MHz band is designed primarily for mobile use, and our decision to grant GCI's waiver request should not be considered an indication of our intent to revisit that designation. Granting GCI's request for waiver of Section 101.101 of the Commission's rules is based on the unique circumstances affecting GCI's specific plans to deploy broadband in rural Alaska.

17. *Waiver of 47 CFR § 101.109(c) to Allow for 60 Megahertz Channels.* We also conclude that GCI has justified a waiver of Section 101.109(c) of the Commission's rules to allow the use of 60 megahertz channels in the 6425-6525 MHz, 6525-6875 MHz and 6875-7125 MHz bands. We agree with the ARC that because the harsh climate and terrain make constructing a fiber connection economically infeasible, access to spectrum in the 6 GHz band is critical for GCI and other providers serving rural Alaska.<sup>56</sup> We further agree with the ARC that the "benefit of flexibility offered by 60 MHz channels across the 6 GHz spectrum" is well addressed by GCI in its filings.<sup>57</sup> GCI states that "[a]llowing wider channels can also result in more efficient spectrum utilization."<sup>58</sup> GCI explains that its proposed plan would require nine radios for the Lower and Upper 6 GHz bands combined, as compared with the existing channel plan under the rules, which requires nine radios per bay, for the Upper 6 GHz band alone.<sup>59</sup> According to GCI, the additional radios required under the current channelization scheme greatly increase prime power requirements (and battery backup power needs) at each site, which translates to fuel tank increases or replacements, new larger buildings to house the batteries, additional radios, as well as construction, installation, and labor costs.<sup>60</sup> Further, according to GCI, fitting that many radios in one bay is not likely to be feasible for current or future versions of the needed radios.<sup>61</sup> GCI states that installing additional, new radio bays at each tower site and providing additional power for such radios creates the sort of construction project that the unique conditions of rural Alaska make economically infeasible.<sup>62</sup> The ARC supports "the most efficient and economic use of spectrum to facilitate middle mile connections in areas where fiber backhaul facilities are too difficult and/or too expensive to construct."<sup>63</sup> We agree with the ARC that a waiver will achieve that goal here, under the circumstances GCI presents. Our decision

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<sup>54</sup> GCI Reply at 7-8.

<sup>55</sup> EIBASS Comments at 1.

<sup>56</sup> ARC Comments at 3.

<sup>57</sup> *Id.* at 5.

<sup>58</sup> Waiver Request at 16, quoting *Amendment of Part 101 of the Commission's Rules to Facilitate the Use of Microwave for Wireless Backhaul & Other Uses & to Provide Additional Flexibility to Broad. Auxiliary Serv. & Operational Fixed Microwave Licensees*, Second Report and Order, 27 FCC Rcd. 9735, para. 52 (2012).

<sup>59</sup> Waiver Request at 16.

<sup>60</sup> *Id.*

<sup>61</sup> *Id.*

<sup>62</sup> *Id.*

<sup>63</sup> ARC Comments at 3.

will allow GCI to provide more capacity and offer faster data rates to its rural customers.

18. By limiting GCI's waiver to the existing sites in its TERRA network identified in its Waiver Request,<sup>64</sup> we have addressed the ARC's concerns about the scope of the waiver request.<sup>65</sup> We generally agree with GCI that spectrum congestion is not an issue in the extremely rural areas at issue in its waiver request.<sup>66</sup> We note that Section 101.103(d) requires that GCI coordinate its proposed operations to prevent interference with other licensees who seek to operate in the Upper 6 GHz bands in close proximity to the TERRA backbone.<sup>67</sup> With GCI following standard prior coordination protocols, wider channels should not cause ongoing coordination and interference challenges along the existing or planned TERRA network.<sup>68</sup> Based on the record in this proceeding, we agree that technological advances and increased consumer demand along with the lack of reasonable alternatives to increasing capacity using the 6 GHz band create a need for wider 60 MHz channels in rural Alaska and, thus, we find that granting GCI's waivers of Section 101.109(c) of the Commission's rules is in the public interest.<sup>69</sup>

