

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Expanding Flexible Use of the 3.7 to 4.2 GHz Band	)	GN Docket No. 18-122
	)	
Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz	)	GN Docket No. 17-183
	)	(Inquiry Terminated as to 3.7-4.2 GHz)
	)	
Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rules to Authorize and Facilitate the Deployment of Licensed Point-to-Multipoint Fixed Wireless Broadband Service in the 3.7-4.2 GHz Band	)	RM-11791
	)	
Fixed Wireless Communications Coalition, Inc., Request for Modified Coordination Procedures in Band Shared between the Fixed Service and the Fixed Satellite Service	)	RM-11778
	)	

**REPLY COMMENTS OF GCI COMMUNICATION CORP.**

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November 27, 2018

## TABLE OF CONTENTS

	Page
<b>I. INTRODUCTION AND SUMMARY.....</b>	<b>2</b>
<b>II. THE RECORD SUPPORTS THE NEED TO PROTECT INCUMBENT FSS OPERATIONS IN THE C-BAND.....</b>	<b>3</b>
<b>A. There is Widespread Agreement That There Is No Suitable Transmission         Replacement for The C-Band Available Today .....</b>	<b>4</b>
<b>B. Protections Must Be Afforded to Incumbent FSS Operations .....</b>	<b>9</b>
<b>III. ADDITIONAL TECHNICAL INFORMATION CONCERNING THE VARIOUS APPROACHES TO TERRESTRIAL USE OF THE C-BAND MUST BE PROVIDED FOR PUBLIC REVIEW.....</b>	<b>13</b>
<b>IV. THE MAJORITY OF COMMENTERS AGREE THAT THE FCC SHOULD REFRAIN FROM INTRODUCING FIXED P2MP SERVICES INTO THE C- BAND .....</b>	<b>16</b>
<b>V. CONCLUSION .....</b>	<b>17</b>

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**REPLY COMMENTS OF GCI COMMUNICATION CORP.**

GCI Communication Corp. ("GCI") submits the following reply comments in response to the Federal Communications Commission's ("FCC's" or "Commission's") Notice of Proposed Rulemaking ("NPRM") seeking comment on the future of incumbent satellite usage of the 3.7-4.2 GHz band (the "C-Band" or "3.7 GHz Band").<sup>1</sup> The record in this proceeding

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<sup>1</sup> *In the Matter of Expanding Flexible Use of the 3.7 to 4.2 GHz Band, Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz, Petition for Rulemaking to Amend and Modernize Parts 25 and 101 of the Commission's Rules to Authorize and Facilitate the Deployment of Licensed Point-to-Multipoint Fixed Wireless Broadband Service in the 3.7-4.2 GHz Band, Fixed Wireless Communications Coalition, Inc., Request for Modified Coordination Procedures in Band Shared between the Fixed Service and the Fixed Satellite Service*, GN Docket Nos. 18-122,

overwhelmingly confirms the need to protect current and future incumbent fixed satellite service (“FSS”) C-Band operations – many of which offer critical communications to Americans – in any transition to terrestrial use. GCI echoes the concerns surrounding the lack of available information detailing exactly *how* these services will be protected under the proposals offered in the NPRM. Prior to moving forward with any transition to allowing terrestrial-based services in the C-Band, the Commission must request that additional, specific technical information be submitted for public review and analysis with respect to introducing terrestrial operations onto the C-Band.

## **I. INTRODUCTION AND SUMMARY**

The record in this proceeding underscores that the FCC’s top priority should be to ensure that adequate protections, flexibility, and funding are afforded to incumbent FSS operators to allow critical incumbent C-Band services to continue if terrestrial services enter the band. This includes protections from harmful interference, maintenance of flexible operating policies such as full-band, full-arc, and adequate compensation to ensure that incumbent FSS operators are made whole during and after any transition of the band to terrestrial uses.

Like GCI, many commenters highlighted their unique use of the C-Band for critical and emergency communications, and explained that there currently is no alternative solution that would be as reliable and cost-effective as the C-Band. These commenters properly called for the incorporation of necessary protections for current and future FSS operations if the FCC moves forward with introducing terrestrial services into the C-Band.

