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

Joint Request for Information	)	Docket No. 090309298–9299–0
	)	

COMMENTS OF SPRINT NEXTEL CORPORATION

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INTRODUCTION AND SUMMARY

Sprint Nextel Corporation ("Sprint Nextel") submits these Comments in response to the Joint Request for Information from the National Telecommunications and Information Administration ("NTIA") and the Rural Utilities Service ("RUS") seeking comment on, among other things, the provisions of the American Recovery and Reinvestment Act of 2009 ("ARRA")[1] requiring NTIA to establish and administer the Broadband Technology Opportunities Program ("BTOP").[2]

To maximize the benefits of broadband deployment to consumers, NTIA should ensure that BTOP requirements – and all BTOP grants – are designed to facilitate long-term, sustainable broadband competition. Only broadband competition can ensure that all Americans, including those in unserved and underserved areas, have access to broadband choices both now and in the future. In addition, NTIA should carefully balance the grant amounts and number of recipients so that NTIA neither funds too many small projects that lack long-term viability nor concentrates grant money in the hands of so few entities that competition never develops. Moreover, NTIA should use grant funds to enable the greatest benefit to the largest number of consumers, which

[1] Pub. L. No. 111-5, 123 Stat 115 (2009).

[2] Joint Request for Information and Notice of Public Meetings, 74 Fed. Reg. 47 10,716 (Mar. 12, 2009).

can be accomplished in large part by supporting projects that bring competition and lower costs to the backhaul or "middle mile" market, an essential input for virtually all broadband service providers. Finally, although NTIA should adopt competitively and technologically neutral BTOP standards and policies to encourage sustainable broadband competition, it should also recognize the unique consumer benefits offered by *mobile* broadband services that cannot be duplicated via fixed broadband alternatives.

I. GRANT FUNDING SHOULD BE USED TO SUPPORT SUSTAINABLE BROADBAND COMPETITION

To maximize the benefits of broadband deployment to consumers, NTIA should ensure that all grants are designed to encourage broadband competition. Only sustainable broadband competition can ensure that Americans have access to broadband choices both now and in the future, and only broadband competition can create the critical jobs and economic growth that our country needs. To facilitate this goal, NTIA should adopt policies for broadband stimulus grants that allow competition in all network segments to flourish, and strike an appropriate middle ground when selecting the number of grant recipients.

A. NTIA Should Ensure that Definitions and Policies Developed to Implement BTOP Will Facilitate Sustainable Broadband Competition

Congress tasked NTIA with implementing the BTOP consistent with five statutory goals:

- "Provide access to broadband … in unserved areas."
- "Provide improved access to broadband … in underserved areas."
- "Provide broadband education, awareness, training, access, equipment and support."
- "Improve access to, and use of, broadband service by public safety agencies."
- "Stimulate the demand for broadband, economic growth, and job creation."[3]

The ARRA did not define the key terms "broadband," "unserved" and "underserved," but left these definitions to the discretion of NTIA after consultation with the Federal Communications

[3] ARRA § 6001(b).

Commission ("FCC"). Broadband competition is central to achieving these goals, and NTIA should ensure that the definitions for these terms and the program policies it adopts will result in the provision of grant funds to facilitate sustainable broadband competition.

Encouraging sustainable, effective competition has been a central tenet of the FCC for a long time. In recent years, FCC policy has been driven heavily by a belief that a robust, competitive marketplace is "the best method of delivering the benefits of choice, innovation, and affordability to American consumers."[4] The FCC has also attempted to promote investment and competition and ensure that marketplace participants compete on a level regulatory playing field.[5] With respect to mobile services specifically, the FCC has stated that "U.S. consumers continue to reap significant benefits – including low prices, new technologies, improved service quality, and choice among providers – from competition …."[6] Consistent with the goals set forth in the ARRA, competition is the best means of creating jobs, stimulating investment, promoting economic efficiency and innovation, achieving long-term economic benefits, lowering prices and stimulating demand, and providing additional consumer choices and benefits.[7]

Competition is the key to achieving the BTOP broadband goals. In defining the terms "broadband," "unserved" and "underserved," and in developing BTOP program rules, NTIA should distinguish between the different types of broadband services: fixed, mobile, and backhaul or "middle mile" broadband services. Only by tailoring its definitions to recognize the

[4] *See, e.g., Moving Forward: Driving Investment and Innovation While Protecting Consumers*, Federal Communications Commission, 1 (Jan. 15, 2009), *available at* http://www.fcc.gov/fcc-moving-forward-report.pdf.

[5] *See, e.g., id.*

[6] *See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, Twelfth Report, 23 FCC Rcd 2241 ¶1 (2008).

[7] *See* ARRA § 3(a).

difference between these market segments can NTIA ensure that full broadband competition can flourish.

Broadband. Exactly what constitutes a broadband service is an evolving concept. The FCC has defined broadband as "services and facilities with an upstream and downstream transmission speed of more than 200 kbps,"[8] but has added several speed tiers (with separate upload, download, and technology rate codes) that recognize that broadband can reflect a wide range of consumer experiences and needs.[9] As discussed below in Section III, NTIA should use a definition of broadband that accounts for the unique value of ubiquitous mobile broadband services relative to fixed alternatives with less utility. For mobile broadband, Sprint Nextel urges NTIA to adopt a definition of ***at least 3 Mbps down and 768 kbps up***, measured based on standard technical criteria for modeling anticipated system loading.[10] A key element of the

[8] *Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, CC Docket No. 98-146, Report, 14 FCC Rcd 2398, 2406, ¶ 20 (1999).

