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

In the Matter of	)	
The Commission's Consultative Role in the Broadband Provisions of the Recovery Act	)	GN Docket No. 09-40

COMMENTS OF ALLIED FIBER, LLC

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April 13, 2009

TABLE OF CONTENTS

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Allied Fiber, LLC ("Allied Fiber"), by and through its attorneys, hereby submits its comments in response to the Notice ("Notice")[1/] regarding the Federal Communications Commission ("FCC" or "Commission") consultative role in the implementation of the broadband programs specified in the American Recovery and Reinvestment Act of 2009 ("Recovery Act").[2/] The FCC has a crucial role to play in these deliberations given its expertise and its experience in funding rural broadband programs through the Universal Service Fund and the pilot program to fund broadband facilities for rural health care providers.[3/]

Allied Fiber, formed in June of 2008, plans to construct the most advanced national dark fiber network combining wireless towers and modern and abundant fiber with regeneration and colocation facilities that can be used to connect local, regional, national and international wireline and wireless networks to major telecommunications hubs and Internet backbones throughout the United States. The company's business plan is based on open access and carrier neutral interconnection.

1/ Notice, *Comment Procedures Established Regarding the Commission's Consultative Role in the Broadband Provisions of the Recovery Act*, GN Docket No. 09-40, DA 09-668 (rel. March 24, 2009).

2/ American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009).

3/ *Rural Health Care Support Mechanism*, Order, 21 FCC Rcd 11111 (2006) (establishing pilot program to support the construction of broadband networks).

SUMMARY

Congress directed the NTIA to consult with the FCC on the definitions of "unserved" and "underserved" areas and "broadband," and on non-discrimination and interconnection obligations that will be contractual conditions for receiving Recovery Act funds. In these comments, Allied Fiber will focus its remarks on the critical importance of carrier agnostic, technologically neutral access to middle mile and backhaul facilities. These facilities tie local broadband networks to Internet backbones. Middle mile facilities provide access from the last mile to the backhaul interconnection point and backhaul (a segment of a long haul network) provides access from that point to the Internet backbones and other networks in major interconnection points throughout the country. Without robust, affordable middle mile and backhaul facilities, the potential of last mile broadband networks will remain unfulfilled, and last mile investment may be lost. The access points to middle mile and backhaul facilities and the Internet backbone should be open to all carriers, regardless of technology. Neutral connectivity maximizes investment value by improving the broadband experience of every potential customer of every interconnected local network. Accordingly, we urge the FCC to consider the critical importance of carrier neutral middle mile and backhaul facilities in advising the NTIA.

Comments recently submitted to the FCC in the context of developing a rural broadband strategy emphasize the importance of enhancing middle mile and backhaul capacity, particularly in rural areas where distances between the local community network and the Internet connection are often vast.[4/] For example, an estimated 55 percent of rural telephone company switches are more than 70 miles away from an Internet backbone connection point, and 10 percent are more

[4/] *See, e.g.*, Comments of Verizon and Verizon Wireless on Report on Rural Broadband Strategy, GN Docket No. 09-29, at 11 (filed March 25, 2009) ("Verizon Comments") ("The inadequacy or high cost of the 'middle mile' has been highlighted as one of the significant barriers to greater broadband deployment in rural areas.").

than 200 miles away.[5/] Other studies indicate that the typical rural Internet Service Provider ("ISP") is located 91 miles from its primary backbone Internet connection.[6/] The farther the distance of transport, the more costly the service is to provide -- a problem that is exacerbated rather than alleviated as broadband traffic increases. Consequently, the high costs of constructing and deploying middle mile facilities is a formidable barrier to the widespread availability of affordable broadband services.[7/] Without access to adequate middle mile facilities sustainable broadband service to unserved and underserved areas, however defined, will not be possible.[8/]

5/ Comments of the National Exchange Carrier Association, Inc., GN Docket No. 09-29, at 5-6 (filed March 25, 2009) ("NECA Comments") (noting that "the high cost of middle mile backbone connections is an obstacle to providing broadband services in low-density rural markets" and that these costs must be addressed in any rural broadband strategy).

