NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION
The Voice of Rural Telecommunications
www.ntca.org

November 23, 2009

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW, TW-A325
Washington, D.C. 20554

***Ex Parte* Notice:**

***In the Matter of a National Broadband Plan for Our Future,* GN Docket No. 09-51**

***In the Matter of the High-Cost Universal Service Support and Federal-State Joint Board on Universal Service,* WC Docket 05-337, and CC Docket 96-45**

***In the Matter of Developing a Unified Intercarrier Compensation Regime,* CC Docket No. 01-92; and *IP-Enabled Services,* WC Docket 04-36**

Dear Ms. Dortch:

On Thursday, November 19, 2009, *Delbert Wilson*, General Manager of Hill Country Telephone Cooperative, Ingram, Texas, Keith Gabbard, General Manager, Peoples Rural Telephone Cooperative, McKee, Kentucky and I met with Commissioner Meredith Attwell Baker and Christine Shuman, Legal Advisor for Wireline and Universal Service Issues to discuss issues raised in the above-referenced dockets. During the meeting I provided the attached documents and discussed NTCA's positions concerning various issues, which are consistent with positions taken in previous NTCA filings in the above-referenced dockets.

Pursuant to Section 1.1206 of the Commission's rules, a copy of this letter and attachment is being filed via ECFS with your office. If you have any questions, please do not hesitate to contact me at (703) 351-2016.

Sincerely,

/s/ Daniel Mitchell
Daniel Mitchell
Vice President
Legal and Industry

DM:rhb
Enclosures

cc: Christine Shuman

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Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51
	)	

INITIAL COMMENTS

Respectfully submitted,

National Telecommunications
Cooperative Association

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June 8, 2009

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INITIAL COMMENTS

The Federal Communications Commission (Commission or FCC) seeks comment on what should be included in a comprehensive broadband plan for the United States.[1] Specifically, the Commission seeks comment on how the FCC's national broadband plan should reflect the Nation's existing broadband needs, set clear goals to address these needs, provide a road map to achieve these goals, and establish benchmarks along the way towards achieving the Nation's broadband goals. The National Telecommunications Cooperative Association (NTCA)[2] hereby submits its comprehensive broadband plan contained herein for the Commission's consideration and hopeful adoption.

I. INTRODUCTION AND SUMMARY

In Acting FCC Chairman Michael J. Copps' most recent Report to Congress on a Rural

[1] *In the Matter of a National Broadband Plan for Our Future,* GN Docket No. 09-51, Notice of Inquiry (NOI), (released on April 8, 2009).
[2] NTCA is a premier industry association representing rural telecommunications providers. Established in 1954 by eight rural telephone companies, today NTCA represents more than 585 rural rate-of-return regulated telecommunications providers. All of NTCA's members are full service rural local exchange carriers (LECs) and many of its members provide wireless, cable, Internet, satellite and long distance services to their communities. Each member is a "rural telephone company" as defined in the Communications Act of 1934, as amended (Act). NTCA's members are dedicated to providing competitive modern telecommunications services and ensuring the economic future of their rural communities.

Broadband Strategy it states that rural broadband providers should be able to evolve "to keep pace with the growing array of transformational applications and services that are increasingly available to consumers and businesses in other parts of the country."[3] The report also recognizes that bandwidth requirements are growing and broadband networks deployed in rural areas should not merely be adequate for current bandwidth demands but also should be readily upgradeable to meet bandwidth demands of the future.[4] Most importantly, the report correctly understands that in "many parts of rural America, the relatively high deployment costs per customer make relying on market forces alone an inadequate strategy for promoting the deployment of broadband services."[5] NTCA agrees wholeheartedly with this vision and assessment.

During the last 20 years, rural carriers have invested in rural, high-cost and insular areas in the United States based on a system of rate-of-return (RoR) regulation, National Exchange Carrier Association (NECA) pooling, intercarrier compensation (IC) and rural embedded high-cost universal service fund (USF) support. This existing regulatory structure has allowed the Commission to meet its Congressional mandate to ensure rural consumers access to telecommunications services at prices that are affordable and comparable to services and prices received by urban consumers. Rural carriers throughout the country continue to respond aggressively to the technological and financial challenges of today by rapidly transforming their traditional public switched telecommunications networks (PSTNs) into dynamic Internet protocol (IP) broadband-based consumer-oriented communications networks. This response is natural for community-based rural providers that have a long history of taking their service quality responsibilities seriously. Universal service will play an integral role in helping rural

[3] *Bringing Broadband to Rural America: Report on a Rural Broadband Strategy*, Acting Chairman Michael J. Copps, Federal Communications Commission, GN Docket No. 09-29 (May 22, 2009) (Report on a Rural Broadband Strategy), ¶11.
[4] *Id.*, ¶¶ 80 and 82.
[5] *Id.*, ¶117.

providers meet current and future broadband challenges.

The high-cost USF mechanisms will be vital in establishing the necessary cost recovery that must flow to those providers committed to providing broadband in the Nation's most economically challenging areas. The highest priority in the Commission's National Broadband Plan must center on strengthening and preserving our universal service policies in a manner that restates the underlying program's value in an IP world. The current $7.2 billion contained in the American Recovery and Reinvestment Act (ARRA) broadband stimulus package and existing levels of high-cost USF support are woefully insufficient to meet the Nation's growing broadband needs. The Free Press estimates that to build broadband infrastructure to the approximate 7-9 million unserved households in the United States today it will cost $14-$45 billion.[6] This estimate does not take into consideration the cost of upgrading and maintaining the Nation's existing broadband infrastructure to provide the next generation (10+ Mbps capability) broadband services to all American consumers similar to what other developed countries currently provide to their consumers. Moreover, the cost per line, upon which the total estimate was based, appears to be significantly lower than the actual investment per line experienced by NTCA members.

The Commission must accept the undeniable fact that in order to provide comparable affordable broadband to all Americans and elevate the United States broadband ranking worldwide, high-cost USF support must increase substantially, the pool of USF contributors must include all broadband Internet service providers, and the pool should also include content providers, such as Google, which impose tremendous costs on the broadband Internet access providers that make up the public Internet.

[6] *Dismantling Digital Deregulation: Toward a National Broadband Strategy*, by Derek Turner, Free Press, March 2009, p. 102.

In the NOI, the FCC seeks comments on how to provide the most effective and efficient mechanisms for ensuring affordable broadband access by all citizens of the United States and how to develop a detailed strategy for achieving affordability of such service and maximum utilization of broadband infrastructure and service by the public.[7] To ensure the goal of a viable and open public Internet with high-quality, affordable and comparable high-speed broadband service to all consumers, the Commission must focus on providing sufficient, sustainable, and predictable USF support for broadband services throughout the "highest-cost areas" in the United States. Specifically, the Commission should adopt the following reasonable, timely, and prudent measures as the main components of its National Broadband Plan to achieve this overarching goal:

1. Define "broadband" based on high-speed Internet access capabilities during peak-hour or busy-hour load that are generally available in a significant sample of service offerings in urban areas to establish a standard of comparability and affordability in urban and rural areas. As the capability of broadband technology and IP applications develop, the definition must evolve to meet consumer, education, business, and public health/safety demands. By linking the definition to generally available services, affordability, and comparability, the definition is enduring, technology neutral, and in the public interest.

2. Include "broadband Internet access service" in the definition of "universal service."

3. Open a proceeding to define and identify "Market Failure Areas" throughout the United States and target these areas for future high-cost broadband USF support in order to ensure consumers living in these areas have access to affordable and comparable broadband service.

4. Define a "Market Failure Area" as an area that does not have the population base or economic foundation for any provider to justify broadband facilities build-out and ongoing maintenance without external monetary support.

5. Reclassify wireline and cable "broadband Internet access service," as "telecommunications service."

6. Regulate broadband Internet access service providers under Title II common carrier regulation.

[7] NOI, ¶13.

7. Apply a Title II earnings review to all broadband providers who voluntarily receive federal high-cost broadband USF support.

8. Allow rate-of-return (RoR) carriers to receive future federal high-cost broadband USF support through the Interstate Common Line Support (ICLS) mechanism, and price-cap carriers seeking to receive future broadband USF support through the Interstate Access Support (IAS) mechanism, when they voluntarily choose to have their broadband services regulated under Title II and voluntarily provide their total company regulated Title II costs, revenues, and earnings to be used when determining their future broadband high-cost USF support disbursements.

9. Include ongoing operations and maintenance expenses, in addition to construction cost, in the calculation of the future high-cost broadband USF support.

10. Transition all high-cost voice USF support to high-cost broadband USF support over a reasonable time period to avoid rate shock, prevent service disruptions, and provide stability and certainty during the transition.

11. Maintain RoR regulation for rural ILECs throughout the transition period and allow rural ILECs to base their high-cost USF support on each carrier's study area average costs to ensure affordable and uninterrupted broadband Internet access service to rural, high-cost consumers.

12. Allow RoR rural carriers to provide stand-alone/naked broadband service with the same level of universal service funding as allocated to their bundled voice and broadband service during and after the transition period.

13. Expand the base of USF contributors to include all retail broadband Internet access service providers.

14. Open a proceeding to determine whether other companies that impose significant costs on the public Internet, such as Google, should be required to contribute to the new high-cost broadband USF mechanism.

15. Assess USF contributions based on telecommunications and broadband revenues.

16. Include Internet backbone and special access (middle-mile) transport service costs in the calculation for determining future high-cost USF broadband support.

17. Eliminate the identical support rule and base high-cost USF support on each company's own costs within 5 years.

18. Refrain from capping and/or freezing rural carrier high-cost USF support because this will halt broadband deployment in high-cost areas and leave many rural consumers with substandard broadband service or without any broadband service whatsoever.

19. Require IP/PSTN traffic, specifically interconnected VoIP traffic, to pay applicable tariffed originating and terminating interstate access rates, intrastate access rates, and reciprocal compensation rates, throughout the transitional period and/or until such time as there is no longer a PSTN.

20. Implement intercarrier compensation (IC) reform as part of the National Broadband Plan by allowing state commissions to reduce voluntarily, on a company-by-company basis, intrastate originating and terminating tariffed access rates to interstate tariffed access rate levels within 5 years, and at the same time freeze interstate originating and terminating access rates in order to keep interstate access rates from increasing.

21. Establish a Restructure Mechanism (RM) as part of IC reform that allows RoR carriers to recover lost access revenues not recovered in end-user rates through supplemental ICLS and price-cap carriers to recover lost access revenues not recovered in end-user rates through supplemental IAS.

22. Establish Title II interconnection and network management rules pursuant to Sections 251 and 256 of the Act to allow for the seamless transmission of communications between public broadband Internet access networks.

23. Require vertically-integrated Internet backbone and special access (middle-mile) transport provider rates to be cost-based and non-discriminatory.

24. Expand and make permanent the Universal Service Fund's Rural Health Care Pilot Program. Telemedicine networks made possible by broadband services save lives and will improve the standard of healthcare and life in sparsely populated, rural areas. Telehealth and telemedicine must be a critical component to the National Broadband Plan.

25. Improve the proposed broadband pilot program for low-income customers by setting aside half of the pilot program funds for rural low-income consumers and by clarifying the speed and device availability requirements. Permitting eligible carriers to use the low-income broadband pilot program to offer broadband internet access to part of their service territories, rather than the entire territory, will enhance participation in the pilot program and, consequently, give more rural consumers affordable broadband internet access.

26. Use the Regulatory Flexibility Act (RFA) (5 U.S.C. Section 601) effectively and adopt alternative rules to reduce the economic burden on small providers of broadband Internet access service, such as RoR rural carriers.

NTCA's proposed National Broadband Plan for Rural America will allow the Commission to meets its regulatory responsibility, promote the public interest, convenience, and necessity, spur development of new advanced communications technologies and broadband deployment, and most importantly ensure that consumers living in rural high-cost areas are able

to receive evolving high-quality, affordable broadband services throughout the 21st century.

II. BROADBAND INTERNET ACCESS IS THE CRITICAL REFERENCE POINT FOR ALL FUTURE NATIONAL BROADBAND PLANS AND POLICIES.

The Commission seeks comment on several questions related to the definition of and access to broadband capability.[8] NTCA contends that the broadband capability most critical to the public interest is broadband service offered by Internet service providers (ISPs) generally referred to as "Broadband Internet Access." Broadband Internet Access has historically provided the substrate for IP applications. The innovation and unprecedented information explosion associated with the Internet depends upon Broadband Internet Access as a basic service. Broadband Internet Access, in its basic form, is the transmission capability that enables high throughput connectivity between "public" Internet addresses on a packet switched basis. Broadband IP services, such as Internet protocol television (IPTV), that operate on private networks are not considered Broadband Internet Access.

While many types of broadband may fulfill the above functional definition of Broadband Internet Access, the operating characteristics of the service are also of vital importance and should be taken into consideration. To that end, a rigorous definition of Broadband Internet Access including the speed of the service is needed. Such a definition will allow measurement of end-to-end throughput to assess the performance of the service and allow estimates of the facility cost to deliver the service. Performance measurements can only be managed, however, in jurisdictions where statutory authority can be exercised. Since the FCC does not have jurisdiction outside the United States, throughput can only be measured for domestic points of connection.

[8] *Id.* ¶ 16-18.

Sufficient bandwidth in local distribution facilities is a necessary condition for a high throughput Broadband Internet Access service offering, but not the only one. Middle mile and backbone facilities must have sufficient capability to meet customers' broadband demand. Moreover, these broadband standards should evolve with technological improvements since end-to-end throughput will need to be expanded to accommodate more resource intensive multimedia applications. Finally, rural broadband standards must be anchored in economic reality. Broadband deployment and price goals for rural markets should be based on a representative sample of the basic level of broadband Internet access service available in urban areas, and updated annually.