[9] The tiers are: First Generation data: 200 kbps up to 768 kbps; Basic Broadband, 768 kbps to 1.5 Mbps; 1.5 Mbps to 3.0 Mbps; 3.0 Mbps to 6.0 Mbps; 6.0 Mbps to 10.0 Mbps, 10.0 Mbps to 25.0 Mbps, 25.0 Mbps to 100.0 Mbps, and above 100.0 Mbps. *See Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans*, WC Docket No. 07-38, Report and Order and Further Notice of Proposed Rulemaking, 23 FCC Rcd 9691, 9700-9701, ¶ 20, n.66 (2008).

[10] Measuring the broadband speed that any given consumer may experience at any given time and location poses a challenge. Mobile broadband speeds vary due to weather, foliage, physical location, variable system loading, distance from the mobile base station, and other factors. Average mobile broadband speeds vary for the same reasons, as well as the duration and time of day of the averaging period. At the same time, however, measuring speeds based on "theoretical maximum speeds" is completely divorced from actual consumer experience and at odds with how mobile broadband service providers actually plan, build and operate their network systems. For example, a mobile technology may be theoretically capable of providing 5 Mbps to a user; however, the user will not actually receive that data rate if the service provider does not have adequate backhaul capacity at the transmitting site to support providing that speed to all the users that request it. While actual end-user speeds can be affected by system loading, physical location and other factors, carriers routinely take these factors into account in planning their systems. Grant applicants should be capable of reliably and consistently modeling the broadband speeds that 90% of the users would experience 90% of the time in a specified percentage of the locations (such as 70%), based on a set of standard technical criteria for actual system performance. These criteria would include the number of simultaneous users, the distance of those users from the mobile base station, the amount of network and signaling overhead, and the total base station backhaul capacity. To ensure proper comparison, the analysis should also identify the target environment for

ARRA is to "provide the investments needed to increase economic efficiency by spurring technological advances in science."[11] These advancements – and the jobs they create – will not occur without an aggressive floor for mobile broadband speeds. If, however, a definition with a relatively slow speed threshold is adopted (*e.g.*, 200 kbps), then NTIA should award substantially more points for faster mobile broadband services when comparing applications, consistent with the ARRA's direction to consider whether a grant will "provide the greatest broadband speed possible to the greatest population of users in the area."[12]

NTIA's broadband definition should be drafted so as to include the ability to fund projects for middle mile backhaul, which is a key input component in the provision of broadband services to end users. As discussed in detail in Section II, middle mile broadband backhaul could benefit greatly from stimulus support. The market power that incumbent local exchange carriers (ILECs) have over special access facilities has resulted in a market for broadband backhaul that is not competitive, stifles innovation, and chokes off large areas of the country from affordable broadband access. For purposes of the BTOP grants, therefore, "broadband" should be defined to include any high-capacity transport between a Tier I Internet backbone and a broadband provider serving end users.

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wireless broadband service as high-speed mobile broadband, portable mobile broadband, fixed broadband, or indoor broadband coverage. With this level of detail, NTIA and other parties should be able to verify and duplicate data speed calculations based on information provided by the applicants.

[11] ARRA § 3(a)(3).

[12] ARRA § 6001(h)(2)(B). The definitions of "broadband," "unserved," and "underserved" are inter-related. In the event a slower speed threshold of 200 kbps is adopted, therefore, NTIA would need to modify its definition of "underserved area" to something other than an area with fewer than three "broadband" providers that Sprint Nextel proposes here. The majority of the country, including many areas that lack access to a high-speed broadband or mobile broadband service, may have three providers of a 200 kbps data service, but likely would not be considered by most to have ample access to "broadband" services.

"Unserved" Areas. One goal of the ARRA is to provide access to broadband services in "unserved" areas.[13] As with the definition of broadband, NTIA should distinguish between areas unserved by fixed and mobile broadband services, and areas unserved by middle mile broadband services.

For purposes of fixed and mobile broadband services, NTIA should classify as "unserved" only those areas where no fixed and no mobile broadband service is available. NTIA should not include satellite-based broadband services in assessing whether an area is unserved for BTOP purposes. Although satellite broadband services (ranging from 1.5 to 5 Mbps down and 256-300 kbps up) are available throughout most of the country, such services have technical limitations (*e.g.*, latency) that limit consumers' ability to use VoIP and some video applications, and the relatively high cost of the service dampens consumer demand.

For middle mile broadband, an area should be considered "unserved" if only one middle mile service provider is present. This approach accounts for the fact that incumbents face little or no competition in most parts of the country and fail to provide middle mile services at affordable rates, as discussed further in Section II.

"Underserved" Areas. Another goal of the ARRA is to provide "improved access" to broadband services in "underserved areas."[14] Once again, NTIA should distinguish between areas underserved by fixed and mobile broadband services, and areas underserved by middle mile broadband services.

[13] ARRA § 6001(b)(1).

[14] ARRA § 6001(b)(2).

For purposes of fixed and mobile broadband services, NTIA should define "underserved" areas as those where fewer than three broadband service providers offer service.[15] Notwithstanding the above, any applicant proposing to offer mobile broadband speeds *faster* than those currently available from existing mobile broadband providers in an area should be eligible for BTOP grants for that underserved area, regardless of the number of broadband service providers in the area. For the middle mile broadband market, an area should be considered "underserved" if fewer than three middle mile providers are present.

B. NTIA Should Strike an Appropriate Middle Ground Between Concentrated and Dispersed Funding When Distributing Broadband Grants to Encourage Broadband Competition

To ensure sustainable broadband competition, NTIA should strike the appropriate balance with respect to distributing broadband grants. NTIA must be careful not to fund too many small projects that lack long-term sustainability. It also must avoid concentrating grant money in the hands of so few entities that competition never develops.