19. *Waiver of 47 CFR §§ 101.147(j)-(l)*. We also conclude that GCI has justified its waiver request for 47 CFR §§ 101.147(j)-(l) thereby allowing GCI to operate in a contiguous band from 6425 to 7125 MHz, allowing 60 MHz channels to span across the current sub-bands of 6425 to 6525 MHz, 6525 to 6875 MHz, and 6875 to 7125 MHz. GCI states that waiving this provision will allow it to use the ten 60 megahertz channels across all three Upper 6 GHz spectrum bands.<sup>70</sup> GCI argues that without a waiver allowing band unification, a significant amount of valuable spectrum would be stranded, or would be needed to provide duplex gaps between transmitters and receivers across three separate bands, as depicted in Figure 2 of the attachments to the Waiver Request.<sup>71</sup> GCI states that the incorporation of the 6425–6525 MHz sub-band into a uniform band plan that transcends the sub-bands of the Upper 6 GHz band would avoid stranding 100 MHz of spectrum that would otherwise go unused in rural Alaska and allow GCI to add approximately 1.4 Gbps of capacity.<sup>72</sup> The ARC asserts that “the benefit of flexibility offered by 60 MHz channels across the 6 GHz spectrum is well articulated by GCI” and seeks similar relief.<sup>73</sup> AT&T supports both GCI's waiver request and the ARC's proposal to extend this waiver request to all carriers serving rural and remote Alaska.<sup>74</sup>

20. As a procedural matter, EIBASS contends that GCI did not request a waiver of Section 101.147(a), Note 34 of the Commission's rules, which requires that an FS station operating in the 7 or 13

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<sup>64</sup> Waiver Request at App. A.

<sup>65</sup> See ARC Comments at 5-7. In particular, the ARC raised concerns about waivers that would cover the three urban centers in Alaska: Anchorage, Juneau, and Fairbanks. *Id.* at 4, 6.

<sup>66</sup> See Waiver Request at 17. The Commission has previously mentioned the possibility of spectrum congestion as a potential concern associated with wider channels. *Amendment of Part 101 of the Commission's Rules to Accommodate 30 Megahertz Channels in the 6525-6875 MHz Band*, Report and Order, 25 FCC Rcd. 7760, paras. 16-18 (2010).

<sup>67</sup> 47 CFR § 101.103(d). See also Waiver Request at 17.

<sup>68</sup> See Waiver Request at 17.

<sup>69</sup> *Id.*

<sup>70</sup> *Id.* at 17-18.

<sup>71</sup> *Id.* at 18, citing Appendix C Fig. 2. GCI states that this situation would unnecessarily reduce the amount of Upper 6 GHz spectrum available to GCI for it to meet the needs of its customers. *Id.* at 18.

<sup>72</sup> *Id.* at 18.

<sup>73</sup> ARC Comments at 5.

<sup>74</sup> AT&T Reply at 2.

GHz BAS bands not have its path intersect the operational area of a TV Pickup station in the same band.<sup>75</sup> EIBASS asserts that GCI would need to seek a waiver of this provision due to TV Pickup Station WQRU451, which “has an operational area of ‘Continental United States,’ which of course includes Alaska.”<sup>76</sup> EIBASS is mistaken: the Continental U.S. is limited to the contiguous 48 states in this context.<sup>77</sup> Because TV Pickup Station WQRU451 is limited to the Continental United States, Alaska (and Hawaii) are not included in its operational area.<sup>78</sup> Our internal analysis shows there are no TV Pickup stations operating in the areas covered by GCI’s waiver request, and therefore, we agree with GCI that no waiver of this provision is necessary.<sup>79</sup>

21. EIBASS also argues that GCI did not seek in its request a waiver of the Commission’s rule that reserves TV BAS Channels B5 (6975–7000 MHz) and B6 (7000–7025 MHz) for BAS use only.<sup>80</sup> We find that GCI’s request to waive 47 CFR § 101.147(l), which does not provide for fixed microwave channels between 6975 MHz and 7025 MHz, was the correct process for seeking a waiver to operate in the 6975-7025 MHz band, as GCI contends.<sup>81</sup> Section 101.147(l) is the rule that lists the permitted channels and bandwidths for point-to-point microwave use in the 6875-7125 MHz band. Because GCI is seeking to operate in a manner not contemplated in that rule, it would need a waiver of Section 101.147(l). Furthermore, GCI’s Waiver Request makes clear that it is asking for authority to operate in 6975-7025 MHz. GCI specifically sought a waiver of Section 101.147(l) of the Commission’s rules “allowing GCI to use contiguous 60 MHz channels across the three Upper 6 GHz sub-bands,” which, by its terms, includes the 6975-7025 MHz band.<sup>82</sup> GCI’s channel plan in its Waiver Request depicting proposed operations includes operations between 6975 and 7025 MHz.<sup>83</sup> Further, in its Reply, GCI clarified “for avoidance of doubt, GCI reiterates that the contiguous bands covered by its requested waiver, and where it seeks to operate, include the 50 MHz from 6975-7025 MHz.”<sup>84</sup> Therefore, we consider GCI’s Waiver Request to include a request for waiver to operate on the TV BAS Channels B5 and B6 at 6975-7000 MHz and 7000-7025 MHz, respectively.