A. Defining Broadband.

The Commission asks whether its national broadband plan should bring broadband to 100 percent of the country.[9] The answer is yes. The Act specifically charges the Commission with regulating affordable and comparable communications service to all Americans.[10] Broadband Internet access is the communications platform of today and tomorrow. It is the foundation of all 21st century communications and must be affordable to all citizens to ensure achieving the economic, education, defense, and public health and safety goals of the United States.

The FCC also asks to whether broadband will require continued funding of operations and maintenance.[11] The answer again is yes. Without continued federal high-cost USF support for broadband operations and facilities maintenance, rural consumers will have substandard broadband service or no broadband service in the future. Such a result is contrary to the Act and would weaken the Nation's economy, national security, public health and education.

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[9] *Id.* ¶ 38.
[10] Sections 151, 152, and 254 of the Act.
[11] *Id.* ¶ 40.

As with any changing technology, the definition of the broadband supported service necessarily will evolve over time. The Commission therefore should define broadband based on peak-hour or busy-hour high-speed Internet access capabilities that are generally available in a significant sample of service offerings in urban areas to establish a standard of comparability and affordability in urban and rural areas. As the capabilities of broadband technology and IP applications develop, the definition must evolve to meet consumer, education, business, and public health/safety demands. By linking the definition to generally available services, affordability, and comparability, the definition is enduring, technology neutral, and in the public interest.

This approach to defining broadband takes into consideration the "functionality" of broadband Internet access service which enables connectivity and intelligence sharing between "public" Internet addresses on a packet switched basis. In addition, this approach takes into consideration broadband "capability" such as sufficient bandwidth and speed which are critical to broadband performance. Lastly, this approach acknowledges that broadband Internet access service must evolve rapidly to meet the substantial bandwidth needs of consumers, businesses, educational institutions, and public health, and public safety institutions throughout the United States.

B. Include Broadband In The List of Services Supported by High-Cost USF Support.

The Commission seeks comment on whether it should modify its universal service programs to include broadband as a supported service eligible to receive support directly from the federal high-cost USF mechanism and the low-income USF mechanism.[12] The answer is a definitive yes. NTCA urges the Commission to establish a broadband universal service policy

[12] *Id*. ¶ 41.

that will take into consideration the financial burdens placed on small, rural LECs serving high-cost areas throughout the United States. The Commission needs to make broadband Internet access service a USF supported service in order to make broadband affordable to all consumers living in rural and high-cost areas throughout the United States.

III. THE MARKET FOR BROADBAND INTERNET ACCESS IN MANY RURAL AREAS IS NOT FINANCIALLY VIABLE FOR ENTRY, AND WILL REQUIRE SUPPLEMENTAL FUNDING IF A NATIONAL BROADBAND PLAN IS TO BE SUCCESSFUL.

The FCC questions whether and how competition among broadband providers is sustainable, in particular how "subsidizing" more than one provider in areas with low population density affects the ability of providers to achieve optimal economies of scale and to continue to operate effectively.[13] Such questions pertaining to broadband competition in rural areas shed light on a fact NTCA member companies have long known, either with traditional voice or now with broadband: Many rural markets are too sparsely populated and thus too expensive for even a single provider. Funding multiple carriers in rural markets is inefficient and expensive. In addition, while the existing federal universal service system has been essential in aiding rural carriers in attaining the broadband deployment record that regulators have recognized,[14] continued funding is necessary to support the investments already made and additional funding beyond that in today's USF will be necessary to engender broadband deployment to the nation's most rural areas. If the national broadband plan is going to realistically bring service to these areas, providers must have assurances that the investments and expenses they are required to make will be justified by public policy.

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[13] *See* Notice ¶49.

[14] *See*, for example, Recommended Decision of the Federal-State Joint Board on Universal Service (rel. January 29, 2008), citing rural LECs for the "commendable" job of providing broadband and voice services to their customers, ¶ 30.

A. The Commission Should Open a Proceeding to Define and Identify "Market Failure Areas" Throughout the United States and Target These Areas for Future High-Cost Broadband USF Support in Order to Provide Consumers Living In These Areas with Affordable Broadband Service.

One of the FCC's chief goals in this NOI, requesting comments on policy changes necessary to bring broadband services to rural customers, is itself recognition that there are areas of the nation today where changes are necessary to make that goal a reality. In light of the scarcity of government funding that would be available if broadband deployment is to become a national universal service goal, NTCA believes that the Commission must undertake the daunting but essential task of identifying rural areas where the market alone cannot support even one broadband carrier without supplemental support such as from USF.

Toward that end, NTCA herein introduces a new term that it suggests be adopted for identifying these locations, "market failure areas." This term accurately depicts the fact that many areas of the nation simply do not have the population base for any provider to justify broadband facilities build-out and ongoing maintenance without assistance. These "market failure areas" need to be determined at a sufficient level of granularity so that (1) support is targeted at specific areas that cannot otherwise produce adequate retail revenues to cover a carrier's costs, and (2) universal service funding resources will be targeted and conserved. NTCA recommends that the Commission open a proceeding to define and identify "market failure areas" throughout the United States, and then determine the most efficient method for distributing future high-cost broadband USF support to these areas in order to provide affordable broadband service to consumers living in these areas.

In addition, the FCC seeks further comment on the role of regulation in achieving the objectives contemplated by Congress in establishing a broadband plan, and specifically where market-based policies have been unsuccessful in ensuring broadband Internet access and "what

lessons can be learned with regard to whether market forces alone can deliver broadband to rural areas."[15] NTCA applauds the Commission for recognizing that there are swaths of the country where regulatory intervention will be required to ensure broadband infrastructure is deployed and operated. As a first step in the process, NTCA recommends that market failure areas should be established by dividing the nation geographically into support areas that are small enough to reasonably demonstrate the costs of broadband facilities and operating expenses in each area. These areas will need to be developed to accurately confirm that support is required in order to ensure broadband deployment to all households and businesses in that support area.

NTCA urges the Commission to gather input, as soon as possible, from all interested and affected parties on how to establish exactly which areas are too costly and thus would qualify as broadband "market failure areas," as opposed to markets that do not require future high-cost broadband USF support. The process needs to be transparent and focused on areas – not providers -- so that it is not dominated by corporations with the largest reservoir of financial, technical and political resources.

Clearly, the establishment of market failure areas will also need to help address the widely recognized problem of lack of broadband services in rural areas served by non-rural price cap-regulated carriers.[16] Focusing on costs of providing broadband services in all market failure areas should be beneficial in making these areas more desirable for economic development investment and jobs creation. NTCA believes that ultimately targeting broadband support to market failure areas is sound public policy that is absolutely necessary if citizens residing in the

[15] *See* Notice ¶ 37.

[16] *See*, for example, Comments of National Association of State Utility Consumer Advocates, FCC Docket No. 08-262, at p. 26, fn 108, which state that "it is widely known that rural carriers have done a better job of bringing broadband to their customers than have non-rural carriers (at least in the rural portions of the non-rural carriers' territories)."

most high-cost, rural areas, especially very sparsely populated unincorporated areas, are ever to receive affordable and comparable broadband service during the 21st century.

B. The FCC Should Establish Cost Data to Identify "Market Failure Areas" and Target Support to Such Areas.

The Commission also questions whether the national broadband plan should seek to bring broadband to 100 percent of the country, and in the process how useful or necessary is it to understand the costs of deploying broadband networks in unserved or underserved areas.[17] NTCA obviously believes that if the plan is to be equitable, then of course it will have to attempt to achieve the goal of broadband availability for every citizen, regardless of where they live. To accomplish this, the Commission must heed the universal service requirements contained in law[18] and undertake the critical step of determining broadband network and operating costs that lead to designation of "market failure areas."

The challenges in determining costs are undoubtedly formidable, as the Commission itself recognizes.[19] But establishing such costs, and thus determining what areas of the country require support, seems to be the only way to overhaul the universal service system if the broadband national plan is to fulfill its promise to all Americans. Prior to understanding such costs, though, a definition of broadband Internet access will have to be adopted, as spelled out in Section II of the Comments. Once that occurs, then the Commission will know the target for which it is aiming.

NTCA acknowledges there are justifiable concerns about the reliability of any cost methodologies that the Commission might consider. In particular, accurately determining costs in rural areas presents significant challenges since the costs per customer are so much higher and

[17] *See* Notice ¶38.
[18] Section 254 (a)(1) of the Telecommunications Act of 1996 requires that "access to advanced telecommunications and information services should be provided in all regions on the Nation."
[19] *See* Notice ¶38.

the variables (such as customer density and terrain) differ so drastically across locations. The Commission asks whether cost models are viable in estimating broadband costs, and if so whether they can be verified in an objective, dependable manner.[20] NTCA appreciates the concerns about validity of any cost models for rural costs. Such concerns are as valid today as they were almost a decade ago when the Commission adopted the Rural Task Force recommendation to not utilize the non-rural LEC proxy model in determining rate-of-return LEC costs for universal service funding.[21] Nevertheless, it is critical that once a definition of broadband Internet access service is settled upon, the Commission must seek a realistic, credible and transparent process to determine deployment and operating costs for broadband networks in the above-mentioned "market failure areas" and to distinguish those cost characteristics from urban areas.

IV. WHILE EXISTING UNIVERSAL SERVICE POLICIES HAVE HELPED ACHIEVE BROADBAND AVAILABILITY ACHIEVED BY RURAL CARRIERS, THAT FUNDING IS INADEQUATE TO ACHIEVE UBIQUITOUS AND SUSTAINABLE BROADBAND DEPLOYMENT AND MAINTENANCE

Certainly in great part due to existing universal service federal policy, as the Commission observes,[22] carriers have made advancements in broadband deployment by making investments with the assistance of high-cost support. It is undeniable that rural LECs in particular have been progressive in deploying broadband-capable plant, despite flat or declining federal USF support for rural LECs in general for the majority of this decade.[23] According to a 2008 NTCA survey,

[20] Id
[21] *See* Rural Task Force Recommended Decision to Federal-State Universal Service Joint Board (rel. Sept. 29, 2000), CC Docket 96-45.
[22] Id ¶ 39.
[23] *See* Recommended Decision, Federal-State Joint Board on Universal Service ("*Joint Board Recommended Decision")* FCC 08-22 (rel. January 29, 2008), ¶ 39. In fact, because rural LECs had done a commendable job of providing voice and broadband services, the Joint Board concluded it was in the public interest to maintain existing rural LEC USF support mechanisms based on the provider's embedded costs.

every responding company offered broadband service to some portion of their customer base.[24] Yet a chasm remains in broadband availability between urban and rural areas, even those served by rural LECs, leading to the inevitable conclusion that modifications to universal service policy are essential if national broadband goals with even reasonably comparable speeds are to become a reality.

A. Broadband Internet Access Service Should Be Declared a Telecommunications Service Subject to Title II Common Carrier Regulation.

NTCA is heartened by the questions and processes posed by the Commission that appear to signal a "sea change" of sorts in the agency's approach to bolstering broadband services. The Commission asks whether and why market-based policies have been unsuccessful in achieving broadband access, as well as the efficacy and efficiency of regulation in achieving better access. NTCA responds with a resounding "yes" to the lack of success of market-based policies in rural areas and to the need for regulation in improving broadband access in these same areas.

As an initial matter to stimulate deployment, broadband access to the Internet should be added to the list of supported services eligible to receive support from High-Cost and Low-Income USF programs. But such designation is only the first hurdle to clear in improving the regulatory environment and incentives for broadband deployment in very rural areas. If the Commission properly follows suit and adds broadband access to the definition of supported services, it necessarily follows that in accordance with Section 254 language recognizing that "universal service is an evolving level of telecommunications services that the Commission shall establish under this section,"[25] broadband Internet access will become a telecommunications service and in the process subject to common carrier regulation under Title II as is the case with

[24] *NTCA 2008 Broadband Internet Availability Survey Report*, 2008, p. 6.
[25] *See* Telecommunications Act, Section 254(c)(1).

any telecommunications service.

This change would require a modification to the Commission's 2005 Order in CC Docket No. 02-33, in which the Commission allowed companies the ability to offer the transmission component of their wireline broadband Internet access service on a non-common carrier or common carrier basis.[26] Then not only would broadband Internet access services become eligible for universal service support under such action, but the services would also be subject to other common carriage regulations that the Commission may determine necessary to improve affordability and availability for consumers, and also to promote public safety and homeland security as the nation increasingly relies on these services for the majority of its communications needs.[27]

B. The Commission Should Apply a Title II Earnings Review To All Broadband Providers Who Voluntarily Seek Future Federal High-Cost Broadband USF Support.

To ensure affordable and comparable broadband Internet access service to all Americans, while at the same time preventing the fraud, waste and abuse of the federal high-cost USF support mechanisms, the Commission should impose additional regulatory scrutiny on carriers seeking high-cost broadband USF support while creating a regulatory contract between broadband providers and the FCC. Specifically, all carriers seeking to receive federal high-cost broadband USF support will voluntarily agree that their company's regulated Title II costs, revenues, and earnings will be used when determining their future broadband high-cost USF support disbursements as a condition of receiving such support. Future broadband high-cost USF support should be distributed as supplemental ICLS or IAS support. Those carriers that

[26] *See Appropriate Framework for Broadband Access to the Internet over Wireline Facilities,* CC Docket No. 02-33, Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 14853, (2005) (*Wireline Broadband Internet Access Order), aff'd sub nom. Time Warner Telecom, Inc. v. FCC,* 507 F.3d 205 (3d) Cir. 2007).
[27] *See* Notice ¶ 72.

voluntarily agree to have their broadband services regulated under Title II would receive supplemental ICLS or IAS to the extent necessary to recover all reasonable regulated costs. RoR carriers' earnings would be adjusted to 11.25% and price cap carriers' earnings would be adjusted in accordance with price cap rules.