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17-183, RM-11791, RM-11778, Order and Notice of Proposed Rulemaking (rel. July 13, 2018) (“NPRM”).

Despite providing vague “trust us” assurances to incumbents, the supporters behind various potential market-based and auction-based mechanisms have not provided sufficient technical analysis demonstrating that their approaches will adequately protect incumbent operations and services – either during a transition or post-transition. Until such information is provided in a transparent manner, and interested parties are given the opportunity for review and comment, the Commission cannot move forward with opening up the C-Band for terrestrial use – regardless of the approach. If the FCC decides to move forward with any terrestrial operations, it should heed the call of several commenters and take a larger oversight role in the transition – namely, it should enforce any transition plan, including ensuring that protections are instituted, and timelines and promised compensation are honored. Lastly, GCI agrees with most commenters that the FCC should reject proposals to introduce fixed services onto the C-Band due to the high potential for catastrophic interference to FSS services.

## **II. THE RECORD SUPPORTS THE NEED TO PROTECT INCUMBENT FSS OPERATIONS IN THE C-BAND**

Any suggestions that the C-Band is not being used extensively to provide critical services have been completely debunked by the record in this proceeding. Indeed, the record is filled with examples of heavy and essential FSS utilization of the C-Band. Like GCI, many commenters highlight their unique use of the C-Band for important and critical communications, and explain that there currently is no alternative solution that would be as reliable and cost-effective as the C-Band – specifically focusing on the shortfalls of the Ku- and Ka-bands as well as of the use of fiber optic cable. GCI strongly agrees with the calls of other commenters for the incorporation of necessary protections for current and future FSS operations if the FCC moves forward with introducing terrestrial services into the C-Band. GCI also vehemently opposes CTIA, Motorola, and BAC support for limiting new applications for earth stations and space

stations. Such action by the FCC would irreparably harm existing services and negate any protections afforded to incumbents when introducing terrestrial services in the C-Band.

**A. There is Widespread Agreement That There Is No Suitable Transmission Replacement for the C-Band Available Today**

As GCI has explained, the C-Band is an essential tool in its arsenal when it comes to serving the rural and remote areas of Alaska.<sup>2</sup> In many cases, GCI's satellite services are the only communications option that Alaskans can rely upon to contact emergency officials in critical situations, and if interrupted, could result in life-threatening situations.

GCI is not alone in its reliance on the C-Band. The record demonstrates that a number of "vital industries"<sup>3</sup> depend on unfettered access to the "indispensable"<sup>4</sup> C-Band for everyday operations.<sup>5</sup> For instance, the American Cable Association ("ACA") explains that the C-Band

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<sup>2</sup> GCI's C-Band satellite technology is used for the provision of basic telephone service, medical service, and distance-learning. Federal agencies, such as the Federal Aviation Administration ("FAA"), for instance, also rely on GCI's operations in the C-Band to assist pilots throughout the state. *See generally* GCI Initial Comments.

<sup>3</sup> Comments of AT&T Services Inc. at 8-11 (stating "C-band satellite services provide an essential component of infrastructure relied upon by several vital industries" and "there are a number of use cases and locations where there presenting seem to be no comparable alternatives to such C-band services.") ("AT&T Comments").

<sup>4</sup> Comments of the C-Band Alliance at 8 ("CBA Comments"); Comments of National Public Radio at 5 ("NPR Comments"); Comments of the Satellite Industry Association at 3 ("SIA Comments").

<sup>5</sup> *See, e.g.*, Comments of Alaska Communications Internet, LLC at 5-8 ("ACI Comments"); Comments of Altice USA, Inc. at 1 (explaining that the "use of the C-Band is critical to distribution of the Company's video operations to its 4.9M video customers.") ("Altice Comments"); Comments of American Cable Association at 2-4 ("ACA Comments"); Comments of C-SPAN Networks at 2 (stating that the C-Band is "essential to our business operations and our ability to continue to deliver programming of high technical quality.") ("C-SPAN Comments"); Comments of Charter Communications Inc. at 1-2 (explaining that the C-Band is "a crucial component of Charter's core video business with 16.14 million residential video customers and 488,000 small and medium business customers across the country relying on this band to receive their daily news, sports, and entertainment.") ("Charter Comments"); Comments of Comcast Corporation and NBCUniversal Media, LLC at ii, 5-7 ("To date, no one has identified a suitable alternative to C-Band satellites for delivering the video programming on

