



December 22, 2009

Chairman Julius Genachowski  
Commissioner Michael Copps  
Commissioner Robert McDowell  
Commissioner Mignon Clyburn  
Commissioner Meredith Attwell Baker  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
12<sup>th</sup> Street Lobby, TW-A325  
Washington, DC 20554

**Re: Written *Ex Parte* Communication, GN Docket No. 09-51,  
ET Docket Nos. 02-380, 04-186**

Dear Chairman Genachowski and Commissioners Copps, McDowell, Clyburn and Baker:

FiberTower Corporation (“FiberTower”), the Rural Telecommunications Group, Inc. (“RTG”), and Sprint Nextel Corporation (“Sprint Nextel”) (collectively, the “Petitioners”) hereby reiterate their Request for Expedited Consideration of their pending Petition for Reconsideration in the Commission’s TV White Spaces proceeding.<sup>1</sup>

The National Telecommunications and Information Administration (“NTIA”) and the Rural Utilities Service (“RUS”) recently sought comment in a Joint Request for Information (“RFI”) on funding priorities and objectives for the Broadband Technology Opportunities Program (“BTOP”) and Broadband Initiatives Program (“BIP”), including whether they should focus on or limit second round funding to projects that will deliver certain middle mile infrastructure to communities.<sup>2</sup> As discussed in the attached comments submitted by FiberTower and RTG in response to the RFI, funding middle mile projects would be an efficient and cost-effective way to expand access to broadband services in unserved and underserved areas, and the beneficial impact would be greatly enhanced if it were combined with a swift Commission decision to authorize licensed, fixed point-to-point use of a portion of the TV White Spaces, as

<sup>1</sup> Request for Expedited Consideration filed by FiberTower, RTG, COMPTTEL, and Sprint Nextel, ET Docket Nos. 04-186, 02-380 (filed July 14, 2009).

<sup>2</sup> Joint Request for Information, Rural Utilities Service and National Telecommunications and Information Administration, 74 Fed. Reg. 58940, 58942 (Nov. 16, 2009).

the Petitioners have proposed.<sup>3</sup> The favorable propagation characteristics of the TV White Spaces, as well as the readily available small lightweight antennas for the band, would reduce the middle mile backhaul and transport costs by as much as 80-90% in rural areas.

To support and enhance the efforts of NTIA and RUS to stimulate cost-effective broadband access and use in rural areas, the FCC should adopt the Petitioners' proposal on an expedited basis or provide narrowly tailored waivers for BTOP and BIP applicants seeking to deploy middle mile infrastructure. Other parties, such as COMPTTEL, T-Mobile USA, the Wireless Communications Association International, and the National Telecommunications Cooperative Association, have also endorsed this proposal. Although this approach would only provide a partial solution to the high cost of transit and transport in rural areas, it would provide an urgently needed, cost-effective tool for affordable "middle mile" backhaul and transport for carriers and Internet service providers in rural areas, with a dramatic cost savings compared to other (largely wireline) backhaul transit and transport options.

Respectfully submitted,

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<sup>3</sup> The Petitioners have encouraged the FCC to allow licensed, fixed point-to-point use of the TV White Spaces on UHF TV Channels 21-35 and 39-51 for: (1) up to six vacant TV White Spaces channels second or greater adjacent to a TV broadcast station in rural counties; and (2) any vacant TV White Spaces channels third or greater adjacent to a TV broadcast station in all counties.

**Before the  
National Telecommunications and Information Administration  
and the  
Rural Utilities Service  
Washington, D.C.**

In the Matter of	)	
	)	
American Recovery and Reinvestment Act of 2009	)	Docket No. 0907141137-91375-05
	)	
Broadband Initiatives Program	)	RIN: 0572-ZA01
	)	
Broadband Technology Opportunities Program	)	RIN: 0660-ZA28

**COMMENTS OF FIBERTOWER CORPORATION AND  
THE RURAL TELECOMMUNICATIONS GROUP, INC.**

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November 30, 2009

## **EXECUTIVE SUMMARY**

FiberTower Corporation (“FiberTower”) and the Rural Telecommunications Group, Inc. (“RTG”) urge NTIA and RUS to continue to focus significant second round BTOP and BIP funds on middle mile infrastructure projects in addition to last-mile projects. Middle mile infrastructure projects are extremely cost-effective because they can be accessed by a wide variety of users, including community anchor institutions, businesses, and providers of retail broadband services. There is a woefully inadequate supply of critical middle mile infrastructure, especially in rural areas, and if this rural middle mile gap is not filled quickly, the promise of universal broadband will never be realized.

