

**Before the
DEPARTMENT OF COMMERCE
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
Washington, DC**

In the Matter of)

American Recovery and Reinvestment Act)
of 2009 Broadband Initiatives)

) Docket No. 090309298-9299-01
)
)

RESPONSES OF FIBERTOWER CORPORATION

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EXECUTIVE SUMMARY

FiberTower operates a 100% facilities-based telecommunications network using fiber optic and wireless assets and leads the nation in providing fixed wireless backhaul services to mobile wireless sites. FiberTower urges NTIA to address the critical shortage of “middle mile” and “last mile” backhaul and transport capacity by ensuring that its rules encourage backhaul and transport platforms designed to support, among others, mobile wireless carriers, first responder networks, government, education and medical entities, incumbent and competitive local exchange carriers, and enterprise applications.

NTIA should award grants to applicants that demonstrate that their respective projects benefit the public interest and serve the greatest number of end users and entities. NTIA should include in its mapping efforts broadband enabled towers and buildings, and record whether such structures contain platforms that allow multiple end users and carriers to access backhaul and transport capacity. Every applicant must be required to demonstrate how its grant fills the particular broadband telecommunications needs in the area that confronts end users, businesses, fiber-extensions or mobile wireless providers. NTIA should also consider the economic benefits and the ability to create long-term job growth.

NTIA should, as directed by Congress, seek the states’ input in crafting BTOP policies. However, the NTIA should prioritize projects that offer quickly deployable yet sustainable broadband access to the widest geographic and population audiences in unserved and underserved areas, regardless whether the proposal emanates from a private or public source. NTIA should define BTOP grant standards broadly so that public and private entities may apply for BTOP funding for a wide variety broadband-related projects.

NTIA’s selection criteria should permit grants to all types of broadband and infrastructure providers to the extent that such providers have demonstrated that the proposed broadband infrastructure projects will benefit the public interest, create jobs, and will be sustainable after the initial investment of government funding. NTIA should ensure that the development of its broadband maps reveal the deployment of backhaul infrastructure.

FiberTower offers the following recommendations with respect to the terms NTIA is obligated to define in structuring the grant program:

- Unserved/Underserved Areas. NTIA should consider an area without middle mile and last mile backhaul and transport solutions accessible to multiple end users and carriers as “underserved” even if such area has a broadband service provider.
- Broadband Service. NTIA should ensure that broadband service is defined in a technologically-neutral manner. NTIA should ensure that any adoption of upload/download broadband speeds accurately reflects the differences between broadband wireline and broadband wireless services and promotes inclusiveness among the many existing and emerging broadband solutions.

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RESPONSES OF FIBERTOWER CORPORATION

FiberTower Corporation (“FiberTower”) hereby submits its responses to the questions issued by the Department of Commerce’s National Telecommunications and Information Administration (“NTIA”) regarding implementation of the Broadband Technology Opportunities Program (“BTOP”).^{1/}

INTRODUCTION AND SUMMARY

FiberTower operates a 100% facilities-based telecommunications network using fiber optic and wireless assets and leads the nation in providing fixed wireless backhaul services to mobile wireless sites. FiberTower utilizes its strategic partnerships with tower operators to deploy carrier-class and government-class networks. FiberTower holds geographic-area licenses issued by the Federal Communications Commission (“FCC”), including more than 600 (100 MHz-wide) licenses in the 38.6-40.0 GHz band (commonly referred to as the “39 GHz band”) and licenses in the 24 GHz band that cover the top 77 United States markets. Its footprint covers 99% of the nation and over 284 million people. FiberTower supports NTIA’s broadband stimulus efforts and urges it to address critical “middle mile” and “last mile” broadband backhaul

^{1/} Notice, *American Recovery and Reinvestment Act of 2009 Broadband Initiatives Joint Request for Information and Notice of Public Meetings*, Docket No. 090309298-9299-01, 74 FED. REG. 10716-10721 (published March 12, 2009) (“Notice”).

and transport facility shortages -- particularly in unserved and underserved areas -- by ensuring that its rules encourage providers to successfully apply for grants to provide backhaul and transport designed to support, among others, mobile wireless carriers, public safety, government, education and medical entities, incumbent and competitive local exchange carriers (“ILECs” and “CLECs”), and enterprise applications.