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<sup>75</sup> EIBASS Comments at 1 (citing 47 CFR § 101.147(a), Note 34); EIBASS Reply at 1-3; EIBASS Aug. 3, 2016 *Ex Parte* at 1; EIBASS Aug. 29, 2016 *Ex Parte* at 1. EIBASS further contends that “although GCI asked for waiver of Section 101.147(l), waiver of that rule, even if granted, would only allow FS use of 6,875–6,975 MHz, and 7,025–7,125 MHz, in portions of Alaska within 56.3 km of Canada, because only those areas would be outside the WQRU451 operational area. But any such FS paths would then require Canadian concurrence.” EIBASS Reply at 2.

<sup>76</sup> EIBASS Reply at 1. *See also* EIBASS Aug. 3, 2016 *Ex Parte* at 1; EIBASS Aug. 29, 2016 *Ex Parte* at 1.

<sup>77</sup> This is in contrast to a “nationwide” license, which includes Alaska and Hawaii. *See* FCC Form 601, Schedule I Instructions, Item 4, Page 5 (<https://transition.fcc.gov/Forms/Form601/601.pdf>) (providing separate codes for areas of operation for “Nationwide including Hawaii Alaska & US Territories” and “Continental US”).

<sup>78</sup> EIBASS Aug. 3, 2016 *Ex Parte* at 6 (providing FCC Reference Copy of Radio Authorization for TV Pickup Station WQRU451. *See* <http://wireless2.fcc.gov/ULSGis/ULSearchGis.jsp?licKey=3499194&licType=N&externalServer=true&newSearch=searchLicense.jsp&refresh=true&results=true&refineNum=3&licName=TV+Pickup+License+-+WQRU451+++++Fox+Sports+Net+Florida+Inc>. TV Pickup Station WQRU451 is affiliated with Fox Sports Florida.

<sup>79</sup> *See* GCI Reply at 8.

<sup>80</sup> EIBASS Comments at 1-3; EIBASS Reply at 1-2; EIBASS Aug. 29, 2016 *Ex Parte* at 1.

<sup>81</sup> *See* Waiver Request at 17-18; GCI Reply at 6-7, n.18, citing *2011 Part 101 Update Report and Order* at Appendix A (amending Section 101.147 to expand the channels available for fixed microwave, but excluding 6975-7025 MHz).

<sup>82</sup> GCI Reply at 6-7, quoting Waiver Request at 12.

<sup>83</sup> *Id.* at 7, citing Waiver Request at 13.

<sup>84</sup> *Id.* at 7.

22. While we agree with EIBASS that mobile news gathering may be necessary in any area of the country,<sup>85</sup> given the unique nature of the terrain in rural Alaska and accompanying challenges for providing broadband service, we find that this waiver is in the public interest. Further, it will not prevent mobile electronic news gathering (ENG) if a news event of sufficient magnitude occurs. As an alternative to BAS Channels B5 and B6, as EIBASS and GCI both note in their filings, there are two 25 MHz channels reserved in the 13 GHz band that accommodate BAS services and 40 other channels available on a shared basis.<sup>86</sup> We also note GCI's commitment to working closely with a frequency coordinator to prevent interference with other licensees,<sup>87</sup> and in times of emergency, we require that GCI share information with the local Society of Broadcast Engineers (SBE) coordinator based in Anchorage, AK, to coordinate shared use of the channels between 6975 and 7025 MHz.<sup>88</sup> We also believe that television and the internet are complementary in times of emergency and agree with GCI that internet connectivity is crucial for ensuring that lines of communication remain open between local public safety officials in communities across rural Alaska.<sup>89</sup> Therefore, we find it is in the public interest, under these specific circumstances, to permit GCI to operate on these channels in these remote areas of Alaska.<sup>90</sup> We note that this does not indicate any change in our general policy regarding the BAS reserved channels.

23. We clarify that we consider the modification of GCI's licenses to add the 5925-7125 MHz band a major modification,<sup>91</sup> as opposed to a minor modification, as GCI suggests.<sup>92</sup> As such, in granting this waiver, for the reserved channels we require GCI to file site-specific applications specifying the particular technical parameters for each path. GCI will be required to indicate that the applications require a waiver of the rules and pay the requisite filing fees; however, to the extent that the site based applications are consistent with the locations identified in Appendix A, we will consider the applications to be covered by this Order. Prior to filing these applications, GCI must follow the coordination procedures pursuant to Section 101.103 of the Commission's rules. During the period of coordination, as a condition of the waiver, we also require coordination with SBE to ensure that there are no itinerant ENG operations in the area operating pursuant to Section 74.24 of the Commission's rules.