6/ New America Foundation, Comments, GN Docket No. 09-29, at 5 (filed March 25, 2009) ("New America Comments"); *see also* Comments of Sprint Nextel Corporation, GN Docket No. 09-29, at 5 (filed March 25, 2009) (reporting that the typical rural local exchange carrier is 98 miles from its primary Internet backbone connection). In addition, the FCC's definition of middle mile facilities as those that provide relatively fast, large-capacity connections between the Internet backbone and last mile means that middle mile facilities "can range from a few miles to a few hundred miles, especially in rural areas." Comments of DigitalBridge Communications Corp., GN Docket No. 09-29, at 8 (filed March 25, 2009) ("DigitalBridge Comments"); *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, Third Notice of Inquiry, 16 FCC Rcd 15515 (2001).

7/ *See, e.g.*, New America Comments at 5 ("No community or network is an island; and increasingly 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."); Comments of the Organization for the Promotion and Advancement of Small Telecommunications Companies, GN Docket No. 09-29, at 8 (filed March 25, 2009) ("OPASTCO Comments") ("Another significant obstacle that rural ILECs face in deploying broadband to additional rural consumers and increasing the broadband speeds that they offer is the high price of access to the Internet backbone. The price of backbone access is based upon mileage, among other factors, and the further removed a carrier is from a backbone facility, the higher the price they must pay.")

8/ *See, e.g.*, FiberTower Corporation, the Rural Telecommunications Group, Inc., COMPTEL, and Sprint Nextel Corporation, Letter and Petition for Reconsideration, GN Docket No. 09-29, at 2 (filed March 25, 2009) ("FiberTower *et al.* Submission") ("[Middle mile] infrastructure is necessary for broadband mobile wireless networks, first responder networks, and broadband connectivity to municipal buildings, including medical facilities, schools, and libraries. Absent this infrastructure, broadband networks . . . *cannot* operate.") (emphasis in original); New America Comments at 5 ("Without a

Addressing the middle mile is not merely a question of deploying additional capacity to local networks. The middle mile provider also needs affordable access to backbone fiber in order to provide backhaul to Internet connection and peering points. While the FCC, NTIA and RUS must digest and consider many diverse and often competing viewpoints with respect to implementation of the broadband provisions of the Recovery Act, one thing is certain: all entities agree that the middle mile and backhaul access problems must be resolved, a point driven home by comments to the FCC regarding rural broadband initiatives.[9/] Entities like the National Rural Telecommunications Cooperative ("NRTC"), have "urged NTIA and RUS to implement

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substantial investment to bring adequate middle mile fiber connectivity to rural communities, an increase in the number of interconnection points and routes, and improved competition in the middle mile and backbone, 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."); Verizon Comments at 11 (noting that in rural areas, "the cost of the additional transport mileage is high enough to impinge on a rural broadband provider's ability to offer services in those areas" and suggesting that the FCC create a universal service program to subsidize some of the transport mileage costs in these areas); Comments of the Consumer Federation of America and Consumers Union, GN Docket No. 09-29, at 4 (filed March 25, 2009) ("Consumers Union Comments") ("Without middle mile fiber there can be no broadband service, no matter which first mile technology is used. Middle mile is a necessary component of solving the problem of un- and under-served."); NECA Comments at 6 n.14 (reporting the conclusions of NECA's study "that high-speed Internet service is uneconomic in many rural areas" and further finding "that increased IP traffic will exacerbate, rather than ameliorate, the problem as existing revenue shortfalls are multiplied as the scale of operations increases."); DigitalBridge Comments at 8 ("The lack of middle-mile infrastructure is one of the greatest obstacles to building sustainable rural broadband networks.").