Regulators and Congress are asking carriers to build a national broadband network. Rural LECs are attempting to do their part in the rural high-cost areas they serve. Carriers operating in rural, high-cost areas should neither be expected nor required to commit resources without a reasonable expectation of a return on their investment. Likewise, the Commission, Congress, and the American public are entitled to know that federal USF dollars are being used to support this national broadband network and that these USF dollars are being used prudently and consistent with the FCC's National Broadband Plan.

C. New Broadband Universal Service Must Support Both Construction and Ongoing Operations and Maintenance.

The Commission also asks whether, if it modifies existing universal service programs, priority should be given just to funding of construction of networks, or if ongoing support for operations and maintenance is essential.[28] NTCA urges that priority be given to both network construction and to ongoing operations and maintenance, similar to the existing federal USF programs that support both capital investments and ongoing expenses.[29] Funding construction of broadband networks alone will not be adequate to provide the certainty that any provider will require to make the commitment to invest in, operate and maintain broadband services in areas that do not otherwise justify the risk.[30]

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[28] *See* Notice ¶ 41.

[29] Current USF allows for recovery of circuit-switched costs and the portion of broadband costs common with the circuit-switched network.

[30] NTCA continues to recommend that broadband expenses supported by a new USF include middle-mile and access to the Internet backbone. These costs are considerably higher in rural areas because of the distance of middle-mile

As stated above, NTCA proposes that future USF support for broadband construction, operations and maintenance would be limited to qualifying "market failure areas" that the Commission ultimately designates. For companies under rate-of-return regulation, since broadband access to the Internet would become a telecommunications service, federal USF for these qualifying areas would be limited to the federal authorized rate of return, which would further constrain financial demands on the new broadband USF.

D. The Transition from Existing USF to Broadband USF Should Take Place Over A Reasonable Period of Time to Ensure Stability.

While making broadband access to the Internet part of the universal service definition will unquestionably help spur on deployment in rural areas, it is critical that the transition from circuit-based USF to a broadband mechanism is carefully managed and gradual. The Commission asks whether the existing USF programs might be better targeted to address broadband deployment.[31] NTCA recommends ultimately doing so. However, it is critical that the progress gained under existing high-cost USF (particularly in areas served by rural ILECs) not be inadvertently disrupted with a premature, unwarranted discontinuation of existing High-Cost programs. Without careful thought to this transition, the Commission could not only thwart additional investment but could also jeopardize the service that has been successfully deployed today. This transition is consistent with the Joint Board's 2008 proposal, which similarly recommended a transition of an unspecified period of time from existing High-Cost USF to a broadband fund.[32]

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transport facilities and the lack of competition for such facilities in rural areas. *See Initial Comments,* NTCA, WC Docket No. 05-337, CC Docket No. 96-45,

[31] *See* Notice ¶41.

[32] *See Joint Board Recommended Decision* ¶ 31.

E. The Commission Must Maintain RoR Regulation for Rural ILECs Throughout The Transition Period and Allow Rural ILECs to Base Their High-Cost USF Support on Each Carrier's Study Area Average Costs to Ensure Affordable and Uninterrupted Broadband Internet Access Service to Rural, High-Cost Consumers.

The Commission must maintain existing RoR regulation for rural ILECs throughout the period of transforming the voice high-cost USF support mechanisms to broadband high USF support mechanisms. Any disruptions to the current rural high-cost USF mechanisms, RoR regulation, intercarrier compensation, and NECA pooling mechanisms during the development and implementation of a future broadband high-cost USF support mechanism will likely leave many rural consumers without service or result in price increases that will prevent consumers living in these areas from purchasing broadband Internet access service. This scenario would violate the Commission's universal service affordability and comparability requirements. The transition to an all broadband universal service mechanism must be done carefully, prudently and within a reasonable time period so that all rural, high-cost consumers are unharmed in the process. To ensure this, the FCC must allow rural ILECs to base their high-cost USF support on each carrier's study area average costs to ensure quality broadband Internet access service is uninterrupted and remains affordable to the consumers living in their high-cost service areas.

F. Expand The Base of USF Contributors to Include All Broadband Internet Access Service Providers Without Exception.

If broadband access to the Internet becomes USF-eligible, the Commission asks whether contributions to universal service should be required from broadband providers.[33] Since broadband access would be designated as a telecommunications service and eligible for USF under NTCA's proposal it is essential that all broadband providers contribute to universal service. Expanding the contributions base to all broadband providers is especially appropriate

[33] *See* Notice ¶ 41.

given Congress' mandate for-the Commission to develop a national plan to bring broadband to all consumers. Furthermore, broadening the base of contributions will minimize funding requirements, while also paving the way for fairer and quicker deployment of broadband in hardest-to-reach areas.

NTCA therefore urges the Commission to expand the pool of USF contributors to include all cable, wireline, wireless, electric, and satellite broadband Internet access providers, all voice substitute services and all special access service providers. Section 254(d) specifically provides the Commission with permissive authority to require any provider of interstate "telecommunications" to contribute to universal service. The underlying transmission component of all broadband Internet access services is "telecommunications" as defined by the Act.[34] Requiring all broadband service providers and all voice substitute providers to contribute will provide sufficient universal service collections and create long-term stability in the USF contribution methodology.[35]

G. The Commission Should Open A Proceeding To Determine Whether It Can Expand The Base of USF Contributors to Include Information Service Providers, Such As Google, Ask.com, Bing, and Yahoo, Which Impose Substantial Costs On The Public Internet.

A recent study demonstrates that Google's search engine imposes an enormous bandwidth demands on Nation's public Internet and that Google's bandwidth usage is rising

[34] Telecommunications is defined as the transmission, between or among points specified by the user, of information of the user's choosing, without change in form or content of the information as sent and received. 47 U.S.C. § 153(43). Information service is defined as the offering of a capability for generating acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications. 47 U.S.C. § 153(20).

[35] NTCA also urges the Commission to continue to assess USF contributions based on revenues as part of the FCC's National Broadband Plan. Revenues-based assessment methodology is technologically neutral, and will not be overly influenced by the ongoing migration to IP technologies. If the Commission assesses a broad base of services, the contribution factor will stabilize or decrease, which will limit the migration away from currently assessed services. NTCA strongly urges the Commission to retain the current revenues-based contribution methodology for USF assessments, which has proven to be the most equitable, non-discriminatory, and administratively feasible mechanism for providing specific and predictable universal service support in accordance with the Act.

rapidly.[36] The study also demonstrates, however, that Google's bandwidth usage is substantially greater than its bandwidth costs, which appear to be subsidized by consumers. The study estimates that Google used 16.5 percent of all U.S. Consumer Internet traffic in 2008. Google's share of this traffic is estimated to grow to 25 percent in 2009, and 37 percent in 2010. What drives this insatiable appetite for bandwidth is Google's search engine bots which regularly copy every page on the Internet, some as frequently every few seconds, and Google's YouTube video streams which account for almost half of all video streamed on the public Internet.

The study found Google's paid share of its U.S. consumer broadband Internet bandwidth costs to be approximately $344 million in 2008 or just 0.8 percent of all U.S. consumer bandwidth costs in 2008. Thus, when comparing Google's 2008 bandwidth usage to total U.S. consumer bandwidth costs in 2008, Google apparently received an implicit $6.9 billion subsidy from American consumers. It is estimated that Google will receive a consumer subsidy of between $7-$15 billion annually in 2009 and 2010. This apparent growing consumer cost burden may threaten the future affordability of retail broadband Internet access services and jeopardize the future deployment and subscription of broadband to all Americans.

To verify this information and insure that search engine companies, such as Google, are paying their fair share of the bandwidth usage on the public Internet, the Commission should open a proceeding to determine whether the Commission should require Google to contribute to future high-cost USF support mechanisms. Expanding the base of USF contributors to include Internet service engine companies such as Google, Ask.com, Bing, and Yahoo would help the Commission in its efforts to achieve the goal of providing sustainable and affordable broadband Internet access services to all Americans.

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[36] *A First Ever Research Study: Estimating Google's U.S. Consumer Internet Usage & Cost – 2007-2010*, by Scott Cleland, President Precursor LLC, Chairman, NetCompetition.org (December 4, 2008).

H. The Commission Should Include Internet Backbone and Special Access (Middle-Mile) Transport Service Costs In The Future USF Broadband Support Calculation.

The Commission seeks comment on what it should do concerning middle-mile transport cost to the IP backbone.[37] NTCA recommends that the Commission include Internet backbone and middle-mile special access transport costs as part of a future high-cost broadband USF support determination. NTCA currently urges the Commission to require that Internet backbone and middle-mile transport services be nondiscriminatory and cost-based. If Internet backbone and middle-mile costs are included in the definition of universal service, ensuring that such services are non-discriminatory and priced at cost will help keep the overall universal service funding obligation low. However, these costs will still be substantial in very high-cost sparsely populated areas and should be included the future high-cost broadband USF support calculation.

ISPs will be the LECs of the future. ISP revenues and expenses therefore should be regulated under Title II and should be considered part of the high-cost USF broadband calculation. Internet and network expenses should be recoverable within limits. Allowing the recovery of Internet backbone and middle-mile transport costs as part of the future broadband USF mechanism will help ensure that high-cost rural consumers receive comparable and affordable broadband services.

I. Allow RoR Rural Carriers To Provide Stand-Alone/Naked Broadband Service With The Same Level Of Universal Service Funding As Allocated To Their Bundled Voice And Broadband Service During And After The Transition Period.

Under the current rules, many rural ILECs provide consumers living in their high-cost service areas with a bundled voice and digital subscriber line (DSL) broadband service offering under a NECA tariff. This bundled service provides high-cost rural consumers with both affordable voice and broadband services. The NECA tariff rate for bundled voice and DSL

[37] NOI, ¶¶ 17 and 35.

service is also significantly cheaper than the NECA tariff rate for stand-alone DSL broadband service because the voice component of the bundled service offering is supported by high-cost USF support, whereas the stand-alone broadband DSL service is not supported by USF.

Rural consumers receiving broadband service in rural ILEC service areas know they are receiving the highest quality broadband service, and in some cases, the only broadband service available in these areas. Like urban consumers, rural consumers are seeking cheaper voice services via wireless and VoIP, but still want to keep their high-quality rural ILEC broadband service. The current high-cost USF rules, however, make it very difficult for consumers to purchase only rural ILEC broadband service. NTCA therefore recommends that during the development, implementation and completion of the Commission's National Broadband Plan, that the FCC stay the current rural ILEC voice/broadband bundling rules and allow rural ILECs to offer stand-alone/naked DSL broadband service with same levels of high-cost USF support that would be allowed in their bundled voice/broadband service offering.

Given that the Commission and Congress seek to move all voice USF support into future broadband USF support and seek to accelerate affordable broadband deployment and penetration throughout the United States, it is good public policy for the Commission to immediately stay any USF support rules that will hinder making broadband services affordable to consumers. NTCA's proposed stay of the current rural ILEC voice and broadband bundling rules, pending the Commission implementation and completion of the FCC's National Broadband Plan, will allow rural ILECs to continue to provide affordable broadband services and accelerate new broadband deployment in currently unserved areas. NTCA's proposed stay is consistent with the FCC's mission of providing affordable broadband services to all consumers and is consistent with the ARRA Broadband Stimulus Plan.

J. The Commission Should Refrain From Capping and/or Freezing Rural Carrier High-Cost USF Support Because This Will Halt Broadband Deployment In High-Cost Areas And Leave Many Rural Consumers With Substandard Broadband Service Or Without Any Broadband Service Whatsoever.

The Commission seeks comment on how it should modify its current USF support mechanisms as part of its National Broadband Plan.[38] When adequate funding is available, rural ILECs respond by investing to bring high-quality broadband to their customers.[39] These companies provide vital communications services to rural communities. These services are often vastly superior to services offered to similarly situated consumers in areas served by RBOCs. Rural ILECs should be rewarded and encouraged for investing, not penalized by the imposition of additional, uncompensated broadband build-out requirements. The Commission should therefore not impose additional USF caps (and/or support freezes) that unlawfully foreclose all opportunities for rate-of-return carriers to earn the authorized rate of return, or shift excessive costs to rural consumers in violation of the comparable rate requirement of Section 254 of the Act.

If there were an economically feasible way that the most remote customers could be provided broadband through any method other than satellite, rural carriers would undoubtedly be doing so. Rural carriers currently use a variety of technologies to reach customers: DSL, fiber to the home/fiber to the curb, wireless (both licensed and unlicensed), satellite and cable modem. These carriers are intimately familiar with rural issues and challenges, and understand the best way to serve their customers - who are, in large part, friends and neighbors in their community. While great strides in rural broadband deployment are being made, there is undeniably much

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[38] NOI, ¶¶ 39-41.

[39] **See NTCA 2008 Broadband/Internet Availability Survey Report, October 2008, http://www.ntca.org/images/stories/Documents/Advocacy/SurveyReports/2008ntcabroadbandsurveyreport.pdf.**

more progress necessary before broadband is available to all. Caps and/or freezes on high-cost USF support are fundamentally inconsistent with the Commission's broadband build-out goals. Most rural companies have deployed broadband throughout most of their serving areas. Without the assurance that necessary funding will be available, companies cannot make the significant financial commitment to reach the remaining customer locations with broadband facilities.

V. IT IS CRITICAL THAT CERTAIN ASPECTS OF BROADBAND INTERNET ACCESS AND VOIP SERVICE FALL UNDER REGULATORY OVERSIGHT IN ORDER TO PROTECT THE INTERNET, PUBLIC SAFETY AND SECURITY.

The Commission seeks comment on the success of market mechanisms in ensuring broadband access.[40] The Commission further seeks comment on broadband infrastructure and service completion, interconnection, nondiscrimination and openness and whether they should factor these into a national broadband plan.[41] The Commission also seeks comment on how to identify which broadband services are most needed to advance public safety and homeland security.[42] Market mechanisms alone will fail to preserve either the existence or the evolution of the public Internet. There must be federal regulatory intervention over providers of interconnected voice over Internet protocol (VoIP) services.