If NTIA funds thousands of small broadband projects, competition certainly will suffer in the long-run. Despite NTIA's best efforts, awarding broadband stimulus funds too broadly, with each recipient only receiving a tiny portion of the available BTOP funds, will do little more than set up the recipients for failure. For example, overly expansive distribution will prevent any one competitor from gaining scale sufficient to compete against dominant incumbent broadband providers, and consumers will be left once again with insufficient broadband choices. Supporting broadband projects that are ultimately unsustainable also will create political pressure for additional federal and state taxpayer subsidies or ongoing expansive burdens on consumers

[15] NTIA should evaluate whether or not an area is "underserved" on a census tract basis. For fixed and mobile broadband, a carrier would be considered to provide service to the census tract if the carrier covered at least 70% of the census tract's population.

from Universal Service funds or similar programs in the future. Thus, NTIA should avoid supporting more broadband projects in a particular area than that market can support.

At the same time, NTIA also should avoid supporting too few projects. Providing taxpayer support to a single entity per state could give that entity a significant, perhaps insurmountable, competitive advantage in the broadband marketplace. This advantage would likely forestall future competitive entry or expansion and leave consumers worse off in the long-run, thereby thwarting Congress's ARRA and BTOP goals.[16]

NTIA must find the middle ground that neither *directly* relegates rural consumers to one provider by choosing one recipient as the stimulus "winner," nor *indirectly* relegates rural consumers to one provider by supporting so many providers that all but one eventually surrender to competitive pressures. In other words, sustainable competition requires that carriers can operate profitably in an area at the prevailing market price for broadband service. Because the recipient of a broadband grant will have had a large portion of its capital costs reimbursed via broadband grants, the costs it will need to recover in its prices in the short run will exclude both depreciation and return on its investment in that plant. Because these capital costs of the network are a large proportion of the total costs of providing broadband service, the receipt of a broadband grant should allow the receiving carrier to charge a substantially lower price than it otherwise would in the short run. Indeed, the grant should ideally allow the receiving carrier to charge the prevailing market price even in higher cost areas. In the long run, however, a carrier will need to upgrade and replace its plant in the high cost areas for which it receives its grants, and its price will need to reflect those types of expenses as well.

[16] *See id.*

Thus, achieving scale is important if the broadband stimulus program is to have any lasting effect. Carriers will incur many other costs to provide broadband service, including customer service, advertising, billing, and related activities. These other costs have both fixed and variable components, but to the extent the costs of providing service are fixed, a carrier needs to achieve scale to provide broadband service at a long run sustainable cost. The more carriers that receive grants in an area, the less likely it is that carriers will be able to achieve that sustainable scale. At the same time, the fewer carriers in an area who receive grants, the less likely it is that competition will occur in that area. Since competition is the best guarantor that prices will be reasonable, ensuring the best long run outcome for the grants requires NTIA to structure its program to enable as many competitors to provide broadband service as is sustainable.

The challenge for the NTIA is to find the "sweet spot" that allows competition that is both strong enough to constrain prices, but robust enough to persist over time. One means to achieve this balance is to support multiple broadband delivery platforms. For example, NTIA's grant program should ensure that *both* a fixed and mobile carrier exist in a given area. This approach would have the advantage of providing independent platforms by which customers could receive broadband service.

Business and consumers benefit from competition among alternative service providers. Striking the right balance for inter- and intra-modal broadband competition provides the best hope of creating the long-term jobs, economic growth and innovation that broadband services can generate.

II. GRANTS SHOULD BE FOCUSED TO ENABLE THE GREATEST BENEFIT FOR THE LARGEST NUMBER OF PEOPLE, INCLUDING THROUGH THE FUNDING OF "MIDDLE MILE" PROJECTS

The ARRA requires NTIA, in awarding BTOP grants, to consider whether an application will increase broadband affordability and subscribership for "the greatest population of users in the area."[17] This Congressional goal should be at the forefront of NTIA's thinking as it develops the rules and grant priority criteria for the BTOP.

A. Stimulus Funds Should be Used to Foster Competition in the "Middle Mile" Special Access Facilities Market

Middle mile broadband presents a classic case of market failure: largely unregulated monopoly incumbents control key infrastructure and the resulting bottleneck thwarts innovation and investment, discourages new products and services, increases costs, and constrains choice. Providing stimulus funding for lower cost middle mile special access services would not only promote jobs, stimulate the economy, and strengthen broadband infrastructure, but also would provide the added benefit to the consumer of promoting competitive broadband offerings. The middle mile backhaul bottleneck has been widely identified as a major – if not *the* major – impediment to extending broadband to unserved and underserved areas. Internet service providers large and small repeatedly voiced their concerns about the pressing need for competitively priced middle mile broadband services during NTIA's recent public BTOP meetings.[18] Likewise, comments filed in the FCC's Rural Broadband Strategy proceeding

[17] ARRA § 6001(h)(2)(A).