9/ *See, e.g.*, FiberTower *et al.* Submission at 2 (urging the Commission to "address the critical shortage of 'middle mile' broadband -- particularly in unserved and underserved areas, including rural areas"); NECA Comments at 5 ("There is, however, little or no up-front or continuing support for the high cost of transporting broadband traffic from rural customers to an Internet Backbone Provider's (IBP) interconnection point -- the 'middle mile.'"); National Rural Telecommunications Cooperative, Comments, GN Docket No. 09-29 (filed March 25, 2009) ("NRTC Comments") (stating that, in addition to last mile service, "there must be ready access to the 'middle mile' in order to connect with the Internet on a national level"); Consumers Union Comments at 3-4 (advocating for the agencies to support "no regrets" projects, or "projects that provide basic functionalities that are certain to be used and useful in the 21st century communications ecology," and noting that "two types of projects fit the bill": first mile wireless and middle mile fiber).

rules that support the deployment of middle mile fiber in rural markets along right-of-ways to provide interconnection with the last-mile." [10/]

ANALYSIS

I. Defining Unserved and Underserved Areas

The definitions for "unserved area," and "underserved area," should take into account the available middle mile capacity. In other words, the availability, at reasonable rates, and capacity of middle mile and interconnection facilities should be indicative of whether an area is unserved or underserved, regardless of the existence, scope, or nature of the last mile broadband access platform. Defining these terms as they pertain solely to last mile infrastructure without adequate consideration of the "middle mile" could facilitate the deployment of last mile infrastructure without any adequate access to the Internet backbone, resulting in virtual roads to nowhere and wasting precious stimulus funds.

Parties have already begun to make suggestions for these terms. Some, for example, suggest that an unserved area should be one with no broadband access at all, only dial-up access at most,[11/] and that underserved areas could be assessed by number of providers, penetration and uptake rates, as well as other factors. The tenor of these proposals suggests a single-minded focus on the last mile. An area's status as unserved or underserved cannot be fully assessed without taking into account the middle mile facilities available to that area, including the connectivity between those facilities and backhaul fiber. Even an area with some local broadband deployment, whether through a wireless carrier, an ISP, a LEC, or a cable company,

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[10/] NRTC Comments at 10; *see also* New America Comments at 5-6 (proposing a plan "mandating the installation of high-capacity, dark fiber bundles" along federal highway rights of way).

[11/] *See, e.g.*, Eric Peterson, Executive Director, Rural Cellular Association, Comments at the Broadband Technology Opportunities Program Public Meeting on Defining Rural and Unserved Areas (March 19, 2009), transcript *available at* http://www.ntia.doc.gov/broadbandgrants/meetings.html.

should be considered underserved if the lack of middle mile connectivity constrains or limits Internet access or makes it prohibitively expensive.

II. Defining Broadband

The FCC should recommend that the Broadband Technologies Opportunities Program ("BTOP) funding provides true high speed broadband to consumers within the constraints of the mandate for technology neutrality. This requires an acknowledgment that different speed thresholds should apply to different types of technologies. That said, the government should take this opportunity to begin achieving the type of bandwidth commonly available in many other countries. This means not just a focus on last mile bandwidth, but middle mile and backhaul as well. Multi-megabit last mile service can be constrained by middle mile copper facilities operating at DS-1 levels or DS-3 levels. The Organization for the Promotion and Advancement of Small Telecommunications Companies ("OPASTCO"), a national trade association that represents over 520 small incumbent local exchange carriers ("ILECs") serving rural areas of the United States, states that nearly 90 percent of OPASTCO members are able to deliver data speeds of at least one megabit per second in one direction to residential consumers.[12/] As last mile capacity increases, middle mile facilities must also become sufficiently robust so as to avoid creating a bottleneck that hinders the effectiveness of the local network.

Additionally, because middle mile facilities are expensive, especially in light of the vast distances between many rural communities and Internet backbones, the NTIA should target projects that are "future proof." In other words, a definition of broadband should consider not only the near term broadband demands, but also the capacity requirements a decade from now. One way to maximize the long term viability of middle mile projects and prepare for this future

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12/ OPASTCO Comments at 2.

growth is to fund backhaul projects that provide access from the middle mile to the Internet backbone that are contractually obligated to be neutral, open networks and that also incorporate the critical, physical elements of a highly accessible architecture for both wireline and wireless networks. For example, a dark fiber network with integrated wireless towers and regeneration/colocation huts that provides access to all three elements on a neutral basis enables connected middle mile network operators to readily upgrade equipment to increase capacity over the leased fiber back to the Internet with relative ease.