Funding middle mile projects would be an efficient and cost-effective way to expand access to broadband services in unserved and underserved areas, and the beneficial impact would be greatly enhanced if it were combined with a swift FCC decision to authorize fixed, point-to-point licensed use of a portion of the TV White Spaces. FiberTower and RTG have encouraged the FCC to allow licensed, fixed point-to-point use of the TV White Spaces on UHF TV Channels 21-35 and 39-51 for: (1) up to six vacant TV White Spaces channels second or greater adjacent to a TV broadcast station in rural counties; and (2) any vacant TV White Spaces channels third or greater adjacent to a TV broadcast station in all counties. To support and enhance the efforts of NTIA and RUS to stimulate cost effective broadband access and use in rural areas, the FCC should adopt this proposal or waive its rules as necessary for BTOP and BIP applicants seeking to deploy middle mile infrastructure. Doing so would provide an urgently needed, cost-effective tool for affordable “middle mile” backhaul and transport for carriers and Internet service providers in rural areas, with a dramatic cost savings compared to other backhaul transit and transport options.

**Before the  
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**COMMENTS OF FIBERTOWER CORPORATION AND  
THE RURAL TELECOMMUNICATIONS GROUP, INC.**

FiberTower Corporation (“FiberTower”) and the Rural Telecommunications Group, Inc. (“RTG”) submit these Comments in response to the Joint Request for Information (“*RFI*”)<sup>1</sup> from the National Telecommunications and Information Administration (“NTIA”) and the Rural Utilities Service (“RUS”). As part of the *RFI*, NTIA and RUS seek comment on funding priorities and objectives for the Broadband Technology Opportunities Program (“BTOP”) and Broadband Initiatives Program (“BIP”), including whether they should focus on or limit second round funding to projects that will deliver certain middle mile infrastructure to communities.<sup>2</sup>

As discussed more fully below, FiberTower and RTG urge NTIA and RUS to focus significant second round BTOP and BIP funds on middle mile infrastructure projects in addition to last-mile projects. Funding middle mile projects would be an efficient and cost-effective way to expand access to broadband services in unserved and underserved areas. NTIA and RUS are

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<sup>1</sup> Joint Request for Information, Rural Utilities Service and National Telecommunications and Information Administration, 74 Fed. Reg. 58940 (Nov. 16, 2009) (“*RFI*”).

<sup>2</sup> *Id.* at 58942.

already well aware of the woefully inadequate supply of critical middle mile infrastructure, especially in rural areas.<sup>3</sup> This dearth of supply, and the related smaller number of potential middle mile users in rural areas, have made the cost of transit and transport services in rural markets twenty-five times greater than in urban areas.<sup>4</sup> If this rural middle mile gap is not filled quickly, the promise of universal broadband will never be realized.

As the *RFI* makes clear, middle mile infrastructure projects are extremely cost-effective because they can be accessed (either directly or indirectly) by a wide variety of users, including community anchor institutions such as educational, health care, and public safety organizations, as well as by businesses and providers of retail broadband services. Such projects thus “contribute to sustainable community growth and prosperity,” “stimulate the development of last mile services that would directly reach end users in unserved and underserved areas” and can “have a transformative impact on community development by driving economic growth.”<sup>5</sup> Moreover, as the Federal Communications Commission (“FCC”) has explained, “[t]o provide broadband service to consumers and small businesses in an area, a broadband Internet service

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<sup>3</sup> Notice of Funds Availability, Rural Utilities Service and National Telecommunications and Information Administration, at 24-25, 42 (rel. Jul. 1, 2009) (“*NOFA*”), available at <http://www.ntia.doc.gov/>; see also 74 Fed. Reg. 32545 (Jul. 8, 2009) (allocating up to \$1.2 billion in BTOP funds for broadband infrastructure projects – including middle mile projects – and up to \$800,000,000 in BIP funds specifically for loans or loan and grant combinations for middle mile infrastructure projects). The *NOFA* defines a “middle mile project” as “a broadband infrastructure project that does not predominantly provide broadband service to end users or to end-user devices, and may include interoffice transport, backhaul, Internet connectivity, or special access.” *Id.* at 21.

<sup>4</sup> See “Broadband Gaps,” Federal Communications Commission, 9 (presented Nov. 18, 2009), available at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-294708A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-294708A1.pdf) (“FCC November Broadband Plan Presentation”).