“is the method by which most cable operators receive cable programming, as alternative conduits are unavailable, inadequate or inefficient”<sup>6</sup> and in “many cases [operators rely] exclusively on the C-Band to deliver programming content to their customers, as they are mostly concentrated in rural America where fiber delivery is not available.”<sup>7</sup> NPR concludes that “public radio could not serve almost forty-one million Americans each week . . . without the indispensable, highly efficient programming distribution methods currently employed using C-Band spectrum.”<sup>8</sup> In addition to the important role that the C-Band plays in video service delivery, NCTA explains that it is “also critical for onsite newsgathering and live event coverage” and for the provision of

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which so many Americans rely.”) (“Comcast/NBCUniversal Comments”); Comments of the Content Companies at 4 (“Given the critical importance of the C-Band to video content delivery and the lack of suitable alternatives, the Commission should abandon the false premise that existing FSS usage in the C-Band could be shifted to alternative spectrum bands or terrestrial alternatives.”) (“Content Company Comments”); Comments of Cumulus Media Inc. and Westwood One, LLC at 3-8 (“Cumulus/Westwood Comments”); Comments of Eutelsat S.A. at 4 (“C-Band satellite services provide by far the most *efficient* and reliable means to distribute video programming over large areas to television stations, cable operators, and others.”) (“Eutelsat Comments”); Joint Comments of Intel Corporation, Intelsat License LLC, & SES Americom, Inc. at 2 (“C-Band infrastructure . . . has become the backbone of U.S. content distribution and an invaluable failsafe for viewers and listeners due to its unmatched reliability and ubiquity.”) (“Intel, Intelsat, SES Comments”); Comments of National Association of Broadcasters at 3-4 (“Broadcasters, MVPDs and other distributors rely on the C-Band as a key component of a near-flawlessly reliable distribution network.”) (“NAB Comments”); Comments of NCTA- The Internet & Television Association at 3-6 (“NCTA Comments”); Comments of North American Broadcasters Association at 2 (“The use of C-Band FSS is essential. . . . [t]here is no alternative distribution means that delivers the necessary service reliability that broadcasting provides to its customers.”) (“NABA Comments”); Comments of Olympusat, Inc. at 2 (“Olympusat Comments”); Comments of PSSI Global Services, LLC at 3-9 (PSSI Comments); Comments of QVC, Inc. and HSN, Inc. at 4 (noting that “essentially, all national video programming, regardless of how it ultimately is received by the viewing public, is distributed over satellites in the C-band that have full coverage to the contiguous United States.”) (“QVC/HSN Comments”). Unless otherwise noted, all references to Comments discussed herein are those filed in GN Docket No. 18-122 on October 29, 2018.

<sup>6</sup> ACA Comments at 2.

<sup>7</sup> *Id.* at 3.

<sup>8</sup> NPR Comments at 5.

broadband service to rural and remote areas.<sup>9</sup> Importantly, like GCI, Alaska Communications finds the C-Band to be “essential” to serving remote Alaskan residents, and is “particularly important in enabling telemedicine and distance learning services, on which Alaska is uniquely dependent.”<sup>10</sup>

The reason the C-Band is so heavily relied upon by various industries is that “it rarely fails, is cost-effective”<sup>11</sup> and “works today with near 100 percent reliability.”<sup>12</sup> Any proposed replacement would have to – at a minimum – meet these requirements. Commenters, however, recognize “that there are a host of uses that cannot achieve comparable quality of service through any other means.”<sup>13</sup> In other words, there is no suitable alternative available today that would result in the same level of reliability, ubiquity and affordability that the C-Band offers – further necessitating the need for additional protections for C-Band operations. While the NPRM proposed using alternative satellite bands, such as the Ku- or Ka-bands, or fiber, as potential replacements for current C-Band operations, industry stakeholders – those that currently operate in the C-Band – explain that these options do not offer the favorable propagation characteristics nor do they provide the necessary capacity that is required to offer continued operation of the critical services discussed above.<sup>14</sup> For instance, Comcast explains,

C-Band services are ubiquitous – reaching all corners of the country, including rural areas that can be hard to reach with fiber or other distribution methods. They are

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<sup>9</sup> NCTA Comments at 5. In addition, Speedcast Communications recognizes that “C-Band earth stations play a critical role in distributing video content, connecting remote, rural and at-risk areas.” Comments of Speedcast Communications, Inc. at 2 (“Speedcast Comments”).