Middle mile and last mile backhaul and transport broadband services are critically necessary for all broadband networks, whether they ultimately support carrier, enterprise, or government operations. Backhaul and transport infrastructure connects last mile end-user networks, including those that serve first responders, municipal buildings, medical facilities, schools, and libraries to the Internet or to network switching centers.^{2/} In short, absent such infrastructure, broadband networks cannot operate. Moreover, backhaul or transport infrastructure must be built before end users can fully realize the benefits of new unlicensed and licensed broadband networks and devices. In fact, backhaul is often considered the “Achilles heel” to achieving broadband connectivity to end users, whether in mobile networks or direct transport to a building. Today’s backhaul and transport infrastructure, which has not been upgraded in two decades, has not kept pace with other network enhancements. This lack of development has inhibited the growth, service quality and operational efficiencies of broadband services.

The lack of last mile and middle mile backhaul and transport services is particularly problematic in rural areas because of the often great distances between a local network and an

^{2/} See FiberTower Corporation, the Rural Telecommunications Group, Inc., COMPTTEL, and Sprint Nextel Corporation, Letter and Petition for Reconsideration, FCC GN Docket No. 09-29, at 2 (filed March 25, 2009) (“*FiberTower, et. al. Ex Parte*”).

Internet connection.^{3/} The further the distance of transport, the more costly the service is to provide. The high cost of constructing and deploying middle mile and last mile backhaul and transport facilities has, therefore, become a barrier to the widespread availability of affordable broadband services.^{4/}

Because of the importance of middle mile and last mile and backhaul and transport capabilities, Congress explicitly envisioned that BTOP funding should be provided for deployment of such infrastructure.^{5/} Accordingly, NTIA should shape the BTOP program to facilitate the receipt of grant funds by entities providing these services. Not only will the provision of grant funding for wireless backhaul and transport help address the current deficiencies in these services, but it will have a direct effect on many other end-user broadband networks. A single wireless backhaul or transport system can facilitate the connection to the Internet or other telecommunications network of buildings and towers employed by multiple carriers, public safety entities and enterprise users. Therefore, grant funding to wireless backhaul and transport providers will facilitate the accessibility of broadband capacity to multiple constituencies, resulting in the creation of jobs and other economic growth within those constituencies.

^{3/} See, e.g., Comments of Verizon and Verizon Wireless, FCC GN Docket No. 09-29, at 11 (filed March 25, 2009).

^{4/} See, e.g., New America Comments, FCC GN Docket No. 09-29, at 5 (Mar. 25, 2009) (stating that increasing “access to the high-speed middle mile links that carry Internet traffic to the backbone, and the escalating costs associated with transporting traffic among networks, have become fundamental barriers to spreading connectivity, promoting broadband competition, improving speeds and lowering prices.”).

^{5/} H.R. REP. NO. 111-16, at 775 (2009) (“Conference Report”) at 774.

I. NTIA SHOULD PURSUE THE FOLLOWING GOALS IN MAKING BROADBAND GRANTS

A. “Best Bang for the Buck”: Promote Projects That Meet Multiple BTOP Program Goals (Answer to Question 1a, 1b)

NTIA notes that Section 6001 of the American Recovery and Reinvestment Act (“ARRA”) establishes five purposes of the BTOP program and asks whether funds should be apportioned among the categories intended to satisfy those purposes. NTIA should not designate a particular percentage of grant funds to be apportioned to each specific purpose of BTOP.^{6/} Rather, NTIA should have the flexibility to award grants to applicants that demonstrate that their respective projects benefit the public interest and serve the greatest number of end users and entities. Every applicant must be required to demonstrate how its grant will fill the particular broadband telecommunications needs of either end users, businesses, or last-mile providers. NTIA should also consider the economic benefits and the ability to create long-term job growth that may result from each proposed project. Therefore, applicants should be required to demonstrate the various industry sectors and end user groups for which economic stimulus and job growth will be created.