<sup>5</sup> *RFI* at 58942.

provider needs to have adequate, reasonably priced, and efficiently provided access to . . . middle mile connectivity.”<sup>6</sup>

Despite the obvious benefits of middle mile infrastructure projects, government subsidies for such projects are often needed to make them viable in rural areas because of the lower number of potential users. During the public BTOP meetings NTIA and RUS held earlier this year, for example, participants called middle mile the “key issue”;<sup>7</sup> a “critical component”;<sup>8</sup> “one of the biggest challenges”;<sup>9</sup> and a “barrier to entry.”<sup>10</sup> Other participants highlighted the significant costs associated with obtaining adequate backhaul services.<sup>11</sup> Such subsidies remain far and few between, however, and the Universal Service Fund does not directly pay for middle mile costs.<sup>12</sup>

The *RFI* also raises several questions about the “cost effectiveness or cost reasonableness” of particular projects, noting that “extremely rural companies typically have

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<sup>6</sup> *Comment Sought on Impact of Middle and Second Mile Access on Broadband Availability and Deployment – NBP Public Notice #11*, GN Docket Nos. 09-47, 09-51, 09-137, Public Notice, DA 09-2196, 2 (rel. Oct. 8, 2009).

<sup>7</sup> Oral comments of Gaylen Updike, Telecommunications Development Director, Government Information Technology Agency, State of Arizona, at the NTIA/RUS BTOP public meeting, March 18, 2009, Session 2.

<sup>8</sup> Oral comments of Evelyn Jerden, CPA, Lynch Interactive Communication Technology, at the NTIA/RUS BTOP public meeting, March 18, 2009, Session 2.

<sup>9</sup> Oral comments of an unidentified Phoenix-based ISP provider, at the NTIA/RUS BTOP public meeting, March 18, 2009, Session 2.

<sup>10</sup> Oral comments of John Lucas, Chief Information Officer, Graham County, at the NTIA/RUS BTOP public meeting, March 18, 2009, Session 2.

<sup>11</sup> *See, e.g.*, Oral comments of attendees at the NTIA/RUS BTOP public meetings: Kelly Bonnham (representative of a rural last mile and backhaul provider), March 19, 2009, Session 3 (“We pay on some of our networks when we get rural service from other carriers as much as \$700 a megabit for backhaul.”); Mark Feest, Director of External Affairs for CC Communications, Fallon, Nevada, March 17, 2009, Session 3.

<sup>12</sup> *See* FCC November Broadband Plan Presentation at 9.

much higher construction costs than more densely populated ones.”<sup>13</sup> Funding for middle mile infrastructure projects would be far more cost effective if the FCC makes a swift decision to authorize fixed, point-to-point licensed use of a portion of the TV White Spaces. FiberTower and RTG have filed numerous pleadings in the FCC’s TV White Spaces proceeding encouraging the FCC to allow licensed, fixed point-to-point use of the TV White Spaces on UHF TV Channels 21-35 and 39-51 for: (1) up to six vacant TV White Spaces channels second or greater adjacent to a TV broadcast station in rural counties; and (2) any vacant TV White Spaces channels third or greater adjacent to a TV broadcast station in all counties.<sup>14</sup> To support and enhance the efforts of NTIA and RUS to stimulate cost effective broadband access and use in rural areas, the FCC should adopt this proposal or waive its rules as necessary for BTOP and BIP applicants seeking to deploy middle mile infrastructure. As FiberTower and RTG have explained previously in filings with the FCC, in unserved and underserved areas, licensed, fixed point-to-point wireless services are the most efficient and most needed use for the TV White Spaces.<sup>15</sup> The proposed backhaul and other fixed wireless systems can literally “light” an

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<sup>13</sup> *RFI* at 58944.