<sup>10</sup> ACI Comments 5-6.

<sup>11</sup> ACA Comments at 2.

<sup>12</sup> AT&T Comments at 11.

<sup>13</sup> *Id.*.

<sup>14</sup> *See, e.g.*, ACI Comments at 8-10; Altice Comments at 2-3; Comcast/NBCUniversal Comments at 20-21; Cumulus/Westwood Comments at 4-5; Olympusat Comments at 2-3.



reliable, enable redundancy, and are affordable, which can be particularly important for smaller entities trying to reach large, geographically-dispersed audiences. . . [The C-Band] is less susceptible than higher frequencies, such as the Ku and Ka-bands, to rain fade and other atmospheric conditions that can impair video quality and link reliability.

In contrast, commenters that support moving C-Band operations to the proposed alternative transmission options generally do not operate in the band and lack the real-world knowledge to recognize the technical and logistical inferiority of these proposed options. For instance, in response to concerns surrounding the Ku- and Ka-band sensitivity to rain or snow fade, Verizon claims that “systems can be engineered to mitigate [rain fade] by, for example, using multiple earth station sites to avoid the localized impact of heavy rain.”<sup>15</sup> Verizon’s assertion not only oversimplifies the realities, but misses the point. Verizon claims that site diversity can resolve the rain fade impact. For site-diversity to work in this way, the sites would need to be separated by a distance that is as much as ten times the size of a rural Alaska village. At least in Alaska, but likely in many other rural areas of the country, Verizon’s assertion does not propose a solution. Rain fade and other weather related fade is a widespread concern associated with the Ku- and Ka-bands as highlighted in the record.<sup>16</sup> This is especially concerning in Alaska, where snowfall could occur anytime from September to June, and its natural attributes make it even more difficult to rely on other satellite bands. For example, Alaska Communications points out that “[b]ecause the state’s northerly latitude necessitates such low elevation angles, rain fade and physical obstructions also play an outsize role in the

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<sup>15</sup> Comments of Verizon at 13-14 (“Verizon Comments”).

<sup>16</sup> See, e.g., Charter Comments at 4 (“this spectrum is much more susceptible to rain fade, potentially resulting in a poor customer experience”); Comcast/NBCUniversal Comments at 20-21; SIA Comments at ii (“Ku- and Ka-band frequencies have a lower resistance to rain fade than does the C-Band, and satellites in these higher bands have insufficient available capacity to take over the traffic carried by C-Band spacecraft.”); Olympusat Comments at 2-3.

availability and reliability of FSS in Alaska.”<sup>17</sup> None of these concerns were sufficiently addressed in the record with actual proposed solutions.

Fiber is also highlighted by terrestrial proponents as a popular replacement for the C-Band. These parties argue that fiber “is robust and widely available,”<sup>18</sup> and “offers lower latency than C-band connectivity, greater capacity, and greater security from radio frequency (RF) interference.”<sup>19</sup> Such parties, however, fail to address the high likelihood of disruption due to fiber cuts, lack of redundancy, inability to lay fiber due to government-related or nature-related conditions, and high deployment and maintenance costs.<sup>20</sup> These arguments also completely ignore the crucial fact that “dedicated fiber is too expensive and in many rural areas of America simply non-existent.”<sup>21</sup> GCI’s experience confirms that such “substitutes, particularly fiber, are

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<sup>17</sup> ACI Comments at 10.

<sup>18</sup> Comments of T-Mobile US, Inc. at 8 (“T-Mobile Comments”).

<sup>19</sup> Verizon Comments at 14.