[18] *See, e.g.*, oral comments of attendees at the NTIA/RUS BTOP public meetings: Mark Feest, Director of External Affairs for CC Communications, Fallon, Nevada, March 17, 2009, Session 3 ("[T]here's a significant cost in getting [traffic] off your network into a fiber hotel or some other method where you can get it somewhere where there's competition in the backhaul to get to the Internet gateway."); Al Silverman, Vice President and General Counsel of Cable One, March 18, 2009, Session 2 ("The fiber backhaul or backbone to small towns and to rural areas is a bottleneck. …[G]etting to …the national fiber network is very, very difficult if not impossible to do."); Gaylen Updike, Telecommunications Development Director, Government Information Technology Agency, State of Arizona, March 18, 2009,

echoed the same theme: there must be a solution for the high costs of backhaul if rural areas are to receive broadband service.[19]

If the ARRA's mandate to accelerate broadband deployment in unserved and underserved areas (and, through the RUS program, in certain rural areas without adequate broadband access)[20] is to be achieved, NTIA and RUS must adopt policies and rules that promote competition and ensure reasonable cost-based rates for "middle mile" special access facilities.[21]

Session 2 ("[M]iddle mile is the key issue."); Evelyn Jerden, CPA, Lynch Interactive Communication Technology, March 18, 2009, Session 2 ("[M]iddle mile cost is a critical component."); Unidentified Phoenix-based ISP provider, March 18, 2009, Session 2 ("[O]ne of the biggest challenges for us is the middle mile. It's very costly to provide …we really do need to come up with a way to resolve the middle mile cost issue."); John Lucas, Chief Information Officer, Graham County, March 18, 2009, Session 2 ("The real problem is the middle mile. The middle mile is an entry barrier to local ISPs. Basically if you're an ISP in Graham County, you have to pay four times the cost of an ISP in Maricopa County. …they can't function because they're having this barrier to entry and it also keeps other people from coming in because of the cost."); 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.").

[19] *See, e.g.*, Comments of DigitalBridge Communications Corp. ("DBC"), GN Docket No. 09-29 (filed March 25, 2009) at 8-9 ("The lack of middle mile infrastructure is one of the greatest obstacles to building sustainable rural broadband networks.… DBC has been able to bring cost-efficient and affordable wireless broadband to rural communities, but only where it has access to affordable middle mile backhaul. When considering markets to serve, one of DBC's essential considerations is whether it can acquire middle mile backhaul facilities at economic rates."); Comments of Mark Bayliss, President Visual Link Internet, GN Docket No. 09-29 (filed March 25, 2009) at 1 ("If the ISP's prices for Internet backhaul bandwidth are $100.00 per Mbs and the ISP has to deliver 3 Mbs to the customer with a QOS of 10 to 1 this would cost the ISP $30.00 per customer in Internet bandwidth per month. [With the addition of other costs, this results in a cost per customer that] would clearly be out of range of most families in the underserved regions."); Comments of Qualcomm Incorporated, GN Docket No. 09-29 (filed March 25, 2009) at 10 ("[T]he costs even to extend mobile broadband into these [rural] areas, especially for back haul, are substantial. Public funding, targeted to cover the costs to extend mobile broadband into these unserved areas, would bring incalculable benefits for the nation."); Comments of the Organization for the Promotion and Advancement of Small Telecommunications Companies ("OPASTCO"), GN Docket No. 09-29 (filed March 25, 2009) at 8 ("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.").

[20] ARRA, Division A, Title I.

[21] To bring more broadband to more consumers more quickly, the FCC should act expeditiously to eliminate the ILECs' unreasonable contractual terms and conditions for middle mile backhaul. One all-too-common ILEC contract term is requiring the broadband provider to forfeit access to *all* of the ILEC's broadband backhaul if the broadband provider enters a contract for even one alternative middle mile

For NTIA and RUS, this would include making stimulus grants and loans available to competitive entities offering the middle mile special access facilities needed to link a broadband service provider's network to its ISP, to link a wireless carrier's cell sites to its backbone data network, and to link end users (*e.g.*, businesses, retail outlets, health care providers, community anchor organizations, etc.) to their data provider's network.[22] If broadband deployment in unserved and underserved areas is to flourish, NTIA and RUS must encourage alternative middle mile special access service providers to enter markets in competition with the dominant incumbent service provider (primarily AT&T and Verizon), and must help ensure the availability of these middle mile facilities at reasonable rates.

1. Definition and Importance of the "Middle Mile"

The provision of broadband services depends to a great extent on piecing together network facilities owned by multiple entities, rather than end-to-end provisioning by a single service provider. There are typically three building blocks necessary to provision broadband service: the local network, the middle mile facilities, and the backbone network. Presented below are graphical depictions of three variations of this basic network configuration.

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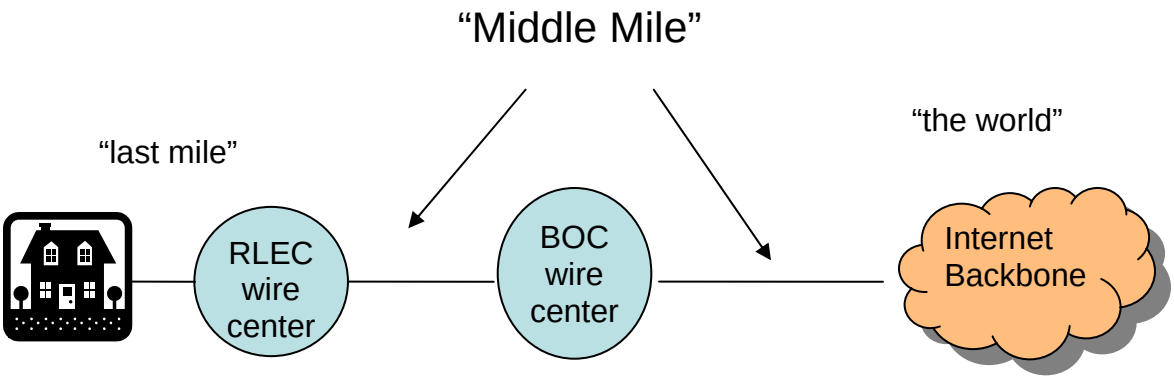
backhaul facility that competes with an ILEC. While separate from the BTOP proceeding, the FCC should act quickly to prohibit these ILEC contract terms as inimical to broadband deployment.