<sup>14</sup> Reply Comments of FiberTower, RTG, COMPTEL, and Sprint Nextel – NBP Public Notice #6, GN Docket Nos. 09-47, 09-51, 09-137 (filed Nov. 13, 2009) (“Nov. 13 Comments”); *Ex Parte* filing by FiberTower, Sprint Nextel, RTG, and COMPTEL, GN Docket No. 09-51 and ET Docket Nos. 04-186, 02-380 (filed Nov. 11, 2009); Comments of FiberTower, RTG, COMPTEL, and Sprint Nextel – NBP Public Notice #11, GN Docket Nos. 09-47, 09-51, 09-137 (filed Nov. 4, 2009); *Ex Parte* filing by FiberTower, Sprint Nextel, RTG, and COMPTEL, ET Docket Nos. 04-186, 02-380 (filed Oct. 28, 2009); Comments of FiberTower, RTG, COMPTEL, and Sprint Nextel – NBP Public Notice #6, GN Docket Nos. 09-47, 09-51, 09-137 (filed Oct. 23, 2009); Request for Expedited Consideration filed by FiberTower, RTG, COMPTEL, and Sprint Nextel, ET Docket Nos. 04-186, 02-380 (filed July 14, 2009); Reply to Oppositions filed by FiberTower, RTG, COMPTEL, and Sprint Nextel, ET Docket Nos. 04-186, 02-380 (filed May 18, 2009) (“Reply to Oppositions”); Petition for Reconsideration filed by FiberTower, RTG, COMPTEL, and Sprint Nextel, ET Docket Nos. 04-186, 02-380 (filed Mar. 19, 2009); *Ex Parte* filing by FiberTower, Sprint Nextel, RTG, and COMPTEL, ET Docket Nos. 04-186, 02-380 (filed Oct. 31, 2008); “Optimizing the TV Bands White Spaces: A Licensed, Fixed-Use Model for Interference-Free Television and Increased Broadband Deployment in Rural and Urban Areas,” *Ex Parte* filing by FiberTower and RTG, ET Docket Nos. 04-186, 02-380 (filed Oct. 2, 2007).

<sup>15</sup> Nov. 13 Comments at 5; Reply to Oppositions at 3.

unserved or underserved community by connecting its mobile, wireline, commercial, public safety, educational, medical, and government broadband needs back to switches or the Internet, on a more cost-effective basis than anything else currently available.<sup>16</sup>

Although an FCC decision to implement the proposal or to provide narrowly tailored waivers for licensed, fixed point-to-point use of the TV White Spaces to BTOP or BIP applicants expeditiously would only provide a partial solution to the high cost of transit and transport in rural areas, this approach would provide an urgently needed, cost-effective tool for affordable “middle mile” backhaul and transport for carriers and Internet service providers in rural areas, with a dramatic cost savings compared to other (largely wireline) backhaul transit and transport options.

Authorizing new, higher-powered, licensed, point-to-point service in a portion of the TV White Spaces would provide an important tool for reducing the costs of middle mile backhaul and transport by as much as 80-90% in rural areas and enhance broadband deployment. The favorable propagation characteristics of the TV White Spaces make the bands ideal for transporting traffic over very long distances (*e.g.*, 50-70 miles and longer) at low cost.<sup>17</sup> For example, the availability of off-the-shelf components – given the longtime use of the TV Bands for point-to-point links in the Broadcast Auxiliary Service – makes it possible to construct a single 100-mile wireless backhaul or transport link at a cost of \$100,000-200,000 using two small lightweight antennas. The cost of covering the same distance using the 3.65 GHz or 6 GHz bands would be \$3 million or more and require as many as four relay towers and a total of 10 six-foot diameter dish antennas.

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<sup>16</sup> *See id.*

<sup>17</sup> Distance is directly correlated to different variables, which include and are not limited to: power, signal availability, data throughput, antenna characteristics and locations, and channel placement within the TV White Spaces.

The feasibility of using the TV bands for middle mile services is also enhanced by the fact that unused TV channels are widely available in rural areas, with anywhere from 15-45 or more vacant channels available. And, in contrast to the introduction of unlicensed portable services in the TV band, the introduction of fixed, point-to-point operations does not raise complex sharing and interference issues with respect to TV band incumbents and users.<sup>18</sup> Finally, the proposal can be easily incorporated into the FCC's existing Part 101 rules, which have long been used for the licensing of fixed wireless links, or it could be implemented initially through blanket or case-by-case waivers to ensure faster availability for grant applicants.

NTIA and RUS, as well as the FCC, must act aggressively in order to achieve the goal of universal broadband. Time is of the essence and, given the weakened state of the economy, private investment capital is extremely scarce. NTIA and RUS can make great strides in filling the broadband gap that currently exists in rural areas by focusing their limited resources on cost-effective middle mile infrastructure projects that can be leveraged by a wide variety of potential users, and the beneficial impact would be greatly enhanced if it were combined with a swift FCC decision to authorize the licensing of fixed operations in the TV White Spaces, consistent with the pending proposal.

Respectfully submitted,

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<sup>18</sup> For example, the TV Bands have for many years been used for point-to-point links in the Broadcast Auxiliary Service, some of which are 50-80 miles long or more.