<sup>20</sup> *See, e.g.*, ACA Comments at 3-4 (recognizing that “using fiber for backhaul presents a number of additional obstacles for the many ACA members without access to it. The headends of these members are typically 10-15 miles away from the nearest transit provider, and would cost them a significant amount to build out fiber and lease fiber capacity.”); Altice Comments at 2-3; AT&T Comments at 11 (noting that “[c]ompared to fiber networks, C-band satellite services present fewer points of failure (*e.g.*, fiber cuts)”; Charter Comments at 4 (“fiber delivery is vastly more expensive than Charter’s established earth stations, due to the need for multiple paths of redundancy, and the greatly increased expenses for installation and maintenance.”); Comcast/NBCUniversal Comments at ii (recognizing that laying fiber “on a nationwide basis would require a monumental investment. Even if such a project were feasible, fiber cannot replicate the ubiquity and reliability of the C-Band spectrum.”); Cumulus/Westwood Comments at 5 (“C-Band availability often exceeds that of fiber, even in urban areas” due to fiber cuts or “backhoe fade” and that “fiber does not have the same combination of efficiency and reliability as C-Band for content delivery.”); SIA Comments at ii (“Because fiber has a limited reach, particularly in less-populated areas, relying on fiber as a substitute for C-Band FSS would leave video and audio providers outside urban areas with no economical means to continue receiving the programming their customers enjoy today.”).

<sup>21</sup> NPR Comments at 8-9.

most prevalent in urban areas while in rural areas there are fewer FSS substitutes.”<sup>22</sup> In Alaska, GCI faces not only weather-related barriers to fiber (permafrost in the Arctic tundra; uneven freezing and thawing), but also governmental barriers such as federal and state land regulations that limit available areas for fiber deployment. Calls for fiber replacements for C-Band operations – particularly in rural areas – demonstrate a lack of knowledge and understanding about the real-world of C-Band operations and, thus, any understanding of why such alternatives are not sufficient substitutes for the C-Band.

### **B. Protections Must Be Afforded to Incumbent FSS Operations**

Given the essential reliance that incumbents place on the C-Band, along with the lack of suitable alternatives available today, it is imperative that the Commission ensure that current and future incumbent FSS uses will be protected under any scenario where terrestrial operations are introduced into the C-Band. GCI, like many commenters, is disappointed by the “trust us” approach that proponents of terrestrial use in the band have taken with respect to protections for incumbent operations. As discussed herein, the parties to the proposals under review have not provided sufficient technical studies that demonstrate their proposals will work under real-world conditions as promised, and therefore, the following protections for these services must, at a minimum, be guaranteed by the Commission to ensure that current and future C-Band operations are not adversely impacted or otherwise disrupted by any transition to terrestrials services.

*Protection from Harmful Interference:* As an initial matter, the FCC must ensure that incumbent operations are protected from any harmful interference caused by new mobile or fixed terrestrial services. While proponents of terrestrial use claim that their services will not result in interruptions to C-Band incumbent operations, they fail to provide concrete evidence of these

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<sup>22</sup> NPRM ¶ 64.

assertions. To ensure adequate protection, the FCC must adopt technical rules based on detailed testing, reporting and analysis that satisfactorily demonstrates full protection to earth station operations from harmful interference. Therefore, the first step in doing so would be to require proponents of terrestrial uses in the C-Band to make available detailed information to demonstrate that their claims of protection are accurate, as supported by testing under real-world conditions, data and analysis. Without access to such information, the FCC as well as interested parties cannot sufficiently comment on these proposals, nor can they be satisfied that incumbent services will be protected. Moreover, without access to such information, it is impossible to determine if there is a viable method for resolving any interference situations that become apparent, and what such method may entail. With thousands of different uses in the C-Band, and tens of thousands of earth stations recently registered during the recent filing window, it is not enough for the Commission to rely on generalized claims of what is possible. Rather, proponents of terrestrial uses must come forth with practical, real-world demonstrations that sufficiently show that incumbent operations will be retained and protected.