Providers of backhaul and transport services are uniquely situated to provide these widespread benefits. As noted above, backhaul systems serve multiple interests, carriers, and end users. This ability to confer benefits on multiple constituencies would result in the most intense use of BTOP grant funds -- the backhaul and transport provider, plus all associated local area network providers, plus each of those networks’ end users will benefit from the infrastructure development. Accordingly, FiberTower urges NTIA to adopt BTOP policies that ensure that “broadband reaches the greatest number of people with the greatest amount of needed

^{6/} Notice at 2-3; ARRA § 6001(b)(1)-(5).

services at an efficient price” and “that taxpayer funded projects advance the national interest for a robust and ubiquitous telecommunications infrastructure that is open and accessible to all service providers.”^{7/}

B. Provide the States a Tailored Role in Ensuring Sustainable High-Speed, High-Quality Broadband Networks (Answer to Questions 2a, 2b)

NTIA should, as directed by Congress, seek the states’ input in crafting BTOP policies. However, the NTIA should prioritize projects that offer quickly deployable yet sustainable broadband access to the widest geographic and population audiences in unserved and underserved areas, regardless whether the proposal emanates from a private or public source. Private entities with expertise in building backhaul and transport facilities are uniquely situated to bring broadband to unserved and underserved areas and thus benefit the public. Those entities stand ready today to construct middle mile networks to facilitate the long-term job creation and economic stimulus that the ARRA seeks.

FiberTower acknowledges that NTIA was advised by Congress that it could seek the advice and assistance from the States in crafting the BTOP guidelines.^{8/} States may play a valuable role by assisting NTIA determine which areas of the country are considered unserved or underserved. As recognized by Congress, “[s]tates have resources and a familiarity with local economic, demographic, and market conditions that could contribute to the success of the broadband grant program.”^{9/} Therefore, NTIA should work with the states to utilize their unique resources to determine the areas with the greatest need so that NTIA may quickly and efficiently distribute BTOP funds to entities positioned to develop networks or services in unserved and

^{7/} *FiberTower, et. al. Ex Parte* at 2; *see also* ARRA § 6001(j).

^{8/} ARRA § 6001(c).

^{9/} Conference Report at 775.

underserved areas. Nevertheless, excessive state involvement may impede program goals and add an additional layer of complexity and delay to the process -- delay and complexity that the United States economy can ill-afford. NTIA should also not authorize states to distribute BTOP funds. As directed by Congress, NTIA should remain the “sole authority to approve the awards.”^{10/}

C. Allow Broad Participation in a Sensible Manner (Answer to Question 3)

NTIA seeks input on the standards it should use to determine whether grant of BTOP funds to non-government entities is in the public interest. Such standards should be defined broadly so that public and private entities may apply for BTOP funding for a wide variety of broadband-related projects. Defining eligibility broadly would satisfy Congress’s explicit intent that the NTIA create a “broad definition of entities that are eligible to receive grants,” so that “as many entities as possible [will] be eligible to apply for a competitive grant, including wireless carriers, wireline carriers, backhaul providers, satellite carriers, public-private partnerships, and tower companies.”^{11/} A broad definition would also satisfy Congressional intent by ensuring that applicants, such as middle mile providers, are selected based on their ability to “best meet the broadband access needs of the areas to be served, whether by a wireless provider, a wireline provider, or any provider offering to construct last-mile, middle mile, or long haul facilities.”^{12/}

While NTIA should broadly define whether a particular project is in the public interest, it should give prominent consideration to economic and technical suitability and feasibility. Not every technology makes sense under every circumstance. For example, in some circumstances it is more economically rationale for NTIA to support the construction of fiber networks to deliver

^{10/} Conference Report at 775.