A. The Commission Must Require Interconnected VoIP Service To Pay Intercarrier Compensation During Comprehensive USF, IC, and Broadband Reform.

If the Commission does not soon issue a specific rule that requires interconnected VoIP to pay applicable access charges, the intercarrier compensation (IC) reform will be thrown into a state of chaos. AT&T, Verizon, Qwest and other IXCs and wireless carriers will eventually take advantage of this loophole in the rules in the near future to classify all of their voice traffic as interconnected VoIP and refuse to pay access charges. Super-arbitrage will occur and the access

[40] NOI, ¶78.
[41] *Id.* ¶48.
[42] *Id.* ¶72.

revenues needed to make broadband available, affordable, and comparable in rural LEC service areas will no longer exist.[43] Rural consumers will be left with either substandard broadband service or no broadband service at all.

In the IP-Enabled services NPRM, the Commission stated, as a policy matter, that the Commission believes that "any service provider that sends traffic to the PSTN should be subject to similar compensation obligations, irrespective of whether the traffic originates on the PSTN, on an IP network, or on a cable network."[44] The Commission further maintained "that the cost of the PSTN should be borne equitably among those that use it in similar ways."[45] If interconnected VoIP providers were exempted from paying access charges, the Commission would be handing VoIP providers an unfair advantage in the highly competitive voice communications market in direct conflict with its own principle of competitive neutrality.[46]

The policy implication of classifying VoIP as an information service is both dire and immediate. If an information service classification for traffic exchanged between IP and PSTN networks were approved, all interconnected carriers that would serve to gain from unclear compensation obligations associated with "information services" would be motivated to claim that all traffic exchanged is from IP networks. Determining that IP/PSTN traffic exchange is not required to pay access charges is tantamount to creating a super-arbitrage incentive to gut any rational transition plan. Telecommunications voice service providers, such as AT&T, Verizon and others, will no doubt reclassify, retariff, or reconfigure all their current PSTN Voice Service to Interconnected VoIP Service simply to avoid paying legitimate access charges and universal

[43] As fewer revenues must support a high fixed cost network, the remaining services have to be priced higher to recover the investment.
[44] *IP-Enabled Services*, Notice of Proposed Rulemaking, ¶ 33, WC Docket No. 04-36 (rel. March 11, 2004).
[45] *Id.*
[46] The Commission's principle of competitive neutrality requires that rules neither unfairly advantage or disadvantage one provider over another and neither unfairly favor or disfavor one technology over another.

service contributions. The $4 billion in potential annual originating access savings, coupled with $4 billion in potential terminating access savings, is a windfall for AT&T, Verizon, and Qwest, and conversely will be a death knell for many RoR rural LECs.

Declaring all IP/PSTN services, including interconnected VoIP, as information services also has substantial implications for the process of obtaining interconnection agreements. As Free Press suggests, "[t]his change in policy has substantial implications for the ability of VoIP providers to obtain reasonable interconnection arrangements with other carriers. This move would likely increase the level of uncertainty in the access charge regime precisely at a time when the Commission is seeking to provide certainty. By declaring interconnected VoIP an information service, the structure of Section 251 and the entire industry's interconnection regime is called into question. This is a very dangerous move, as there is no parallel regime under Title I to ensure competitive access."[47]

Exemption or forbearance of interconnected VoIP service from access charges would significantly increase the size of the RM or force rural LECs to unjustly raise their customer rates to recover costs imposed on their networks by VoIP providers or incur substantial revenue losses.[48] Rural LEC consumers would be faced with higher end-user rates, degradation in the quality of their underlying LEC's network, or the possible loss of their carrier of last resort. Rate shock and potential loss of subscribers to the PSTN and IP networks would be a very real possibility, particularly for low-income consumers who do not qualify for LifeLine or Linkup support and who could not afford a high-speed Internet access connection. Specifically, working

[47] *Free Press Written Ex Parte Presentation*, CC Docket 01-92, CC Docket 96-45, WC Docket 05-337, and WC Docket 06-122, p. 3, filed on October 24, 2008.

[48] The Commission may forbear from the regulation of telecommunications carriers or telecommunications services only if it determines the regulation of the carrier or service is: (1) not necessary to achieve just and reasonable rates, (2) not necessary for the protection of consumers, and (3) forbearance is consistent with the public interest. 47 U.S.C. § 159(10)(a)(3).

families who currently can afford LEC telephone service and/or dial-up Internet service would not be able to afford the high-speed Internet access connection that VoIP providers must have in order to offer voice service.[49]

The new features and cost savings associated with VoIP service have only been possible by exploiting the extensive network put in place by telecommunication service providers. Most customers assume VoIP can offer "unlimited long distance" because of advances in technology. This notion is far from the truth. Rather, VoIP providers offer lower cost services by avoiding access charges through a variety of methods, including claiming ESP exemptions, the masking of traffic (phantom traffic), and "local" termination (sending the call to a point that is EAS to the called party and terminating it as a local call). Much of the "enhanced functionality" provided by VoIP services can also be accomplished through Class-5 and circuit-switched technologies.

Rather than innovation being stymied by making VoIP providers subject to access charges, such a decision would go a long way toward establishing certainty in funding and enabling competitive carriers to have equal access to network resources. The robust interconnected network has stimulated innovation and has enabled many of the services now available. VoIP providers only exist because there is a network in place. By putting the network's future funding in jeopardy, everyone loses. The Commission should classify interconnected VoIP service as a "telecommunications service" and require interconnected VoIP providers to pay access charges so that telecommunications consumers may continue to enjoy the

[49] Forbearance from assessing access charges on VoIP traffic is not in the public interest. Access charges and universal service obligations fall principally and mandatorily on telecommunications service providers, such as Inflexion, in recognition of the fact that they benefit from the nationwide public telecommunications system which is supported by access charges and USF contributions. Inflexion and other providers should not be excused from these obligations under the guise that they will be shackled by regulation. The imposition of access and universal service obligations on these providers is not pervasive regulation of entry or rates. Applying access charges to VoIP providers will eliminate the potential for regulatory arbitrage, ensure competitive neutrality, and provide all providers of voice services with certainty pending the outcome of the major proceedings on universal service support, inter-carrier compensation and IP-Enabled services.

benefits the interconnected network has provided.[50]

VI. AS A CRITICAL COMPONENT OF A NATIONAL BROADBAND PLAN, STATE COMMISSIONS SHOULD BE ALLOWED TO VOLUNTARILY MOVE INTRASTATE ORIGINATING AND TERMINATING ACCESS RATES AND RATE STRUCTURES TO CAPPED INTERSTATE ACCESS RATE LEVELS AND STUCTURES OVER A REASONABLE TIME PERIOD.

As a critical component of making broadband available and affordable in high-cost rural areas, the Commission should encourage and allow state commissions to reduce intrastate "originating and terminating access" rates and change the access structure to the interstate rates and structure on a voluntary basis.[51] As an incentive for taking these actions, the Commission would provide supplemental federal USF support and/or increase subscriber line charges to offset intrastate lost access revenues. The Commission does not have the statutory authority to require states to reduce their intrastate toll access charges under Section 152(b) of the Act. The Commission should therefore allow state commissions to determine the length of the transition period based on the magnitude of the difference between intrastate and interstate tariffed access rates, but in no case should the transition period exceed five years. This approach appropriately recognizes the states' responsibility for setting intrastate access rates, while providing an

[50] The Act defines "telecommunications services" as "the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available to the public, regardless of facilities used." The following attributes of interconnected VoIP service clearly demonstrate that interconnected VoIP service is voice service, should be classified as a "telecommunications service," and should be required to pay access charges. First, customers of interconnected VoIP service pay a fee for sending and receiving voice telephone calls. Second, interconnected VoIP service uses North American Numbering Plan (NANP) telephone numbers to facilitate voice calls throughout the PSTN. Third, interconnected VoIP uses the PSTN and imposes costs on the underlying ILEC network in the same way as other telecommunications providers who pay access and contribute to the universal service fund. In fact, from the customer's perspective, interconnected VoIP service is identical to traditional telephone voice service. Undoubtedly, interconnected VoIP is voice service, should be classified as a "telecommunications service" and should be required to pay access charges.

[51] The current interstate access rates are based on the embedded cost pricing methodology and the Commission has determined that this methodology is best suited to the unique economic, geographic, topographic needs of RoR carriers, and for the sustainability of the NECA pools. Tariffed rate setting for intercarrier compensation rates in lieu of negotiated commercial agreements between small, rural RoR carriers and large, vertically integrated interexchange and wireless carriers is a reasonable approach, given the disparity in size between the negotiating parties and the efficiencies created through pooled rate setting.

incentive for states to collaborate with the Commission to achieve the goal of reforming IC. Freezing interstate tariffed access rates is also necessary in order to keep cost-based rates from increasing as a result of demand decreases. This reasonable interim step will address the largest disparity between current IC rates.

These changes will benefit not only IXCs but also customers. IXCs will benefit by paying lower access rates than they otherwise would if interstate rates were not capped and if intrastate rates were not reduced to interstate levels. Since IXCs pass on access costs in their retail long-distance rates, customers will also benefit by paying lower retail long-distance rates. Moreover, rural customers will also continue to receive the high-quality service and will benefit by rural carriers' continued investment in broadband infrastructure.

NTCA supports a proposal that allows state commissions to voluntarily move intrastate originating and terminating toll access rates and structures to interstate access rate levels and structures over a reasonable time period. NTCA further recommends freezing interstate originating and terminating access rates in order to keep interstate access rates from increasing in the future.[52]

VII. AS A CRITICAL COMPONENT OF A NATIONAL BROADBAND PLAN, THE COMMISSION SHOULD ADOPT AN ALTERNATIVE HIGH-COST USF COST RECOVERY MECHANISM PRIOR TO THE IMPLEMENTATION OF USF AND IC REFORM.

The Commission has consistently recognized its legal responsibility to provide reasonable cost recovery and has regulated in a manner that allows RoR carriers to recover their costs along with a reasonable return on investment.[53] The Commission has also recognized the unique characteristics of rural RoR carriers and the challenges faced in providing quality service

[52] For the National Exchange Carrier Association (NECA) pool, the cap would reflect the composite pool average switched access rate level. NECA would continue to have the ability to assign pool study areas to rate bands as it does currently.
[53] RTF Order, ¶ ¶ 24 and 25 and MAG Order, ¶¶ 3, 12, 131, 132, and 134.

to their customers.[54] In the *MAG Order* the Commission stated that "Our examination of the record reveals that rate-of-return carriers generally are more dependent on their interstate access charge revenue streams and universal service support than price cap carriers and, therefore, more sensitive to disruption of those streams. . . . . The approach that we adopt will provide these carriers with certainty and stability by ensuring that the access charge reforms we adopt do not affect this important revenue stream."[55] The Commission has also recognized that RoR regulation operating in tandem with the USF has worked well, not only for providing quality service at reasonable rates but also for incenting the deployment of broadband in rural areas.[56] NTCA urges the Commission to adopt a Restructure Mechanism (RM) to allow RoR carriers to recover lost access revenues through increases in the ICLS mechanism and to provide the needed cost recovery for rural carriers investing in broadband infrastructure. The RM should be in place prior to states requiring access reductions.

NTCA believes that the Commission should establish a Federal Benchmark (FB) rate to ensure equity between states and to limit the size of the RM. For those states opting into the receipt of federal supplemental ICLS money for access replacement, the states would agree to decrease access rates to the levels to interstate levels, mirror the interstate access structure and allow companies to increase local rates such that the company could reach the FB rate level.[57] The FB rate should include the local residential rate,[58] state and federal Subscriber Line Charges (SLC) and SLC-like charges, e.g., interconnection charges or network access fees, mandatory EAS charges, and per line state universal service fund end user collections.

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[54] RTF Order, ¶¶ 24, 25, and 79 and MAG Order, ¶¶ 3, 12, 131, 132, and 134
[55] MAG Order, ¶ 131.
[56] MAG Order , ¶ 224 and Joint Board Recommended Decision, ¶¶ 30 and 39.
[57] If a company chose not to raise its local rate, the revenue equivalent to that received at the benchmark level would be imputed before calculating any supplemental universal service funding.
[58] Benchmarks would not apply to business lines.

State commissions and legislatures have used a variety of regulatory mechanisms to substantially reduce intrastate access charges substantially within their states. A FB rate is designed to provide equity for customers and companies across the nation.[59] Finally, inclusion of a FB rate minimizes the replacement revenues necessary for IC reform because companies would be required to recover a specified benchmark level of revenues from their customers before asking the federal government to provide additional funding.

SLC increases, if any, should be limited to what is required for the company to reach the rate benchmark and the overall SLC cap. Such a limitation would protect those customers with already high rates. These customers would be protected from further rate increases because once the benchmark level was reached, additional replacement dollars would be provided through universal service funding. While FB rate and SLC increases minimize the size of the RM, the record is devoid of evidence that would support a conclusion that increasing customer charges provide a RoR carrier with a reasonable opportunity to recover costs and therefore RM funding is unnecessary.