*Full-Band, Full-Arc:* The full-band, full-arc coordination policy must be retained by the FCC, as the record demonstrates this policy is necessary for FSS services to continue to operate in a sufficient manner. Many commenters support retaining this policy in the recognition that it would strip away critical flexibility required by earth station operators to provide uninterrupted services.<sup>23</sup> This flexibility allows operators to switch transponders, quickly respond to

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<sup>23</sup> AT&T Comments at 14-15; Boeing Comments at 7-8; CBA Comments at 40-41 (arguing that restricting full-band, full arc protection and allowing P2MP deployments would “effectively render [consolidation of FSS operator customers into the upper portion of the band] impossible”); Content Company Comments at 9-10 (“[T]he flexibility that full-band, full-arc protections allows. . . . remains essential to nationwide video content delivery when . . . satellite failures, emergency conditions on the ground, or unexpected interference necessitates prompt movement to another satellite and/or frequency.”); Comcast/NBCUniversal Comments at 32

unexpected satellite failures and/or planned outages, as well as adapt to changing customer requirements or market competition that results in capacity cost reductions. Without this capability, it is impossible to provide continuous, uninterrupted service to our customers. These commenters highlight that this flexibility has been relied upon for years and, as a result, C-Band services have developed and evolved. On the other hand, proponents of eliminating this policy argue that it is “antiquated”<sup>24</sup> and results in an overstatement of use,<sup>25</sup> but have yet to suggest a suitable alternative that would allow operators to respond to outages and prevent system interruption in the same prompt fashion as full-band, full-arc.<sup>26</sup> Yet again, proponents of terrestrial uses minimize the significant uses in the C-Band that are dependent on the flexibility of full-band, full-arc.

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(“The ability to quickly shift frequencies, azimuths, and/or elevation angels is one of the key factors that makes the C-Band as reliable as it is and that allows it to function correctly from both business and operational perspectives.”); NAB at 13; Cumulus/Westwood Comments at 12-14; NABA Comments at 4; NCTA Comments at 24-28; NPR Comments at 7 (“[F]ull-band, full arc . . . is critical to the PRSS’s ability to provide uplink and downlink services to the public radio system with any assurances of ongoing business continuity”); QVC Comments at 7; SIA Comments at 21-24; WTA Comments at 3 (“The flexibility to change frequencies and receive antenna orientations is essential to the value of the C-Band satellite capacity on which WTA member companies and others rely.”).

<sup>24</sup> Comments of Broadband Access Coalition at 16 (“BAC Comments”).

<sup>25</sup> See T-Mobile Comments at 19 (arguing that the FCC should “eliminate the full-band, full-arc coordination policy, as it proposes, which will also more accurately depict the band’s current FSS use.”). Notably, the FCC’s recent request for receive-only applications seeks to “provide the Commission and commenters with more accurate information about existing earth stations” which should minimize T-Mobile’s concerns. See *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 3.7-4.2 GHz Band*, GN Docket Nos. 17-183, 18-122, Public Notice, DA 18-398, at 1 (IB, PSHSB, WTB Apr. 19, 2018).

<sup>26</sup> Content Companies Comments at 9-10 (recognizing that “none of the proposals to date have offered suitable alternatives to the flexibility that full-band, full-arc protection allows”). See also GCI Initial Comments at 12.

*Compensation:* There is widespread agreement that sufficient compensation must be provided to earth station operators to make them whole for all costs incurred as a result of all or part of the C-Band transitioning to terrestrial service, regardless of the ultimate mechanism adopted by the FCC.<sup>27</sup> As ACA explains, these costs should go “beyond the immediate expenses of filtering, updating equipment, and relocating facilities”<sup>28</sup> and also should reflect ongoing costs, such as “a likely increase in backhaul prices as backhaul capacity becomes scarcer” and costs associated with loss of competition.<sup>29</sup> As noted previously by GCI, such compensation could include, but not be limited to: equipment and installation costs; research and development for potential alternatives; increased operating expenses as a result of more remote C-Band equipment;<sup>30</sup> replacement earth station antennas; associated installation and structural support; and any other cost that is a direct result of action taken by the FCC in this proceeding.<sup>31</sup> In addition, compensation should also reflect the business impact of removing resources from new revenue generating projects and of disrupting customers and resources.<sup>32</sup> GCI agrees that any compensation plan must be transparent, enforceable and significant enough to make incumbents operators completely whole. Incumbents must be informed of these compensation

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<sup>27</sup> ACI Comments at 17-22; Cumulus/Westwood Comments at 17-18 (“[T]he Commission must establish a compensation mechanism to reimburse all incumbent earth stations for all of the costs in accommodating the new wireless entrants.”); NCTA Comments at 7; NABA Comments at 1; Speedcast Comments at 9 (urging the Commission to “provide a mechanism to compensate incumbent licensees for their costs of accommodating new terrestrial services”).