^{11/} *Id.*

^{12/} Conference Report at 774.

broadband capabilities, while in others, economics may dictate the use of wireless broadband facilities. Certain fiber deployments provide the ability to bring extremely high capacities to an area (OC-48, OC-192, etc). However, in situations where a defined building or area needs 2 Gbps or less, it makes sense to closely examine fixed wireless options. Trenched fiber build costs typically start at \$10 to \$35 per foot,^{13/} or \$5,280,000-to-\$18,480,000 per 100 miles, and may rapidly escalate to over \$200 per foot if barriers like airports, historical sites, graveyards, rivers, rock, mountains, roadways, preserves, and buildings are in the intended path. For lower capacity systems where wireless backhaul is appropriate, all of the broadband access necessary can be provided at a significantly reduced cost, preserving funds to meet other broadband needs.

As noted above, NTIA should also provide additional consideration to entities that can implement projects that have the ability to enhance broadband to different constituencies. Favoring providers that can implement projects that have the capability of facilitating many different types of broadband service ensures that the broadband funding is, in effect, multiplied in impact and scope. Funding a project that would allow a middle mile or last mile backhaul or transport provider to construct infrastructure would not only benefit the end users of the various networks that rely on the middle market solution, but would also spur job creation by end user providers and the entities that construct those facilities.

**D. Favor Projects that Most Positively Impact Commerce and End Users
(Answer to Question 4)**

NTIA asks about the factors it should consider in evaluating grant applications. NTIA's selection criteria should permit grants to all types of broadband and infrastructure providers to the extent that such providers have demonstrated that the proposed broadband infrastructure

^{13/} Wireless Communications Association International comments, NTIA Docket No. 090309298-9299-01 at 16 (filed April 9, 2009).

projects will benefit the public interest, create jobs, and will be sustainable after the initial investment of government funding. With respect to assessing the public interest served by middle mile projects, NTIA should first consider the potential broadband capacity which will be made available, the corresponding benefits to last mile networks, and the benefits that would accrue to ultimate end users.

NTIA should also consider the impact that the proposal will have on job creation. Middle mile and last mile backhaul and transport facilities projects spur job creation not solely related to the construction and maintenance of such facilities, but also spur downstream job creation. Jobs will be created by the construction and implementation of end user networks facilitated by middle mile and last mile backhaul and transport systems. Similarly, jobs will be created by enabling end users -- whether they are public safety entities, hospitals, carriers or enterprise customers -- to realize the benefits of broadband capabilities. Investment in middle mile and last mile backhaul and transport facilities will, therefore, have double the trickle down impact because retail broadband providers, residential and business end users will all benefit from the initial investment.

NTIA should evaluate the benefits that end users will ultimately receive from the development of middle mile and last mile backhaul and transport services. As recognized by parties filing comments at the FCC, no “community or network is an island” and escalating costs associated with carrying Internet traffic to the backbone and transporting traffic among networks, have become barriers to spreading connectivity, promoting broadband competition, improving speeds and lowering prices.^{14/} Accordingly, the implementation of additional middle mile and last mile backhaul and transport facilities to bring connectivity to unserved or underserved areas

^{14/} New America Comments at 5.

will effectively increase the number of interconnection points and routes, which will ultimately increase competition among end-user telecommunications providers.^{15/} Increasing the provision of services by middle mile and last mile backhaul and transport providers will also increase the scalability of rural networks -- essentially increasing their capability to run broadband network applications. Without such scalability, “rural networks will hit a wall in terms of speed and pricing as the capacity costs associated with increased traffic to the backbone will grow faster than profits.”^{16/} Therefore, NTIA should recognize that middle mile and last mile backhaul and transport providers bring large scale benefits to other service providers and communities at large.

Last, contrary to suggestions made during the NTIA’s recent roundtable meetings,^{17/} a state certificate of public convenience and necessity (“CPCN”) or FCC license should not be a prerequisite for grant eligibility. FiberTower recognizes that federal or state-issued authorizations often provide an indication that an entity is qualified and has the expertise to provide telecommunications services. It also recognizes that certain entities must have authorizations to contract with some middle mile providers. However, many middle mile and last mile providers are private carriers, are unregulated by state entities or operate with unlicensed spectrum and thus are not necessarily required to obtain regulatory authorizations. Thus, those providers should not be foreclosed from seeking BTOP funds solely based on their unregulated status.