NTCA recommends that all carriers opting to receive additional supplemental universal service through Interstate Common Line Support (ICLS) or Interstate Access Support (IAS) voluntarily agree that total company regulated Title II costs, revenues, and earnings will be used when determining their future broadband high-cost USF support disbursements as a condition of

[59] Those states that have already taken action to reduce intrastate access charges substantially are termed "early adopter" states. Coincident with the lowering of access rates, states have increased local rates, implemented state Subscriber Line Charges, enacted state universal service funds, limited state earnings, or a combination of the foregoing. If the Commission simply provided revenue replacement for all carriers' intrastate access rate reductions without consideration of the previous actions of state commissions, customers and companies in "early adopter" states would be unfairly penalized and the federally funded replacement dollars would be excessive. Customers in "early adopter" states would be penalized because they have to pay higher local rates, intrastate SLC charges or state universal service contributions after companies were required to lower intrastate access rates. Without a federal benchmark provision, customers in "early adopter" states would also have to pay for the access reductions of other states, while still funding their own state's access reductions. In contrast, customers in states that have not implemented access charge reform would receive federal replacement funding without having to pay their "fair share" in terms of higher local rates, intrastate SLCs or intrastate universal service contributions.

receiving such support. Supplemental ICLS or IAS would only be provided to those carriers that voluntarily agree to have their broadband services regulated under Title II and receive supplemental ICLS or IAS to the extent necessary to recover all reasonable regulated costs. RoR carriers' earnings would be adjusted to 11.25% and price cap carriers' earnings would be adjusted in accordance with price cap rules. Consistent with the RoR regulation, the RM calculation must produce ICLS support levels that ensure a RoR carrier can earn its authorized rate-of-return on total regulated operations, notwithstanding reductions in access rates, losses in access lines, and decreases in demand minutes. This too is a critical component of making broadband available and affordable in high-cost rural areas throughout the United States.

VIII. THE FCC SHOULD UTILIZE TITLE II REGULATION PURSUANT TO SECTIONS 251 AND 256 OF THE ACT TO PROVIDE A FRAMEWORK FOR OPENNESS.

The Commission seeks comment on the value of "open networks" as an effective and efficient mechanism for ensuring broadband access for all Americans, and specifically how the term "open" should be defined.[60] NTCA supports the draft assertion suggested by Kevin Werbach that without regulation of interconnection and the exchange of traffic between broadband Internet access providers, the public Internet will likely disintegrate into private entities.[61] To ensure that this does not happen, NTCA urges the FCC to use Title II to protect against discrimination and provide a framework for openness. NTCA believes Sections 251 and 256 of the Act should be used to require carriers to interconnect and exchange data being transmitted on their broadband networks.

As was clearly envisioned by Congress in the interconnection provisions contained in

[60] NOI, ¶ 47.
[61] *Off the Hook*, by Kevin Werbach, Cornell Law review, forthcoming in 2010, electronic copy available at http://ssrn.com.abstract=1371222.

Sections 251 and 256 of the Act, providers of broadband Internet access must be able to exchange bits through open framework standards and rules. Section 251(a) requires carriers to interconnect directly or indirectly with other carriers for the exchange of traffic. Section 251(a)(2) directly connects the Section 251 interconnection obligations with the standards under Section 256. Section 256(a) specifically instructs the Commission to "ensure the ability of users and information providers to seamlessly and transparently transmit and receive information between and across telecommunications networks.[62] Section 256 provides the Commission with the authority to set standards and rules governing network management for the exchange of traffic between broadband networks. Section 256(a) charges the FCC with promoting "non-discriminatory accessibility by the broadest number of users and vendors of communications products and services to public communications networks used by telecommunications services."[63] Section 256(b)(1) further directs the FCC to establish procedures for the "effective and efficient interconnection of public telecommunications networks used to provide telecommunications services."[64] And, Section 256(b)(2) authorizes the Commission continue its practice of participating in telecommunications standards processes.[65]

Based on these provisions, the FCC should set standards and rules for the proper interconnection and exchange of traffic between broadband networks. Using the Open Systems Interconnection (OSI) layers model for determining how data messages or bits should be transmitted between two points in a telecommunications network, NTCA recommends that the Commission establish specific rules and standards for the interconnection and exchange of traffic for layers 1-5 in the OSI reference model so that it can ensure an open, interconnected, and

[62] Section 265(a).
[63] Section 256(a).
[64] Section 256(b)(1).
[65] Section 256(b)(2).

nondiscriminatory public Internet.[66]

NTCA recommends that the new interconnection standards and rules be limited for the exchange of traffic **only** and that small rural broadband providers not be required to provide wholesale unbundled network elements (UNEs) or wholesale resale of their local fiber or digital subscriber line (DSL) loops to competitors. The deployment of optical fiber assets into rural rural ILEC networks is a new generation technology. No company in a competitive environment would rationally make such an investment without an appropriate consideration of the effects of existing competitive networks. Even if a company attempted to act irrationally and do so, any lender would require such an analysis and would tailor any funding decision to take into account such consideration. Requiring that such investment, if feasible, be made available to competitors unwilling to make such an investment themselves would have the net effect of providing an economic disincentive to investment which will result in the failure of public policy favoring broadband deployment. Rural LECs accept the responsibilities of providing access to end users on a provider of last resort basis and guarantee that access will allow end users to reach whatever data destination they choose on a non-discriminatory basis (subject to quality control/network management best practices). These alone are reasons to limit Title II to the exchange of traffic.

[66] Layer 1, the physical layer, conveys the bit stream through the network by providing the hardware means for sending and receiving data by a telecommunications and/or broadband provider. Layer 2, the data-link layer, provides synchronization for the physical level, does bit-stuffing, and finishes transmission protocol management. Layer 3, the network layer, routes the packet data to the right destination Layer 4, the transport layer, performs error checking to ensure complete data transfer and manages the end-to-end control. Layer 5, the session layer, sets up, coordinates and terminates conversations, exchanges, and dialogs between the applications at each ends of the network or at the ends of two or more connecting networks.

IX. THE COMMISSION SHOULD REQUIRE ALL VERTICALLY INTEGRATED INTERNET BACKBONE AND SPECIAL ACCESS (MIDDLE-MILE) TRANSPORT PROVIDER RATES TO BE COST-BASED AND NON-DISCRIMINATORY.

The Commission seeks comment on what it should do concerning middle-mile transport cost to the IP backbone and the market power asserted by large vertically integrated middle-mile special access transport providers in specific markets.[67] NTCA urges the Commission to require large vertically integrated Internet backbone and special access (middle-mile) transport providers to price their services on cost and provide their services on a non-discriminatory basis. This approach is crucial to ensuring that rural broadband providers who depend on Internet backbone and special access (middle-mile) transport services can do so at non-discriminatory, cost-based rates, terms and conditions.[68]

Increasing broadband demand means that carriers must increase their transport capacity to the Internet backbone. When these carriers must purchase special access services at above cost rates, customers eventually will see these higher costs included in their broadband rates.[69] These costs, as well as the middle-mile transport and the Internet backbone itself are significant cost factors in providing rural broadband service. Keeping large carriers' middle-mile transport cost-based will accelerate broadband deployment and subscription, result in more affordable broadband services to consumers, and will drive economic development throughout the United States.

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[67] NOI, ¶¶ 17 and 35.

[68] Special access (middle-mile) transport service includes, among other services, packet-switched broadband services, optical transmission services (e.g., frame relay, ATM, LAN, Ethernet, video-transmission, optical network, wave-based, etc.), TDM-based services (e.g., DS-1, DS-3, etc.), and other future transport services to reach the Internet backbone.

[69] *Federal-State Joint Board on Universal Service*, WC Docket No. 05-337, CC Docket No. 96-45, Recommended Decision, FCC 07J-4 (Fed.-State Jt. Bd., rel. Nov. 20, 2007) ("Overlooking transport costs can harm remote carriers, and the problem worsens when those carriers must purchase special access facilities to connect their customers."), ¶ 21.

The National Exchange Carrier Association (NECA) performed an extensive analysis of middle-mile costs. NECA's findings were dire--concluding that high-speed Internet service is uneconomic in many rural areas. NECA further found that increased IP traffic will exacerbate, rather than ameliorate, the problem, as existing revenue shortfalls are multiplied as the scale of operations increases. For example, the study shows revenue shortfalls at $9.7 million per year at a 0.5% penetration rate, growing to $33.6 million per year at a 5% penetration rate, $49.8 million at a 10% penetration rate, and $63.8 million per year at a 15% penetration rate. NECA's sobering conclusion: "high-speed Internet service may not be sustainable in many rural areas based on pure economics."[70]

NTCA members report similar realities. The cost of purchasing Internet capacity on a per megabit basis has gone down in some instances over the last several years; however, in response to customer demand, small rural broadband providers are buying more and more capacity. Therefore, rural ILEC Internet total capacity costs are increasing while the prices for broadband Internet access have remained at fairly constant levels. One NTCA member company, which provided NTCA with cost data under the proviso that its identity not be revealed, reported that total bandwidth costs for backhaul purposes increased by 105% between 2001 and 2008. Over the same period, Internet access capacity costs increased by more than 500%. While broadband revenues per customer are flat or decreasing to meet competition, the average cost per customer is increasing because customers are consuming increasingly larger quantities of bandwidth.

[70] NECA, Middle Mile Cost Study Executive Summary, https://www.neca.org/portal/server.pt/gateway/PTARGS_0_0_307_206_0_43/https%3B/prodnet.www.neca.org/source/NECA_Publications_1154.asp.

To achieve and maintain the goal of universal affordable broadband service for all Americans, the Commission should regulate the terms, conditions and pricing of Internet backbone services, including special access (middle mile) transport needed to reach the Internet backbone, to ensure that large, vertically-integrated Internet backbone providers do not abuse their market power by imposing unfair and discriminatory pricing on small, rural communications carriers providing retail high-speed Internet access service in rural, insular and high-cost areas of the United States. The Commission has already adopted some of these conditions as part of the Commission's approval of the AT&T/BellSouth merger.[71] NTCA urges the Commission to require that special access middle-mile transport service rates are cost-based and non-discriminatory.

NTCA believes that the Commission's principles contained in its broadband policy statement adopted August 5, 2005, [72] will help to ensure that broadband networks are widely deployed, open, affordable, and accessible to all consumers.[73] NTCA further believes the Commission's net neutrality principles should also be designed to permit reasonable and non-discriminatory management of network bandwidth capacity, establish reasonable prices for special access services to the Internet backbone, and provide reasonable and non-discriminatory access to high-quality IP-based services to all consumers using the network. To this end, NTCA

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[71] *In the Matter of A&T and BellSouth Corporation Application for Transfer and Control,* Order on Reconsideration, Appendix, Page 5, WC Docket No. 06-74,(rel. March 26, 2007).

[72] *In the Matters of Appropriate Framework for Broadband Access to the Internet over Wireline Facilities,* CC Docket No. 02-33*, Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services,* CC Docket No. 01-337, *Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services: 1998 Biennial Regulatory Review – Review of Computer II and ONA Safeguards and requirements,* CC Docket Nos. 95-20, 98-10, *Inquiry Concerning High-Speed Access to the Internet Over cable and Other Facilities,* GN Docket No. 00-185, *Internet Over Cable Declaratory Ruling, Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities,* CS Docket No. 02-52, Policy Statement, FCC 05-151, Released September 23, 2005.

[73] *See* Preamble, Telecommunications Act of 1996, P.L. 104-104, 100 Stat. 56 (1996) (enacting 1996 Act "to promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies").

recommends that the FCC expand its existing network management principles pursuant to Sections 251 and 256 to include the following interconnection and nondiscrimination requirements:

1. Communications network providers should be required to provide consumers with non-discriminatory access to any lawful content or services on the public Internet through their Internet connection and allow consumers to attach any lawful equipment to their Internet connection.

2. Communications network providers should be allowed to offer quality of service priced public and private services to providers of IP-enabled services who seek to guarantee the quality of their services to the communications network provider's end-user customers.

3. Communications network providers should be allowed to take reasonable and non-discriminatory measures to protect their networks through the management of bandwidth and transmission of content and applications to their customers.

4. Communications network providers, including Internet backbone providers, should be required to provide all communications network providers with non-discriminatory access to the Internet backbone, including special access (middle-mile) transport needed to reach the Internet backbone.

5. Communications network providers, including Internet backbone providers, should be required to price their Internet backbone service, including special access (middle-mile) transport needed to reach the Internet backbone, based on their cost to provide the service.

6. Communications network providers, including Internet backbone providers, should be required to provide non-affiliated communications network providers with the same terms, conditions, and prices that the Internet backbone providers charge their affiliated companies and business customers for access to the Internet backbone, including special access (middle-mile) transport needed to reach the Internet backbone.

7. Communications network providers, including Internet backbone providers, should be required to make publicly available all of the terms, conditions and prices for their Internet backbone services, including special access (middle-mile) transport needed to reach the Internet backbone.

Considered as a package, these expanded net neutrality principles constitute a sound basis for open non-discriminatory networks that protect the interests of consumers, ISPs/broadband service providers, and IP application/content providers. Nothing in NTCA's proposed principles

condones the blocking or dropping of any lawful IP applications or broadband transmissions used by consumers or IP application/content providers.

X. THE NATIONAL BROADBAND PLAN SHOULD ELIMINATE THE IDENTICAL SUPPORT RULE AND BASE SUPPORT ON A CETC'S ACTUAL COSTS WITHIN 5 YEARS.

As part of the National Broadband Plan, the Commission should eliminate the Identical Support Rule.[74] NTCA has consistently supported the elimination of the identical support rule as appropriate public policy. NTCA recommends that the Commission allow carriers the option of submitting their cost data to the Commission for purposes of determining their future high-cost USF support. If an existing wireless CETC chooses not to file its cost data, then the wireless CETC's transitional, federal high-cost USF support for a given service area should be based on the wireless CETC's existing, federal high-cost USF support minus access cost recovery support: Interstate Common Line Support (ICLS), Local Switching Support (LSS), and Interstate Access Support (IAS). Such support should be frozen and phased-out over a 5-year period, unless during this time, the wireless carrier submits its costs and the Commission bases the CETC's future USF support on its costs. A wireless carrier seeking future CETC designations in service areas in which the requesting wireless carrier does not currently receive USF support should be required to submit its cost data in order to receive federal high-cost USF support, if its CETC designation in this area is granted.