III. Non-discrimination and Network Interconnection Obligations

Network neutrality in the context of broadband services has largely focused on access to applications. A somewhat different focus should be applied to middle mile and backhaul projects, a focus more reminiscent of the 1996 Act's physical non-discriminatory interconnection obligations. In the middle mile and backhaul context, the key interconnection obligations should be carrier neutral access to the network and the establishment of open colocation for interconnection facilities.

Vertically integrated providers certainly can and do offer middle mile facilities and backhaul, but often with strings attached. For such carriers, rational profit maximizing behavior often dictates restrictions on competitive access. This dynamic creates a bottleneck, firmly planting a wedge in the contiguous order of all things networked, and serves to entrench the digital divide and further perpetuate loss of time, value, and intelligence. These are our nation's most precious resources and they are wasted every day that this situation is left unresolved.

The government should expect a different business model when middle mile and backhaul facilities are paid for largely through federal dollars. In that case, the businesses model must be one of a truly neutral carrier, one that makes its facilities available to all takers on non-

discriminatory terms. It should be a business model that succeeds by developing and offering neutral backhaul fiber and neutral colocation at the critical interconnection points. For example, the backhaul provider should offer neutral colocation at the wireless towers and huts along the fiber route, creating a common, shared facility for interconnection. Providing open access to wireless towers along the fiber route could greatly reduce the cost of middle mile wireless technologies by siting the tower adjacent to the fiber. One agreement from a single backhaul operator that provides turn-key colocation and power, tower space and fiber would be very convenient and efficient, allowing the middle mile and last mile providers to focus on what they do best: servicing their customers. This type of business model is technologically and competitively neutral, consistent with the Recovery Act's mandates,[13/] and provides for a highly efficient expenditure of BTOP funds.[14/]

CONCLUSION

Over the past ten years, we have learned that knowledge is power. Broadband networks deliver knowledge. With power comes money. With money comes growth. It is a simple equation. It is a machine. If its pieces are assembled properly and it is well-oiled with no false restrictions, it works. It has a direct positive multiplier effect on the productivity of individuals

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13/ Letter from Joe Barton and Cliff Stearns, Ranking Members, Subcommittee on Communications, Technology, and the Internet, Committee on Energy and Commerce, U.S. House of Representatives, to Bernadette McGuire-Rivera, Associate Administrator, National Telecommunications and Information Administration, U.S. Department of Commerce, James R. Newby, Acting Administrator, Rural Development, U.S. Department of Agriculture, and The Honorable Michael J. Copps, Acting Chairman, Federal Communications Commission (March 25, 2009) (suggesting that the allocation of Recovery Act funds be "technologically and competitively neutral" and stating that "[i]t is not the role of government to put a finger on the scale or pick winners and losers").

14/ *See generally* NTCA Comments at 26-27 (stating that all large, vertically-integrated communications carriers should be required to provide non-discriminatory, cost-based special access transport services to enable other carriers to reach the Internet backbone); DigitalBridge Comments at 9 ("Additionally, if funds are made available so that more fiber huts that *travel* through these smaller communities are opened for interconnection, DBC would have even more opportunity to extend broadband services to more underserved towns.").

and has been and will continue to be a major driver of the new economy. This can be nothing but good for the economy.

The potential of broadband networks can be stymied, however, by vested interests concerned that new technologies and facilities will cannibalize existing services or embedded copper infrastructure. As a result, regional networks and people remain isolated and their potential to organize, unify, collaborate, and succeed independently and as a group remains unfulfilled. Open access to middle mile and backhaul facilities is an important step in breaking the logjam.

Respectfully submitted,

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