^{15/} *Id.*

^{16/} *Id.*

^{17/} *See, e.g.,* Curt Stamp, President, Independent Telephone and Telecommunications Alliance, Comments at the Broadband Technology Opportunities Program Public Meeting on Private Sector Eligibility (March 16, 2009), transcript *available at* <http://www.ntia.doc.gov/broadbandgrants/meetings.html> (stating that eligibility should be defined based on governmental authorizations),

E. Map Broadband Enabled Towers and Buildings that Contain Platforms that Allow Multiple End Users and Carriers to Access Backhaul and Transport Capacity (Answer to Question 8)

NTIA asks about the type of information that should be included in the inventory map of broadband capability. NTIA should ensure that the development of its broadband maps reveals locations where accessible backhaul and transport infrastructure exists. Such maps should reflect middle mile and last mile bandwidth capacity at broadband enabled towers and buildings. Those maps should show whether those towers and buildings provide access to: 1) backhaul capacity to mobile commercial carriers; 2) first responder network backhaul; 3) fixed wireless or wireline fiber extensions to ILECs and CLECs; and 4) direct broadband transport to educational institutions, medical facilities, businesses, municipalities and state and federal government. FiberTower believes, and other commenting parties agree,^{18/} that the maps should contain these types of details to ensure that the BTOP funds are accurately targeted at programs and to areas the greatest in need.

F. Adopt Definitions that Reflect Industry Standards and Are Inclusive and Technologically-Neutral (Answer to Question 13)

Unserved/Underserved Areas. NTIA should not focus solely on the provision of service to end users when determining whether areas are unserved or underserved. NTIA should consider various forms of broadband -- all of which are critical to creating a nationwide broadband network -- and ensure that all of them are eligible for funding. NTIA should consider not only the availability of end-user services but whether an area has middle mile and last mile backhaul and transport facilities available. An area without such capabilities is unable to support

^{18/} See, e.g., New America Foundation Comments at 6 (stating that “rural broadband deployment, competition and affordability would also benefit enormously from a mapping of the public sector fiber networks used by federal, state and local public agencies nationwide.”).

the multiple broadband networks -- for carriers, enterprise customers, public safety entities and health care providers -- that will drive economic recovery.

NTIA should therefore consider an area without adequate middle mile and last mile backhaul and transport coverage as “underserved” even if such area has a broadband service provider. Applying a broader definition of “unserved” and “underserved” to encompass middle mile and last mile backhaul and transport facilities also reflects Congress’s intent to ensure that a variety of providers and services receive BTOP funding.^{19/} Moreover, ensuring that additional middle mile and last mile backhaul and transport providers deploy facilities will further the priorities of many in Congress to ensure that BTOP funds are used for broadband deployment that “spur[s] job creation in rural areas hardest hit by the recession . . . [and is] central to improving educational opportunities and delivering health care more efficiently, important benefits that also contribute to economic growth.”^{20/}

Broadband Service. As a threshold matter, NTIA should ensure that its policies embody Congress’s directive that broadband service be defined in a technologically-neutral manner. As noted above, Congress provided that grants should be awarded to any “recipient[] that will best achieve the broad objectives of the program” and those agencies distributing support funds are to do so to any recipient they “judge[] will best meet the broadband access needs of the area to be served, whether by a wireless provider, a wireline provider, or any provider offering to construct last-mile, middle-mile, or long haul facilities.”^{21/} NTIA should ensure that any adoption of upload/download broadband speeds accurately reflects the differences between broadband

^{19/} Conference Report at 774-775.

^{20/} See *Senators Urge Unserved Priority For ARRA Broadband Funds*, TR DAILY (Mar. 11, 2009).

^{21/} Conference Report at 774.

wireline and broadband wireless services, and also promotes inclusiveness among the many existing and emerging broadband solutions. Any criteria for transmission speeds should consider whether the end user networks are expandable and scalable so that providers can evolve their networks in the future.

Respectfully submitted,

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