24. Finally, we reject the proposal from the ARC and AT&T that we grant the waiver requested by GCI on a carrier-neutral basis.<sup>93</sup> We are granting this waiver based on the specific circumstances outlined by GCI in its Waiver Request and only for the specific existing sites listed in Appendix A of its Waiver

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<sup>85</sup> EIBASS Comments at 2; EIBASS Reply at 3; EIBASS Aug. 3, 2016 *Ex Parte* Letter at 2-3

<sup>86</sup> EIBASS Comments at 2; GCI Reply at 5; GCI Aug. 22, 2016 *Ex Parte* at 2. GCI also notes that in the vicinity of its TERRA backbone many of the towers and the area between the towers will not be accessible by road, in any case. GCI Reply at 5.

<sup>87</sup> GCI Reply at 7-8.

<sup>88</sup> In response to the concern raised in EIBASS's August 29, 2016 *ex parte*, we find that the combination of GCI's commitment to work with a frequency coordinator and its coordination in times of emergency with the local SBE coordinator in Anchorage, AK will be sufficient to ensure that residents of Alaska have access to emergency news on television. *But see*, EIBASS Aug. 29, 2016 *Ex Parte* at 2.

<sup>89</sup> *See* GCI Aug. 22, 2016 *Ex Parte* at 2.

<sup>90</sup> *See id.* at 3 (arguing that it would be contrary to longstanding Commission spectrum policy to continue to allow these channels to lay fallow in rural Alaska when GCI plans to use them to provide broadband service).

<sup>91</sup> *See* 47 CFR § 1.929(a)(6) (classifying as major an application or amendment requesting to add a frequency or frequency block for which the applicant is not currently authorized, excluding removing a frequency); 47 CFR § 1.929(d)(1)(iii) (classifying as major any increase in bandwidth).

<sup>92</sup> Waiver Request at 15 n.26.

<sup>93</sup> ARC Comments at 4-5; AT&T Reply at 2.

Request.<sup>94</sup> We will review any future waiver requests in these bands according to the same standards we outline today and consider waivers only for specific sites after appropriate notice is given.<sup>95</sup> Given the geography, cost of deployment, and the Commission's desire to support expanded broadband offerings in Alaska, we understand other similarly situated carriers may need waivers to achieve their broadband deployment goals in these remote areas, but we must consider them under the specific factual circumstances presented.

25. The Commission has recognized that microwave services can play an important role in providing backhaul "middle mile" services.<sup>96</sup> By granting GCI's waiver request,<sup>97</sup> we allow GCI to continue to use microwave facilities as a backhaul solution. Significantly for rural broadband deployment, this waiver will support telemedicine and distance learning applications and reduce the equipment and construction costs inherent in achieving higher middle-mile capacity.<sup>98</sup> Such use can help facilitate the provision of advanced broadband and wireless services to the residents of Alaska.

#### IV. CONCLUSION AND ORDERING CLAUSES

26. GCI has justified waivers of the Commission's rules to allow it to provide common carrier fixed point-to-point microwave service in the 6425–6525 MHz band, use 60-MHz-wide channels throughout the Upper 6 GHz band, and operate on a contiguous band from 6425 to 7125 MHz, allowing 60 MHz channels to span across the current sub-bands of 6425 to 6525 MHz, 6525 to 6875 MHz, and 6875 to 7125 MHz. We therefore grant its Waiver Request for GCI's existing sites identified in Appendix A of this Order.

27. As discussed above, GCI must file a FCC Form 601 "FCC Application for Radio Service Authorization" to request authorization for the specific technical parameters of each site identified in Appendix A. The applications must include the requisite waiver fee for each station, include a copy of this Order, and indicate that they are being filed pursuant to the waiver granted herein.

28. Further, as explained above, GCI is required not only to follow standard coordination procedures pursuant to Section 101.103 of the Commission's rules, but also must coordinate with the local SBE coordinator to ensure that there are no itinerant ENG operations in the area that are operating pursuant to Section 74.24 of the Commission's rules prior to filing its applications.

29. For any new sites, GCI should attach a similar waiver request to its site-based application. Assuming these sites are similarly situated to those for which GCI has been granted a waiver, we anticipate a similar waiver would likely be appropriate in that case, after providing Public Notice of the pending site-

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<sup>94</sup> See also GCI Aug. 22, 2016 *Ex Parte* Attach. at 2 (showing a map of the sites in western Alaska where GCI plans to construct additional microwave links in its TERRA network).