<sup>28</sup> ACA Comments at 16. *Cf.* CBA Comments at 19-20, Exhibit 2 (suggesting that users would be compensated for costs associated with purchasing and using filters).

<sup>29</sup> ACA Comments at 16.

<sup>30</sup> Indeed, if the FCC adopts its proposal to move C-Band operations to more rural and remote areas, rather than urban areas, the FCC would also need to account for – and reimburse – the increased operating costs associated with keeping satellites in operation for those limited areas.

<sup>31</sup> *See* GCI Initial Comments at 20-21.

<sup>32</sup> *Id.*

considerations in advance of the transition so that they can plan accordingly, and the FCC must enforce these guarantees because incumbents will be relying upon them in developing future business plans.

### **III. ADDITIONAL TECHNICAL INFORMATION CONCERNING THE VARIOUS APPROACHES TO TERRESTRIAL USE OF THE C-BAND MUST BE PROVIDED FOR PUBLIC REVIEW**

The record underscores that there are still numerous questions surrounding the market-based and auction-based proposals that must be addressed prior to receiving consideration by the Commission. While GCI, as a wireless carrier, understands the need for additional spectrum for terrestrial use, the Commission should not move forward with any such plan with incomplete information. GCI reiterates that the Commission's top priority should be to ensure that incumbent operations are protected, and therefore, at a minimum, the Commission must require more detailed information about the protections that each proposal would provide for incumbent operations and how the FCC would enforce these protections. The FCC also must ensure transparency throughout the entire process in order to allow interested parties to make educated decisions about the proposals under review.

As an initial matter, by most accounts, there have been *tens of thousands* of receive-only earth station registration and/or licensing applications filed with the FCC pursuant to the recent filing window.<sup>33</sup> The FCC must review and analyze this new information and how these

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<sup>33</sup> *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 3.7-4.2 GHz Band*, GN Docket Nos. 17-183, 18-122, Public Notice, DA 18-398 (IB, PSHSB, WTB Apr. 19, 2018); *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*, GN Docket Nos. 17-183, 18-122, Public Notice, DA 18-639 (IB June 21, 2018); *International Bureau Announces Two-Week Extension of Filing Window for Earth*

registrations will impact the proposals to introduce terrestrial services. GCI agrees with AT&T that the FCC should

develop further information that helps characterize the actual usage in the band, including the capacity used today, the potential drivers of FSS usage in the C-band, the capacity that would exist in a smaller but more efficient post-transition FSS C-band ecosystem, the efficiency enhancements that could be deployed to increase capacity in the remaining FSS C-band, and how the investments in added capacity and enhanced or modified terrestrial equipment would be made to ensure C-band users remain whole.<sup>34</sup>

Once that information has been digested and released, the proposals under review must specifically address each aspect of the current C-Band landscape in their proposals – especially with respect to protections of incumbent services – and put forth a detailed plan that sets forth how the proposal will accommodate all of the incumbents pursuant to this new information.

Specifically, the FCC should require detailed technical studies to be prepared and released in conjunction with a written transition plan by each proposal under review in the NPRM. As noted above, the “trust us” approach is not adequate for a situation where *tens of thousands* of earth stations may be impacted by significant changes to the operational rules of a band. The FCC should require any proponent of terrestrial use prepare and submit for public review detailed technical showings using real-world conditions demonstrating exactly how incumbent FSS operations will be protected. As an example, the C-Band Alliance (“CBA”) has proposed the use of filters to protect incumbent operations but has yet to provide sufficiently detailed information to demonstrate how these filters will work, a testing process or a relevant

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*Stations Currently Operating in 3.7-4.2 GHz Band*, GN Docket No. 18-122, Public Notice, DA 18-1061 (IB Oct. 17, 2018).

<sup>34</sup> AT&T Comments at 8.



timeframe.<sup>35</sup> Vague conclusory assurances do not replace factual testing and finding, and the FCC should require that the CBA provide such information before a decision is reached.