[22] Stimulus funds alone are insufficient to solve the pervasive market failure in the middle mile broadband sector. NTIA and RUS have authority to require through contract that recipients of BTOP grants are required to interconnect with others and practice non-discrimination; however, middle mile broadband transport facilities are generally available only from incumbents via special access purchases. Nothing in the NTIA or RUS authorization requires that *existing* special access or more modern functional equivalents like Ethernet middle mile transport, be offered at reasonable prices. Even if a majority of the stimulus funds were directed to solving the middle mile broadband problem, the vast majority of areas will still face single-source, middle mile broadband bottlenecks controlled by the incumbent local exchange carriers. Therefore, many retail broadband projects that could be sustainable over the long run with funds sufficient to cover capital expenses will not be sustainable because of special access prices that are bloated and cause the project, over its lifetime, to be unsustainable. The FCC could help solve the middle mile broadband bottleneck by taking timely and effective action to reform special access pricing and by making available at similarly reformed prices for similar capacity other technologies such as Ethernet. The promise of the BTOP program can only be fulfilled if the FCC also takes action which NTIA and RUS should encourage.

Scenario 1
Fixed Rural Broadband

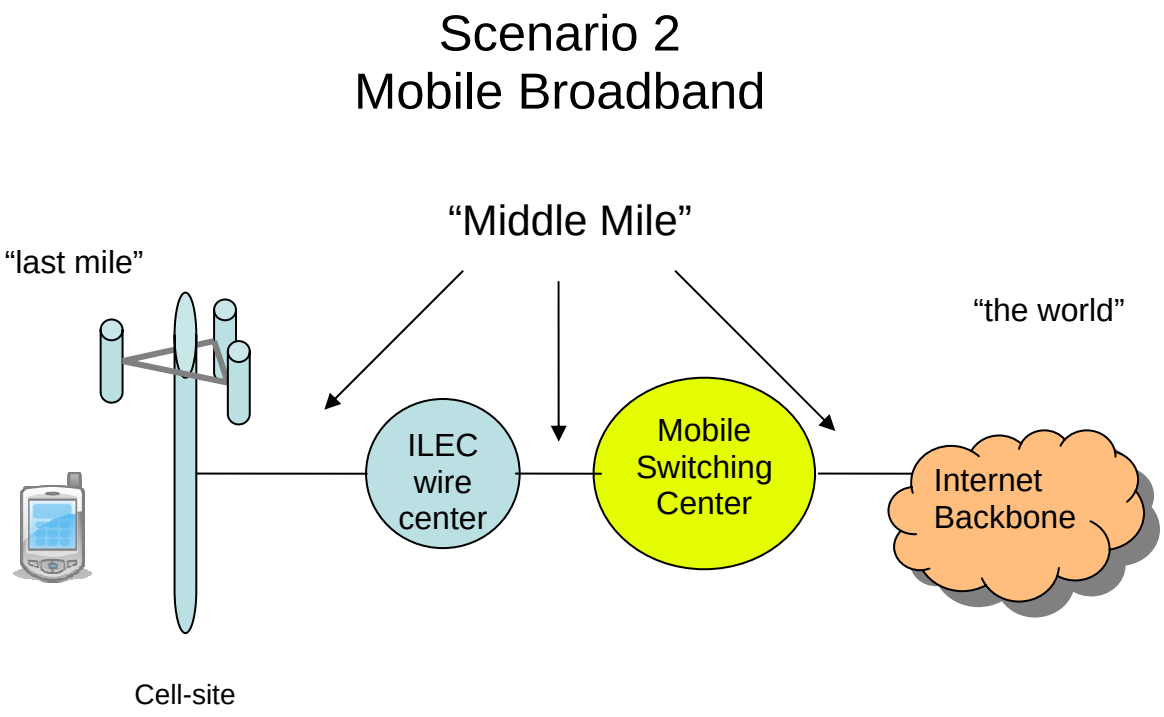


In this scenario, the broadband service provider is a rural local exchange carrier (RLEC). The RLEC provides the local network ("last mile") building block – the broadband facilities that link the end user to the RLEC's central office. The RLEC must then transport its customers' traffic to the network of the Internet service provider, which in the vast majority of cases will be located many miles outside the RLEC's service territory.[23] The RLEC thus must obtain transport facilities from another carrier, such as AT&T or Verizon (depending on their respective service areas). RLECs have asserted that their broadband deployment efforts have been hampered by the high rates they are forced to pay for these middle mile special access facilities.[24] An executive of Pioneer Communications, for example, advised NTIA/RUS that "while the broadband network is being extended further into areas where there's no service, many

[23] According to NTCA, the "typical respondent [RLEC members participating in NTCA's broadband survey] is 98 miles from their primary Internet backbone connection." *See* www.ntca.org/images/stories/Documents/Advocacy/PositionPapers/2009/IssueBroadband.pdf. A 2001 NECA study similarly found that 55% of RLEC switches are more than 70 miles away from an Internet backbone provider node (*see* NECA's comments filed in FCC GN Docket No. 09-29 on March 25, 2009, p. 5).