<sup>95</sup> See GCI Reply at 3 ("[o]nce ARC members have a concrete plan for use, they too may request a waiver for the specific geographic areas where they would use the spectrum without interference concerns, and the Commission's grant of GCI's request does not foreclose such an approach"). At this time, neither ARC nor AT&T has filed with the Commission evidence showing "unique or unusual factual circumstances" regarding their networks warranting an expansion of the waiver request. See GCI Reply at 3.

<sup>96</sup> See 2011 *Part 101 Update Report and Order*, 26 FCC Rcd 11614, 11616, para. 2 (2011).

<sup>97</sup> In an *ex parte*, EIBASS references three enforcement actions the Commission has taken against GCI since February, 2015. EIBASS Aug. 29, 2016 *Ex Parte* at 3. The Enforcement Bureau's proceedings are separate from this proceeding reviewing GCI's Waiver Request. We note that in resolving the enforcement proceedings, GCI has paid forfeitures and entered into a compliance plan and a consent decree with the Commission. See *General Communication, Inc. Former Registrant of Antenna Structure No. 1265246 Fairbanks, Alaska*, File No.: EB-FIELDWR-12-00004576, Forfeiture Order, DA 15-137 (February 4, 2015); *General Communication, Inc.*, indirect parent company of The Alaska Wireless Network, LLC, EB-SED-15-00018810, Order, DA 15-1179 (October 20, 2015); *General Communication, Inc.*, File No. EB-SED-15-00020014, Order, DA 16-735 (July 6, 2016).

<sup>98</sup> See GCI Reply at 4.

based application.

30. ACCORDINGLY, IT IS ORDERED that pursuant to Sections 4(i) and 309 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 309, and Section 1.925 of the Commission's Rules, 47 CFR § 1.925, that the waiver request filed by General Communication, Inc. IS GRANTED for the existing sites identified in Appendix A of its Waiver Request, as amended.

31. This action is taken under delegated authority pursuant to Sections 0.131 and 0.331 of the Commission's Rules, 47 CFR §§ 0.131, 0.331.

FEDERAL COMMUNICATIONS COMMISSION

Blaise A. Scinto  
Chief, Broadband Division, Wireless Telecommunications Bureau

**APPENDIX A: Existing TERRA Backbone Location Coordinates**

<b>Site Name</b>	<b>Latitude</b>	<b>Longitude</b>
Akiak	60 54 41.00 N	161 13 38.50 W
Bean Ridge	65 02 17.35 N	150 42 09.85 W
Bethel	60 46 53.80 N	161 53 01.60 W
Caribou	59 10 11.95 N	160 39 05.41 W
Cone	59 21 36.98 N	161 43 52.70 W
Dime Rptr	65 05 49.03 N	160 42 54.75 W
Eek	60 12 57.40 N	162 00 43.40 W
Elliott Rptr	65 13 50.93 N	149 30 24.94 W
FAA HILL	64 34 38.25 N	149 04 47.34 W
Final	64 59 27.97 N	158 04 57.63 W
Galena	64 44 20.01 N	156 53 18.30 W
Gold Mountain Alt.	65 05 11.21 N	154 07 06.48 W
Grant Creek Rptr #2	65 15 15.40 N	152 44 27.07 W
Holy Cross	62 12 04.69 N	159 46 54.30 W
Holy Cross Hills Rptr	62 57 29.05 N	160 10 24.51 W
Kalskag Hill	61 33 47.45 N	160 18 59.97 W
Kanakanak	58 59 58.42 N	158 32 41.77 W
Kulukak	59 02 41.35 N	159 40 18.87 W
Levelock	59 06 25.37 N	156 52 16.10 W
Manokotak	58 57 21.57 N	158 55 23.09 W
Melozitna	64 53 20.56 N	155 31 15.73 W
Mission Hill	65 10 48.97 N	151 59 06.52 W
Muklung Hills	59 17 51.43 N	158 07 22.34 W
Otter Creek Rptr	63 18 48.63 N	160 57 27.69 W
Pilcher Mt	61 55 40.11 N	161 59 45.26 W
Quinhagak	59 43 43.30 N	161 54 26.70 W
Shageluk	62 38 47.12 N	159 31 41.55 W
Shaktoolik	64 20 56.36 N	161 11 03.38 W
Summit	64 49 19.14 N	159 27 28.42 W
Talik	65 31 13.77 N	160 32 23.32 W
Tuluksak	61 05 55.30 N	160 57 32.00 W
Unalakleet Rptr	63 59 19.32 N	160 53 00.22 W
Ungalik Rptr	64 41 12.07 N	160 40 47.90 W