This information should be required to be disclosed in a written, public transition plan that should be submitted to the FCC for approval and ultimately reflect substantial input from incumbent C-Band users.<sup>36</sup> Operators like GCI that have built their businesses based on unfettered access to the C-Band for the past 35+ years need tangible proof, rather than vague, unsupported statements, to adequately understand and prepare for changes to C-Band, and the resulting impact on their operations and businesses going forward.

In addition to providing specific details on protections, the public transition plan should also include a substantially detailed timeline for the transition – which FSS operators will be afforded the opportunity to comment on – in order to ultimately provide adequate transparency to incumbents to plan accordingly. The plan should also include a detailed breakdown of expected costs (and reimbursements) for the transition, and outline specific compensation mechanisms for displaced C-Band operators.

Finally, the Commission must also take a larger oversight role in this proceeding and any transition going forward. Incumbent C-Band users have expressed concerns over the lack of enforcement of certain of these proposals.<sup>37</sup> With the potential for significant changes in the C-

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<sup>35</sup> CBA Comments at 19-20.

<sup>36</sup> *See, e.g.*, NAB Comments at 6 (“Any accommodation plan should be fully transparent; it should be submitted to the commission for approval, reflect substantial input from C-band users, and provide remedies in the event any C-band user is not fully protected or successfully relocated.”); Content Companies Comments at 7.

<sup>37</sup> *See* Charter Comments at 4 (“[A]ny process enacted . . . must include appropriate FCC oversight to ensure protection of all incumbents.”).

Band, the Commission must ensure that protections are instituted, and timelines and promised compensation are honored.

#### **IV. THE MAJORITY OF COMMENTERS AGREE THAT THE FCC SHOULD REFRAIN FROM INTRODUCING FIXED P2MP SERVICES INTO THE C-BAND**

Furthermore, virtually all commenters (other than those seeking to deploy fixed services on the C-Band) agree that P2MP services cannot be deployed without drastically disrupting FSS services.<sup>38</sup> These commenters submit that a P2MP fixed service would add encumbrances by requiring widespread frequency coordination, which in turn, would strip FSS operators of the ability to change frequencies in real-time to address outages or cover breaking news or other live events. As explained above – and underscored extensively in the record – the full-band, full-arc coordination policy is a fundamental aspect of FSS C-Band service, and without such a policy, the FSS service would not be able to exist.<sup>39</sup> Commenters in support of introducing a fixed P2MP service on a co-channel sharing basis suggest that FSS services could coexist, but fail to offer any technical solution that would replace the full-band, full-arc capabilities that would allow these incumbent services to continue. GCI has previously robustly described why such fixed services should not be deployed in this band. The FCC should reject the Broadband Access Coalition (“BAC”) proposal and the introduction of additional fixed terrestrials services to the C-Band.

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<sup>38</sup> See AT&T Comments at 12-13; Content Company Comments at 10-11; CTIA Comments at 25-27; Cumulus/Westwood Comments at 18; GCI Initial Comments at 21-24; NAB Comments at 12-13; NABA Comments at 1-2; NCTA Comments at 21-22; Nokia Comments at 9; NPR Comments at 13-14; PSSI Comments at 11, 15; T-Mobile Comments at 21; Comments of Telecommunications Industry Association at 8; WTA Comments at 3; SIA Comments 20-29.

<sup>39</sup> See *supra* Section III.

## V. CONCLUSION

FSS operators such as those of GCI and various interested parties in this proceeding have relied upon unencumbered access to the entire 500 MHz offered in the 3.7-4.2 GHz band for many years to provide critical, reliable services to customers in remote or rural areas. The record in this proceeding confirms that the FCC's top priority should be to ensure adequate protections, flexibility, and funding be afforded to incumbent FSS operators to allow critical incumbent C-Band services to continue in the event that terrestrial services enter the band. To do so, the FCC must (1) require that additional technical data demonstrating that such protections are viable along with a detailed transition plan be submitted by proponents of proposals under review in the NPRM for public comment, and (2) exercise appropriate oversight over enforcement of these protections and the transition process as a whole. The FCC should reject proposals to introduce P2MP fixed services to the C-Band due to catastrophic interference concerns.

Respectfully submitted,

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November 27, 2018