[24] Because most middle mile facilities include a distance-sensitive rate element, high rates combined with great distances can result in a very costly middle mile bill.

companies cannot afford the large middle mile facilities to connect these customers to the Internet backbone."[25] NTCA, OPASTCO and NECA have each emphasized that middle mile transport services are not competitive, are far too expensive, and must be cost-based to achieve universal affordable broadband service.[26] Indeed, even Verizon has acknowledged that some relief is necessary given "the inadequacy or high cost of the "middle mile" [that] has been highlighted as one of the significant barriers to greater broadband deployment in rural areas."[27]



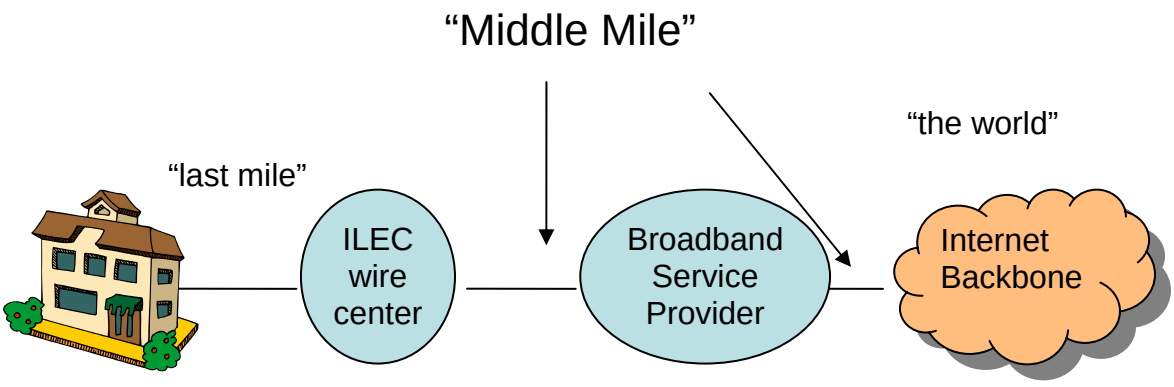
[25] Catherine Moyer, Pioneer Communications (wireless carrier and ISP), March 17, 2009, Session 3; *see also "All Communities Need Broadband to Survive Economically, Agencies Told," Communications Daily*, March 19, 2009, pp. 2-5, quoting Catherine Moyer of Pioneer Communications of Ulysses, Kansas.

[26] *See* comments filed on March 25, 2009 in FCC GN Docket No. 09-29 by NTCA, p. 26; OPASTCO, p. 8; NECA, p. 5.

[27] *See* comments filed on March 25, 2009 in FCC GN Docket No. 09-29 by Verizon, p. 10. Although Sprint does not endorse Verizon's proposed relief (subsidies for middle mile costs), and believes that cost-based rates for these facilities is the more rational economic approach (*see* p. 18 below), we certainly agree that excessive middle mile costs are a significant impediment to broadband deployment.

In the second scenario, the broadband service provider is a mobile carrier. The mobile carrier provides the local network building block – the link between the end user and the mobile carrier's cell site. The mobile carrier must then transport its customers' traffic from its cell sites to its own backbone data network (the mobile switching center), and from its backbone network to the network of the Internet backbone provider, via middle mile special access facilities. As Sprint Nextel and other mobile service providers have demonstrated, the overwhelming majority of their middle mile special access facilities are obtained from incumbent LECs, in particular AT&T and Verizon (in their respective geographic markets), despite vigorous attempts to obtain service from alternative providers whenever feasible.[28] Although Sprint Nextel pays ILECs *billions* of dollars for middle mile special access facilities (representing more than one-third of the operating costs) to connect its tens of thousands of cell sites to its backbone network – money which is thus unavailable for investing in Sprint Nextel's own broadband network and services – there are, in most cases, simply no competitive alternatives to the ILECs for these facilities.

Scenario 3
Fixed Office Broadband



[28] *See, e.g.*, comments filed in FCC WC Docket No. 05-25 (*Special Access Rates for Price Cap Local Exchange Carriers*) by Sprint (October 5, 2007) and T-Mobile (August 8, 2007).

In the third scenario (which, to expand beyond scenario 1 above, involves a non-rural ILEC), an end user obtains dedicated middle mile special access facilities, generally provided by the incumbent LEC, to connect its premises directly to its broadband provider. The middle mile special access facility can be as small as a single voice grade line, or as large as a DS-3 (approximately 672 voice grade lines), and the "office" depicted above can be a small or large business, a community anchor institution (school, library, community center), a health care facility (a doctor's office or a major hospital), or someone's home. Any business that processes credit card or ATM transactions, transmits data to or from a central location, connects remote locations, or handles customer care inquiries likely is using middle mile special access circuits. Health care providers rely upon middle mile special access facilities to transmit medical records and billing information, provide consumer and professional health education, and engage in telemedicine applications.[29] Schools rely upon middle mile special access to provide distance learning and to transmit attendance, academic, and other records. Financial institutions rely upon middle mile special access to process banking, investment, and ATM transactions. Residential consumers are increasingly turning to broadband connections to access the Internet for work, commercial (*e.g.*, on-line shopping and banking), entertainment, and educational purposes.[30] In short, middle mile special access is critical to huge swathes of the nation's broadband economy.

2. Stimulus Relief for the Middle Mile Special Access Problem Would Benefit the Most Consumers

The three building blocks depicted above – the local network, the middle mile facilities, and the backbone network – experience varying degrees of competition. The markets for the

[29] *See, e.g., Rural Health Care Support Mechanism*, 22 FCC Rcd 20360, 20370-2 (¶¶ 22-30) (2007).