XI. ENHANCING RURAL HEALTHCARE SHOULD BE PART OF THE NATION'S BROADBAND PLAN.

A key component of our national broadband strategy should be to enhance our rural healthcare system through better, faster, cheaper access to telehealth and telemedicine services.

[74] 7 C.F.R. § 54.307. The identical support rule allows competitive eligible telecommunications carriers (CETCs) to receive the same per-line support as rural LECs based on the rural ILEC's costs. The rule has unnecessarily increased the size of the high-cost USF mechanism by more than $1 billion.

An existing initiative that provides such access is the Rural Health Care Pilot Program, a part of the Universal Service Fund Rural Health Care mechanism. NTCA agrees with the Commission's view in the Rural Broadband Strategy Notice that "telemedicine networks made possible by broadband services save lives and improve the standard of healthcare in sparsely populated, rural areas."[75] To further that end, the Commission should expand and make permanent the Universal Service Fund's Rural Health Care Pilot Program. The timeframe for completion (i.e., review of RHCPP quarterly reports and consideration of permanence) should commence immediately since the funding for the RHCPP expires June 30, 2010. This is an existing federal rural broadband initiative that involves the FCC and the National Institute of Health, a federal agency whose services are targeted for inclusion in the broadband infrastructure development in rural America. NTCA members anticipate seeing ARRA stimulus funds being used by local and state entities and rural health care providers to meet the 15% "buy-in" requirement of the RHCPP. Telehealth and telemedicine should be a critical component to the United States rural broadband strategy.

XII. PROVIDING BROADBAND TO LOW-INCOME CONSUMERS SHOULD BE INCLUDED IN THE NATIONAL BROADBAND PLAN.

The Commission has proposed to establish a $300 million per year, three-year pilot program designed to improve broadband Internet access services to low-income Americans by using USF funds through the Lifeline and Link-up programs.[76] In general, NTCA supports the

[75] Public Notice, *Comment Date Established for Report on Rural Broadband Strategy*, GN Docket No. 09-29, DA 09-561 (rel. Mar. 10, 2009).

[76] *In the Matter of High-Cost Universal Service Support*, WC Docket No. 05-337, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, *Lifeline and Link Up*, WC Docket No. 03-109, *Universal Service Contribution Methodology*, WC Docket No. 06-122, *Numbering Resource Optimization*, CC Docket No. 99-200, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, CC Docket No. 96-98, *Developing a Unified Intercarrier Compensation Regime*, CC Docket No. 01-92; *Intercarrier Compensation for ISP-Bound Traffic*, CC Docket No. 99-68, and *IP Enabled Services*, WC Docket No. 04-36; Order on Remand and Report and Order, and Further Notice of Proposed Rulemaking (rel. November 5, 2008) (FNPRM), Appendix A, ¶¶ 64-91, and Appendix C, ¶¶ 60-87. The broadband

creation of a broadband pilot program for low-income customers and offers suggestions to improve the proposed program. The Commission suggests increasing the USF to accommodate this pilot program and then evaluating the program's effectiveness for permanent acceptance.[77]

A. Background.

The Commission relies on Section 254(b)(2) and 254(b)(3) of the Act to support the creation of this pilot program, but does not guarantee that all Lifeline and Link Up customers will be able to participate in the pilot program.[78] Participation will be permitted on a "first-come, first-served" basis designed to prioritize distribution of the limited funds.[79] This means that ETCs who sign up new Lifeline or Link Up low-income customers first for the pilot program will have priority over those ETCs who sign up their customers later.

In 2007, about $823 million of the USF went to serve low-income consumers.[80] The Commission asserts that a $300 million per year 3-year pilot program will not overly increase the amount of low-income support disbursed from the USF.[81] The broadband pilot program is exempt from fees and taxes just as under the existing Lifeline USF program.[82] The broadband Internet access services and device subsidies are to be paid by the Universal Service Administrative Company (USAC) to the ETC per USAC's usual USF procedures.[83]

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pilot program provisions are identical in both appendices and, for simplicity, citations in this section will refer just to the Appendix A provisions.

[77] FNPRM Appendix A, ¶ 76.

[78] *Id.* ¶ 72. Indeed, the Commission estimates that the pilot program "should increase the broadband subscribership for low-income customers to over fifty percent." *Id.* ¶¶ 75, 79.

[79] *Id.* ¶ 85.

[80] *Id.* ¶ 78.

[81] *Id.* ¶ 79.

[82] *Id.* ¶ 80.

[83] *Id.* ¶ 81.

NTCA and others have encouraged the Commission to include broadband as a USF supported service for low-income consumers.[84] NTCA approves the FCC's inclusion of broadband as a supported service for low-income consumers for a pilot program. NTCA also encourages the Commission to apply this same definition to all consumers and to require all broadband providers to contribute to the broadband pilot program.[85]

AT&T urges the Commission to create under Title I a special "Lifeline Service Provider" (LSP) designation, separate from ETC designation, which could be used by interconnected VoIP providers to participate in the pilot program.[86] The Commission should reject this suggestion because the Commission has not yet classified interconnected VoIP providers as telecommunications carriers or as subject to Title II regulation and thus they are not eligible to be ETCs. Consequently, interconnected VoIP providers should not be allowed to participate in the pilot program and the Commission need not create a new category of broadband service providers just for low-income consumers.

Under the pilot program, the FCC's Wireline Competition Bureau has delegated authority to disqualify an ETC or consumer from the pilot program and to seek support recovery if appropriate.[87] The FCC's Office of Inspector General (OIG) may audit every pilot program

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[84] TracFone recommended the Commission start a trial program to support broadband services and devices for low-income consumers in Florida, Virginia, Tennessee, and the District of Columbia. *TracFone Petition to Establish a Trial Broadband Lifeline/Link Up Program*, WC Docket No. 03-109, CC Docket No. 96-45 (filed Oct. 9, 2008). A second petition, filed by the Computer and Communications Industry Association (CCIA), asked the Commission to include broadband internet access services for low-income consumers in the list of supported services for universal service. *CCIA Petition for Rulemaking to Enable Low-Income Consumers to Access Broadband through the Universal Service Lifeline and Link Up Programs*, WC Docket No. 03-109 (filed Oct. 7, 2008). The Washington Independent Telecommunications Association (WITA) and the Oregon Telecommunications Association (OTA) also support the pilot program for low-income consumers. WITA and OTA Comments, p. ii.

[85] The California Public Utilities Commission (CPUC) also urged the Commission to require all broadband providers to contribute to the broadband pilot program for Lifeline and Link Up participants. *In the Matter of Report on Rural Broadband Strategy*, GN Docket No. 09-29, DA 09-561, CPUC Comments (filed Mar. 25, 2009), p. 12.

[86] *In the Matter of Report on Rural Broadband Strategy*, GN Docket No. 09-29, DA 09-561, AT&T Comments (filed Mar. 25, 2009) (AT&T Comments), p. 53.

[87] FNPRM Appendix A, ¶ 90.

participant, including ETCs and vendors, and USAC is authorized to adjust support of other USF payments for improper use of pilot program funds.[88] The FCC can also impose fines and forfeitures, and can seek criminal sanctions, for waste, fraud and abuse of the pilot program funds.[89]

B. The Proposed Low-Income Subsidies Are Substantial But May Miss Rural Consumers Unless the Pilot Includes a Rural Set-Aside and Excludes a Requirement to Provide Devices.

The Commission estimates there are 6.9 million consumers participating in the Lifeline universal service program, and consumer eligibility depends on meeting the qualifications of 47 C.F.R. § 54.409.[90] Lifeline support provides low-income consumers with discounts up to $10 monthly for telephone service, while Link-up provides low-income consumers with a discount up to $30 for installing telephone services.[91] The Pilot Program provides that if an ETC provides Lifeline service to an eligible customer, 50% of that customer's installation costs and Internet access device expenses, up to $100, will be paid through the pilot program.[92] Also, the pilot program will double, up to $10, a Lifeline household's monthly subsidy to offset the cost of broadband internet services.[93] This subsidy is limited to one subsidy per household (one adult plus dependents living together).[94]

The Link Up portion of the pilot program will subsidize up to $100 of the installation and the purchase of broadband internet access devices, *e.g.*, desktop computers, laptop computers, and handheld devices, so long as the devices can access the Internet at FCC-defined broadband

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[88] *Id.* ¶ 91.
[89] *Ibid.*
[90] FNPRM Appendix A, ¶ 75.
[91] *Id.* ¶ 65, fn. 158.
[92] *Id.* ¶ 64.
[93] *Ibid.*
[94] *Id.* ¶ 80.

speeds (at least 768 kbps download and greater than 200 kbps upload) and have a warranty.[95] The Commission implies that the $100 subsidy is appropriate because desktop computers can be purchased from Wal-Mart for $200.[96] The device support is limited to one device and new installation per household. Lifeline customers who already have a broadband connection and device are not eligible for this pilot program.[97] Consumers must return the broadband Internet access devices to the ETC if the devices are not used in compliance with the pilot program or other applicable laws.[98]

High demand for the FCC's $300 million per year for three year program is expected, so the Commission should modify its "first-come, first-served" approach by setting aside half of the funds for low-income consumers in rural areas. This set-aside will target support more efficiently to rural consumers who may not be sought as quickly and efficiently as their urban counterparts. The first-come, first-served approach will not result in a proportionate distribution to rural consumers due to marketing difficulties, and requiring ETCs to offer a wide assortment of devices will impair ETCs' ability to keep costs low.

The Proposed Order requires all participating ETCs to "make available a wide array of cost efficient broadband Internet access devices" for the program.[99] This requirement may be difficult for small rural ETCs to satisfy, which will hamper their ability to participate in the pilot program and unfairly favor large carriers who maintain product line relationships with computers and hand-held devices. Also, many ETCs are not in the business of bringing devices to, or repossessing them from, their customers.[100] Most small rural ETCs have no such connection

[95] *Id.* ¶¶ 81, 84.
[96] *Id.* ¶ 75, fn. 187.
[97] *Id.* ¶ 86.
[98] *Id.* ¶ 90.
[99] FNPRM Appendix A, ¶ 90.
[100] AT&T Comments, pp. 51-52.

and, consequently, cannot make devices available as the Commission wants. The Commission should clarify and, if necessary, remove any requirement from the pilot program that ETCs provide devices to low-income consumers.

Some commenters have opposed using pilot program subsidies for devices, contending that it makes no sense to require low-income consumers who pay part of the device expense to return said devices if they are not being used in accordance with the pilot program. Some have questioned the reasonability of a requirement that low-income consumers return the devices to the ETC if the consumers paid part of the cost of the devices and the ETC already is compensated for the device expense. The Commission, in the Proposed Order, delegates to USAC the responsibility of deciding how much of the pilot funds should be allocated to the Lifeline services portion and the Link Up devices portion, "relying instead on the certification and reporting requirements herein to enable USAC to properly administer the Pilot Program."[101] These arguments have some merit such that the Commission and USAC should seriously reflect on whether and how much of the pilot program funds should be used to reimburse devices, instead of just for broadband Internet access services. If the Commission chooses to proceed with the device subsidy, video relay service (VRS) devices should be specifically included in the list of approved device categories for the pilot program. The Commission should not, however, create a more detailed list of devices eligible for reimbursement because rural low-income consumers should not be locked into a small subset of devices used to access the Internet over their broadband connection.

[101] FNPRM Appendix A, ¶ 88.

C. Amid The ETC Requirements, The Commission Should Require ETC Participants To Disclose Advertised Broadband Speeds And Not Require Provisioning The Entire Service Territory.

As proposed, all ETCs in the existing low-income programs can participate in the broadband pilot program.[102] ETCs are required to certify their customers' eligibility under the current Lifeline income-based or program-based criteria.[103] ETCs must notify USAC and the FCC of their election to participate in the pilot program by a date to be set by the Commission.[104] The ETCs must also certify their compliance with the programs (identify the service area, costs of service and devices, and costs to customers).[105] Support will be given to ETCs on a first-come, first-served basis, which means ETCs who submit their requests to USAC first for reimbursement will receive payment over subsequent submitters. ETCs must also comply with 47 C.F.R. §54.405 regarding carrier obligations and submit a request for reimbursement to USAC within 30 days after a customer subscribes to broadband service or purchases a device.[106] ETCs must maintain self-certification procedures specified in 47 C.F.R. §§ 54.410 and 54.416.[107]

The Commission should review the ETCs' monthly reporting requirements to minimize the regulatory burden imposed on ETCs and to comply with the Regulatory Flexibility Act.[108] The ETCs' monthly reporting requirements include: 1) number of pilot program participants; 2) types and prices of devices offered; 3) type of technology used; 4) speeds at which it is providing service to each consumer; 5) number of subscribers served for the past month; and 6) projections of subscribers for next 2 months.[109] ETCs must keep records for three preceding calendar years

[102] FNPRM Appendix A, ¶ 83.
[103] *Ibid.*
[104] *Ibid.*
[105] *Ibid*.
[106] *Id.* ¶ 88.
[107] *Id.* ¶ 90.
[108] The Regulatory Flexibility Act of 1980 is codified at 5 U.S.C. § 603.
[109] FNPRM Appendix A, ¶ 88.

and for three years after participating consumers stop receiving broadband Lifeline service under this pilot program.[110]

The Commission should clarify and affirm that the reported broadband speed is the advertised speed offered to the low-income customer, not the actual speed delivered.[111] NTCA's rural ETC members have encountered difficulties in reporting actual delivered speeds due to fluctuations in usage and other issues. Actual delivered speeds are problematic to report. Consequently, for comparison purposes the Commission should require ETCs to report the advertised speed, not the actual delivered speed, offered in the serviced area.