[30] As of December 2007, there were an estimated 93.976 million residential high-speed lines, up from 5.170 million lines in December 2000. *See High-Speed Services for Internet Access: Status as of December 31, 2007*, Industry Analysis and Technology Division, Wireline Competition Bureau, FCC, January 2009, Table 3.

third building block – the backbone networks of the multiple Internet service providers, the backbone networks of the multiple mobile service providers, and the backbone networks of the multiple interexchange data service providers – are competitive and thus in no need of additional regulatory oversight or intervention.

The market for the first building block – the local facilities used to connect end users to the broadband network – has been characterized by intermodal competition in certain markets (largely in urban, densely populated areas) but not in others (*i.e.*, in unserved and underserved areas). Stimulus funds should be made available on a competitively and technologically neutral basis to qualified providers of local facilities in order to promote deployment of both fixed and mobile broadband services in unserved and underserved areas.[31] Stimulus funds, if carefully and rationally distributed, can encourage broadband providers to invest in areas where – absent federal support – they might otherwise find it economically infeasible to deploy facilities.

It is the second building block that, until recently, has received the least attention. As discussed above, middle mile special access facilities are absolutely critical to affordable universal broadband deployment, but are available in the vast majority of cases only from an ILEC. The lack of competition in the middle mile special access market has resulted in well-documented abuses: supra-competitive rates which generate extraordinary profits (up to *triple digit* rates of return), and onerous terms and conditions that make it difficult for customers to switch even a small portion of their demand to an alternative service provider, where such alternative exists.[32]

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[31] *See* comments filed on March 25, 2009 in FCC GN Docket No. 09-29 by Sprint, p. 8; *see also, ex parte* presentations filed on March 31, 2009 in FCC GN Docket No. 09-40 by Clearwire and XO.

[32] Independent entities have documented these market abuses. *See,* for example, GAO Report to the Chairman, Committee on Government Reform, House of Representatives, *FCC Needs to Improve Its Ability to Monitor and Determine the Extent of Competition in Dedicated Access Services*, released

Achieving the overriding goals of the BTOP stimulus program depends in significant measure on implementing the federal regulatory reforms necessary to assure that critical middle mile special access facilities are available on just and reasonable rates, terms and conditions. Government policies which foster competitive entry and expansion in the middle mile special access market will promote sustainable broadband deployment and are fully consistent with the pro-competitive mandates codified in other statutes.[33] NTIA and RUS should therefore seize the opportunity offered by the ARRA and use stimulus funds to foster competition in this currently uncompetitive market through two approaches. First, NTIA and RUS should make ARRA funds available to qualified competitive middle mile special access service providers on an even-handed basis, in both unserved and underserved areas. To encourage alternatives to dominant ILEC (particularly Regional Bell Operating Company (RBOC)) providers, NTIA and RUS should decline to adopt preferences for incumbent carriers or for entities that have an existing local presence.

Second, NTIA and RUS should condition the grant of ARRA funds to build or expand middle mile special access facilities upon recipients' agreement to provide the newly constructed facilities at cost-based rates and on reasonable and non-discriminatory terms and conditions. If NTIA and RUS do not want to engage in rate cases in which individual cost elements are evaluated, they can rely upon existing cost standards (such as UNE-based pricing) already

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November 2006 (concluding that in the 16 major metropolitan areas it examined, "facilities-based competitive alternatives for dedicated access are not widely available"). *See also*, Peter Bluhm with Dr. Robert Loube (NRRI), *Competitive Issues in Special Access Markets*, released January 21, 2009 and commissioned by the National Association of Regulatory Utility Commissioners, (documenting the ILECs' "strong market power in most geographic areas, particularly for channel terminations and DS-1 services," and the onerous terms and conditions associated with these services).

[33] *See, e.g.*, Part II (Sections 251-261, Development of Competitive Markets) of the Telecommunications Act of 1996.

developed by federal and state regulators.[34] NTIA and RUS should also recommend that the FCC act to reform special access pricing and mandate the availability of other broadband transport alternatives provided by the incumbent ILEC at reasonable, cost-based prices, to facilitate broadband deployment by a wide range of local network-based broadband service providers.[35]

B. A Balanced, "Middle of the Road" Approach to Grant Disbursements Will Result in the Most Benefit

In addition to supporting middle mile services, other considerations are important to ensure that the greatest return is achieved on the taxpayers' investment. As already discussed in Section I, NTIA should be careful not to spread the grant funds too thinly by funding thousands of small projects which will become unsustainable due to the lack of scale needed to compete. At the same time, concentrating grant money in the hands of too few will prevent competition from developing. Thus, enabling the most broadband access to the largest number of consumers will be aided by striking the right balance with regard to the number and size of grants awarded.

A careful balancing approach will also be needed in allocating grant funding between "unserved" and "underserved" areas. For example, prioritization of grants to unserved areas would quickly deplete the majority of available BTOP funds while providing relatively few additional Americans with affordable access to broadband services. While both unserved and underserved areas should be funded, the NTIA's prioritization criteria should take into account the overall return on investment – based on the likely increase in broadband uptake – which, in

[34] Some pricing constraints may be necessary even if a special access route is overbuilt because, as in the days of cellular duopoly, the presence of only two competitors in a market area may be insufficient to constrain excessive charges to the end-user service providers that must rely on middle mile broadband.