The pilot program currently requires an ETC to offer the supported services throughout the service area.[112] This requirement poses difficulties to rural ETCs due to the expense involved in providing broadband throughout large rural service territories. Rural ETCs who must provision their entire service territories as a condition of participating in the pilot program may be forced to reject pilot program funding as a consequence. The participating ETCs should be allowed to apply the pilot program to part, not necessarily all, of their service territories. This will encourage more rural ETCs to participate in the pilot program and to use program funds most effectively to bring broadband access to their low-income consumers.

XIII. THE COMMISSION SHOULD STRIVE TO APPLY REGULATORY FLEXIBILITY ACT (RFA) AND ESTABLISH ALTERNATIVE RULES TO REDUCE THE ECONOMIC IMPACT ON SMALL BROADBAND PROVIDERS AS PART OF ITS NATIONAL BROADBAND PLAN.

The Regulatory Flexibility Act (5 U.S.C. Section 601) requires the Commission to consider alternative rules that reduce the economic impact on small entities, such as RoR rural carriers. NTCA's recommendations reduce the economic impact on small, rural broadband

[110] *Id.* ¶ 89.
[111] *Id.* ¶ 84.
[112] FNPRM Appendix A, ¶¶ 83, 87.

providers and rural consumers. NTCA's proposals will also allow the Commission to meet its statutory responsibility, promote the public interest, convenience, and necessity, spur development of new advanced communications technologies and broadband deployment, and most importantly, ensure that consumers living in rural high-cost areas are able to receive high-quality, affordable voice and broadband services.

XIV. CONCLUSION.

The Commission must apply Title II regulation to broadband services and target future high-cost broadband USF support to the highest-cost areas throughout America. The one-time $7.2 billion in grants, loans, and loan guarantees available in the American Recovery and Reinvestment Act of 2009 (ARRA) are simply not nearly enough to achieve the Nation's long-term broadband needs and goals. The single most influential factor in stimulating our economy and establishing the United States as a global leader in broadband is America's willingness to invest, build and maintain our broadband networks.

The highest priority in the Commission's National Broadband Plan must center on strengthening and preserving our universal service policies in a manner that restates the underlying program's value in an IP world. To ensure the goal of a viable and open public Internet with high-quality, affordable and comparable high-speed broadband service to all consumers, the Commission must focus on providing sufficient, sustainable, and predictable USF support for broadband services throughout the "highest-cost areas" in the United States. Specifically, the Commission should consider and adopt the following reasonable, timely, and prudent measures as part of its National Broadband Plan:

1. Define "broadband" based on high-speed Internet access capabilities during peak-hour or busy-hour load that are generally available in a significant sample of service offerings in urban areas to establish a standard of comparability and affordability in urban and rural areas. As the capability of broadband technology and IP applications develop, the definition must

evolve to meet consumer, education, business, and public health/safety demands. By linking the definition to generally available services, affordability, and comparability, the definition is enduring, technology neutral, and in the public interest.

2. Include "broadband Internet access service" in the definition of "universal service."

3. Open a proceeding to define and identify "Market Failure Areas" throughout the United States and target these areas for future high-cost broadband USF support in order to ensure consumers living in these areas have access to affordable and comparable broadband service.

4. Define a "Market Failure Area" as an area that does not have the population base or economic foundation for any provider to justify broadband facilities build-out and ongoing maintenance without external monetary support.

5. Reclassify wireline and cable "broadband Internet access service," as "telecommunications service."

6. Regulate broadband Internet access service providers under Title II common carrier regulation.

7. Apply a Title II earnings review to all broadband providers who voluntarily receive federal high-cost broadband USF support.

8. Allow rate-of-return (RoR) carriers to receive future federal high-cost broadband USF support through the Interstate Common Line Support (ICLS) mechanism, and price-cap carriers seeking to receive future broadband USF support through the Interstate Access Support (IAS) mechanism, when they voluntarily choose to have their broadband services regulated under Title II and voluntarily provide their total company regulated Title II costs, revenues, and earnings to be used when determining their future broadband high-cost USF support disbursements.

9. Include ongoing operations and maintenance expenses, in addition to construction cost, in the calculation of the future high-cost broadband USF support.

10. Transition all high-cost voice USF support to high-cost broadband USF support over a reasonable time period to avoid rate shock, prevent service disruptions, and provide stability and certainty during the transition.

11. Maintain RoR regulation for rural ILECs throughout the transition period and allow rural ILECs to base their high-cost USF support on each carrier's study area average costs to ensure affordable and uninterrupted broadband Internet access service to rural, high-cost consumers.

12. Allow RoR rural carriers to provide stand-alone/naked broadband service with the same level of universal service funding as allocated to their bundled voice and broadband service during and after the transition period.

13. Expand the base of USF contributors to include all retail broadband Internet access service providers.

14. Open a proceeding to determine whether other companies that impose significant costs on the public Internet, such as Google, should be required to contribute to the new high-cost broadband USF mechanism.

15. Assess USF contributions based on telecommunications and broadband revenues.

16. Include Internet backbone and special access (middle-mile) transport service costs in the calculation for determining future high-cost USF broadband support.

17. Eliminate the identical support rule and base high-cost USF support on each company's own costs within 5 years.

18. Refrain from capping and/or freezing rural carrier high-cost USF support because this will halt broadband deployment in high-cost areas and leave many rural consumers with substandard broadband service or without any broadband service whatsoever.

19. Require IP/PSTN traffic, specifically interconnected VoIP traffic, to pay applicable tariffed originating and terminating interstate access rates, intrastate access rates, and reciprocal compensation rates, throughout the transitional period and/or until such time as there is no longer a PSTN.

20. Implement intercarrier compensation (IC) reform as part of the National Broadband Plan by allowing state commissions to reduce voluntarily, on a company-by-company basis, intrastate originating and terminating tariffed access rates to interstate tariffed access rate levels within 5 years, and at the same time freeze interstate originating and terminating access rates in order to keep interstate access rates from increasing.

21. Establish a Restructure Mechanism (RM) as part of IC reform that allows RoR carriers to recover lost access revenues not recovered in end-user rates through supplemental ICLS and price-cap carriers to recover lost access revenues not recovered in end-user rates through supplemental IAS.

22. Establish Title II interconnection and network management rules pursuant to Sections 251 and 256 of the Act to allow for the seamless transmission of communications between public broadband Internet access networks.

23. Require vertically-integrated Internet backbone and special access (middle-mile) transport provider rates to be cost-based and non-discriminatory.

24. Expand and make permanent the Universal Service Fund's Rural Health Care Pilot Program. Telemedicine networks made possible by broadband services save lives and will improve the

standard of healthcare and life in sparsely populated, rural areas. Telehealth and telemedicine must be a critical component to the National Broadband Plan.

25. Improve the proposed broadband pilot program for low-income customers by setting aside half of the pilot program funds for rural low-income consumers and by clarifying the speed and device availability requirements. Permitting eligible carriers to use the low-income broadband pilot program to offer broadband internet access to part of their service territories, rather than the entire territory, will enhance participation in the pilot program and, consequently, give more rural consumers affordable broadband internet access.

26. Use the Regulatory Flexibility Act (RFA) (5 U.S.C. Section 601) effectively and adopt alternative rules to reduce the economic burden on small providers of broadband Internet access service, such as RoR rural carriers.

Respectfully submitted,

NTCA
NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION
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June 8, 2009

CERTIFICATE OF SERVICE

I, Adrienne L. Rolls, certify that a copy of the foregoing Initial Comments of the National Telecommunications Cooperative Association in GN Docket No. 09-51, FCC 09-31, was served on this 8th day of June 2009 by first-class, United States mail, postage prepaid, or via electronic mail to the following persons:

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Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
A National Broadband Plan For Our Future	)	GN Docket No. 09-51
	)	

REPLY COMMENTS

Respectfully submitted,

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	)	

NATIONAL TELECOMMUNICATIONS COOPERATIVE ASSOCIATION
The Voice of Rural Telecommunications
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REPLY COMMENTS

The National Telecommunications Cooperative Association (NTCA)[1] responds to the initial comments filed on June 8, 2009, regarding the Federal Communications Commission (Commission or FCC) Notice of Inquiry (NOI) on what should be included in a comprehensive broadband plan for the United States.[2] Silence on any positions raised by parties in this proceeding connotes neither agreement nor disagreement with their positions or proposals. Unless specifically stated below, NTCA reasserts its positions described in its June 8, 2009, initial comments filed in this docket.

I. INTRODUCTION AND SUMMARY.

The Commission has the opportunity to migrate affordable universal voice service into affordable universal broadband service for all Americans. The United States national broadband network, however, is only as strong as its weakest link. The weakest link in today's national

[1] NTCA is a premier industry association representing rural telecommunications providers. Established in 1954 by eight rural telephone companies, today NTCA represents 585 rural rate-of-return regulated telecommunications providers. All of NTCA's members are full service rural local exchange carriers (LECs) and many of its members provide wireless, cable, Internet, satellite and long distance services to their communities. Each member is a "rural telephone company" as defined in the Communications Act of 1934, as amended (Act). NTCA's members are dedicated to providing competitive modern telecommunications services and ensuring the economic future of their rural communities.

[2] *In the Matter of a National Broadband Plan for Our Future,* GN Docket No. 09-51, Notice of Inquiry (NOI), (rel. Apr. 8, 2009).

broadband network is the last mile connecting the consumer to the public Internet. If the last mile is non-existent or substandard and incapable of transmitting a high capacity and high quality broadband signal, the consumer is denied the opportunity to realize the full promise of the Internet. An affordable, all-inclusive national broadband network that is the envy of the world will be achieved through government policies and assistance programs that encourage and support the construction and ongoing maintenance of broadband networks operating in market failure areas.[3]

Government policies and programs including loans, loan guarantees and universal service support were instrumental in the realization of affordable and comparable telephone service for all. The United States public switched telecommunications network (PSTN) remains the envy of the world. The same should be true for the United States national broadband network. The critical factor in making this a reality is the reform of the universal service fund (USF) support mechanisms and intercarrier compensation (IC) rules in a timely and prudent manner which allows these lawful cost recovery mechanisms to migrate from the public switched telecommunications world to the IP-based broadband world to ensure affordable and comparable broadband Internet access service to all consumers. Great steps towards accomplishing this goal will be achieved if the Commission adopts the following recommendations offered in the initial comments of NTCA, consumer groups, state commissions, competitive local exchange carriers (CLECs), non-regional Bell holding company (non-RBOC) wireless carriers, state telephone associations, and others:

1. Include "broadband Internet access service" in the definition of "universal service."

[3] In the legacy telephone voice world, distribution plant consisted of copper loops connecting the consumer to the central office switch, which was the costliest part of the network because opportunities for economies of scale diminish as the network gets closer to the consumer. It was only in the last forty years of the 20th century that universal telephone voice service was offered to essentially all Americans primarily because of universal service fund (USF) support and intercarrier compensation (IC) cost recovery rules.

2. Reclassify wireline and cable “broadband Internet access service” as a “telecommunications service.”

3. Regulate broadband Internet access service under Title II common carrier regulation.

4. Target transitional and future federal high-cost USF support in “Market Failure Areas” to ensure comparable broadband services and prices in rural and urban areas throughout the United States.

5. Expand the base of USF contributors to include all providers of retail broadband service.

6. Assess USF contributions based on telecommunications and broadband revenues.

7. Eliminate the identical support rule and base USF support on each company’s own costs.

8. Refrain from capping and/or freezing high-cost USF support because this will hinder or halt broadband deployment in high-cost areas.

9. Establish Title II interconnection and network management rules pursuant to Sections 251 and 256 of the Act to allow for the seamless transmission of communications between public broadband Internet access networks.

10. Require IP/PSTN traffic, specifically interconnected VoIP traffic, to pay applicable tariffed originating and terminating interstate access rates, intrastate access rates, and reciprocal compensation rates as part of USF and IC reform within the National Broadband Plan.

11. Require special access (middle-mile) transport service rates to be reasonable and non-discriminatory.

12. Include special access (middle-mile) transport service and stand-alone broadband Internet access service costs in the calculation for determining future high-cost USF broadband support.

13. Make the rural health care USF broadband pilot program a permanent part of the National Broadband Plan.

14. Improve broadband Internet access services to low-income Americans by using USF funds through the Lifeline and Link-up USF programs.

15. Establish reasonable and non-discriminatory pole attachment rates and ILEC dispute mechanisms for broadband pole attachments to encourage and accelerate broadband deployment, including smart grid applications.

The United States continues to fall behind the rest of the world in broadband deployment, penetration, affordability, and quality primarily because of decisions the Commission made over the past 10 years removing cable and wireline high-speed Internet access service from Title II common carrier regulation and classifying these services as a Title I deregulated "information service." The Commission must now recognize and reverse those deregulatory decisions that have prevented the United States from reaching its goal of ubiquitous and affordable high-speed Internet access service for all Americans.

II. COMMENTERS AGREE THAT UNIVERSAL SERVICE FUNDS SHOULD SUPPORT BROADBAND INTERNET ACCESS SERVICE.

Broadband internet access services have become so integrated and important to American society that now is the time for the Commission to add broadband to the list of USF supported services. Broadband itself should have an evolving, not static, definition to better reflect changes in our society. Also deserving USF support are middle-mile special access transport and stand-alone broadband Internet access service costs.