[35] Thus, for example, the FCC should make available not only special access at much lower cost-based rates, but also ensure that modern alternatives such as Ethernet transport services are available on the same basis. Only by making the most efficient and modern transport services available at reasonable prices can broadband deployment be maximized in unserved and underserved areas.

many cases, will be greater in underserved areas than in unserved areas. Finally, regulatory policies that encourage competitive entry in the middle mile broadband transport market will promote sustainable broadband deployment to Americans that have access to no or limited broadband services today.[36]

III. NTIA SHOULD RECOGNIZE THE UNIQUE BENEFITS OF MOBILE BROADBAND SERVICES WHEN DEVELOPING BTOP POLICIES

As it considers applications for stimulus funds, NTIA should recognize that mobile broadband services provide unique benefits that cannot be duplicated via fixed broadband alternatives. These benefits should be taken into account as NTIA develops scoring systems and other procedures for approving grant applications. In addition, NTIA should be cognizant of mobile broadband providers' need to retain reasonable network management flexibility and, therefore, should refrain from expanding the FCC's Broadband Policy Statement.

A. Mobile Broadband Services Provide a Unique Array of Benefits to Consumers

Only mobile services are capable of providing continuous, ubiquitous broadband access to all consumers—urban and rural alike. While consumers using fixed broadband services remain tied to a specific network location (generally indoors), mobile broadband users can take the service with them wherever they need to go. The power of this mobility cannot be overstated and is even more pronounced in rural areas. For example, rural health professionals can diagnose, monitor, and treat patients remotely and can access pertinent medical information from mobile broadband connections. Rural farmers, meanwhile, can use mobile broadband services to geo-tag crops and update crop data instantaneously while they are in the field. Public safety

[36] A thriving and dynamic market for broadband services is best able to offer consumers fast, affordable and reliable access to broadband mobility, services, and applications. *See, e.g.*, Part II (Sections 252-261, Development of Competitive Markets) of the Telecommunications Act of 1996.

agencies and first responders need mobile broadband so that they can access advanced services while at, and in transit to, the scene of emergencies.

Mobile broadband services also provide a superior value to consumers, compared to fixed services. The cost structure for deploying mobile broadband services is often significantly lower than the cost structure for fixed services. In particular, mobile broadband services do not require extensive "last mile" build-outs that extend to each end-user's location; instead, one tower can provide many users with mobile broadband services. Thus, the expansive reach of mobile broadband services makes them essential for achieving universal broadband connectivity; the lower cost makes them a more efficient target for distributing BTOP grants.

B. NTIA's Grant Application Process Should Reflect the Benefits of Mobile Broadband Services

Any scoring system for grant applications should reflect the power of mobile broadband services. To account for these unique benefits, NTIA should use separate scoring systems for applications proposing mobile broadband services and applications proposing only fixed broadband services. Thus, for example, the mobile broadband scoring system should involve separate ratings for certain broadband speed tiers than the speed ratings that apply to fixed broadband services. As noted earlier, Sprint Nextel advocates a definition of at least 3 Mbps down and 768 kbps up for mobile broadband. While this is a very aggressive minimum for mobile broadband based on current technologies, it is not a high hurdle for fixed services. Therefore, a higher threshold should be established for fixed broadband. Establishing different minimum standards or definitions for fixed and mobile providers of broadband does not conflict with a policy of technological neutrality, which Sprint Nextel supports; rather, it is required by such a policy. Because fixed and mobile broadband, and middle mile broadband, are inherently different services with fundamentally different attributes, measuring them by the same yardstick

would be discriminatory. As discussed above, mobile broadband has some significant utility advantages over fixed services. Mobile services should not be subject to the same minimum speeds as fixed services, just as fixed services should not be subject to a requirement that the user be able to access the service while mobile.

C. NTIA Should Refrain From Expanding the FCC's Broadband Policy Statement

The ARRA directs NTIA to require stimulus grant recipients to, at a minimum, adhere to the FCC's 2005 Broadband Policy Statement.[37] Under the Broadband Policy Statement, consumers are entitled to "access the lawful Internet content of their choice," "run applications and use services of their choice," and "connect their choice of legal devices that do not harm the network."[38] Consumers also are entitled to "competition among network providers, application and service providers, and content providers."[39] These principles are subject to reasonable network management.[40]

Sprint Nextel supports the goals of the FCC's Broadband Policy Statement. Sprint Nextel urges NTIA, however, to refrain from imposing additional non-discriminatory obligations beyond those required under the Broadband Policy Statement so that mobile broadband providers are not unfairly disadvantaged when applying for BTOP stimulus grants. The FCC has recognized the need for operators to retain reasonable network management authority, and this flexibility is particularly essential for mobile broadband services. To manage a radio access network, mobile operators must retain the ability to rely on packet prioritization and other

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[37] *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Policy Statement, 20 FCC Rcd 14986 (2005).

[38] *Id.* ¶ 4.

[39] *Id.* ¶ 5.

[40] *Id*. at n. 1.

reasonable network management techniques to avoid network congestion and other capacity-related service disruptions. In addition, consistent with the Broadband Policy Statement, mobile broadband providers will need the ability to continue requiring that devices connected to their networks do not harm the network or, for example, degrade network performance for other users.

CONCLUSION

The broadband provisions of the ARRA present an unprecedented opportunity to bring broadband access to millions of additional Americans. To take best advantage of this opportunity and to maximize the return on investment for taxpayers, NTIA should structure the BTOP program consistent with three major themes:

- Focus grant funding on projects that will enable long-term, sustainable broadband competition.
- Use grant funding to facilitate the greatest broadband connectivity for the largest number of consumers, including support for middle mile projects.
- Recognize the unique benefits offered by mobile broadband services and ensure that the rules do not disadvantage mobile broadband projects.

Acting in accordance with these themes will help ensure Americans have access to broadband choices both now and in the future, and will help create the critical jobs and economic growth that our country needs. Fulfilling the full promise of the BTOP program will not only require

NTIA and RUS to encourage broadband competition for fixed, mobile, and middle mile broadband services, but will also require the FCC to make available middle mile broadband transport services to retail broadband providers.

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