A. Broadband Should Be Added to the List of USF Supported Services.

Disagreement remains about how the universal service fund should evolve to fund broadband, but there is nearly unanimous support for the proposition that universal service funds should be available for broadband.[4] Verizon states it "is past time to update the USF to enhance the reach and capabilities of broadband."[5] OPASTCO asserts the "time has come for broadband to be added to the list of services eligible to receive support directly from the High-Cost

[4] *See, e.g.*, Western Telecommunications Alliance (WTA) Comments, p. iii, Consumer Federation of America and Consumers Union (CFA/CU) Comments, p. 1, Rural Cellular Association (RCA) Comments, p. 22, NASUCA Comments, p. 46, Qwest Comments, pp. 14, 16, CTIA – The Wireless Association (CTIA) Comments, p. 39, TDS Telecommunications Corporation (TDS) Comments, p. 15, Texas Statewide Telephone Cooperative, Inc. (Texas) Comments, p. 9, Independent Telephone and Telecommunications Alliance (ITTA) Comments, p. 6, and Telecommunications Industry Association (TIA) Comments, p. 9.
[5] Verizon Comments, p. 112.

program."[6] NTCA agrees with these commenters and with Public Knowledge in that "we can preserve existing subsidized service by providing [voice services] over an IP platform while expanding the concept of universal broadband to include meaningful access for all Americans. The time has come to recognize that broadband, not voice, has become the 'must have' utility for the 21st Century. A National Broadband Plan should have as its centerpiece a plan to reform USF to address the continuing funding needs pertaining to both [broadband] build out/upgrades."[7]

While there is near-universal support for using universal service funding to support broadband, some argue that such funding should be allowed without a finding that broadband is a supported service.[8] However, there is no rational, policy or legal arguments to support that position. The United States Telecom Association (USTelecom) asserts that adding broadband to the list of supported services "would be counterproductive,"[9] but offers no explanation of how or why it would be "counterproductive."[10] Instead, USTelecom argues that because mobility appears nowhere in the list of supported services and therefore, neither should broadband. The comparison lacks merit. All of the supported services are technologically neutral. They are services that can and do ride across multiple wireless and landline platforms. In contrast, mobility merely means that services are transmitted and received wirelessly. Mobile wireless providers must offer all of the supported services in the current definition of universal service to be eligible to receive funding.[11] Broadband is a service that can be and is offered across

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[6] OPASTCO Comments, p. 19.
[7] Public Knowledge Comments, pp. 17-18.
[8] *See, e.g.,* United States Telecom Association (US Telecom) Comments, p. 17.
[9] *Ibid*.
[10] Presumably, US Telecom opposes including broadband in the list of supported services because universal service support may support "telecommunications services," but not allegedly "information services." Such attempt to get the benefits of USF support, but not the corresponding obligations, of a telecommunications service classification for broadband should be disregarded.
[11] The current supported universal services are: 1) the ability to place and receive telephone calls; 2) touch tone

multiple platforms, like the other services that are supported by universal service, and unlike "mobility."

Moreover, broadband Internet access service meets the following statutory criteria in section 254(c)(1) of the 1996 Act defining what the Commission must consider when adding a service to the list of USF supported services. Broadband Internet access service has become essential to education, public health, and public safety. Broadband Internet access service is subscribed to by a substantial majority of residential consumers. Broadband Internet access service is deployed in public telecommunications carrier networks. And, widespread availability of broadband Internet access service is consistent with the public interest, convenience, and necessity. Indeed, in 2007, based on the above-criteria, the Federal-State Joint Board on Universal Service specifically recommended that broadband Internet access service be added to the definition of supported services.[12] The time has arrived to add broadband Internet access service to the list of USF supported services.

High-cost USF support is necessary for ubiquitous broadband deployment, particularly in rural areas. Rural LECs have done an outstanding job of upgrading networks and deploying technology to meet the broadband needs of the communities they serve, but ongoing, predictable and sufficient support from USF mechanisms is necessary for rural LECS to completely transition from the PSTN to the National Broadband Network.[13] There remain portions of some rural service areas that are prohibitively expensive to serve. As RICA correctly recognizes, "[w]ithout some sort level of support, affordable broadband access is not feasible in many high

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dialing; 3) single party service; 4) access to emergency services; 5) access to operator services; 6) the ability to place long distance calls; 7) the ability to turn off long distance calling; and 8) directory assistance.

[12] *High-Cost Universal Service Support*, WC Docket No. 05-337, *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Recommended Decision, 22 FCC Rcd 20477, 20490-20492, ¶ 55-62 (2007).

[13] *See* TDS Comments, p. 15, OPASTCO Comments, p. 19, Rural Independent Competitive Alliance (RICA) Comments, pp. 7, 11.

cost areas."[14] As the country moves to a national broadband network, the USF mechanisms for rural LECS must be modified accordingly. Adding broadband to the list of services supported by USF would provide carriers with the cost recovery mechanisms needed to help achieve ubiquitous broadband deployment at affordable rates.

B. Broadband High Cost USF Support is Necessary for Broadband Network Upgrades and Should Have an Evolving Definition.

Ubiquitous broadband deployment is an admirable goal, but true rural-urban parity requires broadband support, not only for deployment, but also for the ongoing operations and network maintenance of the network. The definition of broadband is evolving and the network must be able to accommodate the increasing demand for services and applications requiring greater bandwidth. Funding only the construction of the network will not permit the network to expand and adjust to future changes in technology and consumer demand. The Wireless Internet Service Providers Association points out that the broadband stimulus program has a short life and long- term support to high cost areas is necessary to help ensure that broadband projects are sustained.[15] USF support will be needed on an ongoing basis to ensure that networks are appropriately maintained, upgraded and remain available to consumers in rural high-cost areas at rates that are affordable and reasonably comparable to those charged in urban areas. [16]

TDS Telecommunications Corporation states, "what constitutes a satisfactory 'broadband' experience today may seem painfully slow – and be of potential limited utility if not entirely useless – in the future."[17] NTCA agrees. Any national broadband plan developed by the FCC and endorsed by Congress must also be able to adjust to the future needs of

[14] RICA Comments, p. 11, Texas Comments, p. 9.
[15] WISPA Comments, p. 16, NECA Comments, p. 11.
[16] Texas Comments, pp 9-10.
[17] TDS Comments, p. 6.

communities. This will require USF support for the ongoing operations and maintenance of broadband networks serving high-cost market failure areas throughout the United States.

C. Middle-Mile Special Access Transport is Crucial for Rural Broadband Deployment, so These Costs Should Receive USF Support and Price Cap Carrier Data Should Be Gathered.

Middle-mile facilities are necessary to transport Internet traffic to and from rural areas. In vast rural expanses of the country, the largest incumbent price-cap carriers are the only providers of high-capacity circuits that many rural ILECs must utilize to provide broadband Internet access to their retail customers. NTCA agrees with NECA's observation that the Commission must "develop ways to address both 'middle mile' and access-to-content issues for rural broadband providers, as these issues pose obstacles to sustainability."[18] NTCA also agrees with the National Rural Telecommunications Cooperative (NRTC)'s assessment that, "Middle-mile facilities can range from a few miles to a few hundred miles, especially in rural areas. … The lack of middle-mile infrastructure is one of the greatest obstacles to building sustainable rural broadband networks."

Many commenters join NTCA in asserting that transport cost recovery for middle-mile special access is crucial for broadband deployment, especially for rural areas.[19] Several commenters agree with NTCA that USF support is appropriate for the middle-mile.[20]

NTCA renews its recommendation that the Commission should include Internet backbone and middle-mile special access transport costs as part of a future high-cost broadband USF support determination. Internet backbone and middle-mile transport services should be

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[18] NECA Comments, p. 2.
[19] *See, e.g.*, NTCA Comments, p. 22, American Cable Association (ACA) Comments, pp. 2, 7, Arizona Consumers Council Comments, p. 7, General Communication, Inc. (GCI) Comments, pp. 2, 7, Level 3 Communications, LLC (Level 3) Comments, pp. 1-2, National Rural Telecommunications Cooperative/DigitalBridge Communications Corp. (NRTC/DBC) Joint Comments, p. 19, Sprint Nextel Comments, pp. 11, 12, 18, Texas Comments, pp. 3, 16, T-Mobile Comments, p. 11.
[20] NTCA Comments, p. 22, Verizon Comments, p. 8, OPASTCO Comments, p. 22.

nondiscriminatory and cost-based, and others agree.[21] Allowing the recovery of Internet backbone and middle-mile transport costs as part of the future broadband USF mechanism will help ensure that high-cost rural consumers receive comparable and affordable broadband services. Middle-mile special access costs are and will be substantial in very high-cost, sparsely populated areas and should be included the future high-cost broadband USF support calculation.

NTCA member companies report there is minimal, if any, choice of special access carriers in many rural areas throughout the United States, and that there has been no downward pressure on prices for many years. Members report that discounts off price lists are not available and that there exists no flexibility in terms and conditions. Coupled with the fact that the large price-cap carriers' services agreements are subject to non-disclosure terms, these conditions place rural carriers in a "take-it-or-leave-it" situation in securing these special access services that they require in order to offer broadband Internet services.

Data regarding middle-mile facilities and special access issues are also essential to a national broadband plan since NTCA and its member companies believe that the essentially unregulated special access market in rural America lacks competition. Thus, purchasers of special access lack the ability to protect their retail broadband customers from the effects of the resulting pricing and other terms and conditions.

NTCA has offered suggestions on data requests to price cap carriers in the Commission's open docket regarding special access to better protect NTCA members and their customers.[22] NTCA's proposed data requests pertain to the largest price-cap carriers, AT&T, Verizon and Qwest, who possess end-to-end market power in many areas throughout the United States. Such data from these carriers will be helpful in distinguishing behavior of these carriers between urban

[21] Texas Comments, p. 3.
[22] *In the Matter of Special Access Rates for Price Cap Local Exchange Carriers*, WC 05-25, NTCA ex parte filing (filed June 24, 2009).

and rural areas, and would assist the Commission in determining the status of special access competition in the nation's most rural geographic areas.

D. Rural Carriers Need USF Support for Stand-Alone or Naked Broadband Internet Access Service.

One way to encourage the transition to broadband is to provide economic incentives for last mile providers to implement cost effective broadband solutions and to offer consumers services that they value. Current rules and practices involving 'stand-alone' or 'naked DSL' present special challenges to incumbent local exchange carriers (ILECs). Most ILECs initially offered broadband by installing digital subscriber line (DSL) on existing copper loop plant. This offered consumers Internet access at speeds much faster than dial-up at a modest cost because DSL was tariffed as an additional service to voice telephone service. As long as the consumer had voice service with the ILEC the cost of the loop was embedded in voice rates and the only additional cost was to add DSL to the existing voice loop. However, since the market for broadband access to the Internet has matured, many consumers now want a broadband connection but do not want underlying voice telephone service. In this situation, the National Exchange Carrier Association (NECA) tariff for DSL includes the cost of the loop because DSL is the only service being offered on that particular loop. Thus 'naked DSL' is much more expensive than DSL combined with voice.

In high cost areas the situation is even worse because there is universal service high cost loop support for voice, while broadband is not a supported service. In this case the consumer would be asked to pay for the entire cost of the loop without any offsetting universal service support. The Commission should allow rate-of-return rural carriers to provide 'naked DSL' service with the same level of loop support that is provided to bundled voice and DSL service during and after the transition to broadband. Such a policy is pro-consumer and permits

providers to offer affordable DSL to consumers that no longer choose to have traditional voice telephone service.

III. A MODIFIED UNIVERSAL SERVICE FUND REGIME SHOULD BECOME PART OF THE NATIONAL BROADBAND PLAN.

A truly effective national broadband plan will require several changes to the USF structure. For example, the Commission should require all broadband internet access providers to contribute to the USF. The FCC should base its USF contribution methodology on revenues, not numbers, for future USF support. High-cost support should be based on the carrier's actual costs, not the incumbent's costs, per the current Identical Support Rule. The USF high-cost fund should not be capped. Furthermore, the USF broadband pilot program for Lifeline and Link-up can be an effective means to increase broadband Internet access penetration among low-income consumers.

A. All Broadband Internet Access Providers Should Contribute to the USF.

Many parties agree that all broadband Internet access providers should contribute to future broadband USF support mechanisms.[23] NASUCA correctly identifies that if the USF is to support broadband, the Commission must assess universal service support costs on broadband services."[24] Expanding current USF programs to include broadband without assessing broadband services to contribute to the USF will not provide sufficient, predictable and sustainable levels of broadband USF to achieve the goal of ubiquitous and affordable Internet access service to all Americans.[25] Declaring broadband Internet access service a Title II telecommunications service will enable it to receive universal service support and allow the

[23] *See, e.g.*, NTCA Comments, p. 19, OPASTCO Comments, p. 31, CFA/CU Comments, p. 2, and NASUCA Comments, pp. 47-48
[24] *Ibid*.
[25] *Ibid.*

Commission to achieve its national broadband goal.[26]

Free Press makes the argument that broadband providers should not be required to contribute to the universal service fund, as doing so would discourage consumers from subscribing to broadband services: "[B]roadband service is currently what economists call an 'elastic' service, meaning that a 1 percent increase in price will result in a greater than 1 percent decrease in subscribership. (Contrast this with telephony, which is an 'inelastic' service.)"[27] Earlier in their comments, however, Free Press says: "We recognize that the utility consumers derive from broadband services is far greater than that from telephone, and that given the choice between slightly higher telephony rates or new broadband service in unserved areas, most consumers would choose the latter."[28]

It is difficult to reconcile these two, seemingly contradictory positions. Are we to believe that customers are unwilling to pay slightly more for a service which provides them with "far greater" utility? Or, more surprisingly, should we believe that consumers are willing to pay more for a service that delivers less utility?

The Pew Internet & American Life Project's recent broadband survey sheds some light on consumer preferences.[29] In their report, Pew finds that "[b]roadband adoption appears to have been largely immune to the effects of the current economic recession"[30] and that "it appears that few people were willing to cutback on broadband and were more likely to economize on communications services other than the internet."[31] Further, according to Pew, 11% of survey respondents cancelled their landline service in the past 12 months to save money, while 9%

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[26] CFA/CU Comments, p. 17.
[27] Free Press Comments, p. 237.
[28] *Id*. at 224.
[29] "Home Broadband Adoption 2009," Pew Internet & American Life Project, Washington, D.C., June 2009 ("Pew Survey").
[30] Pew Survey, p. 4.
[31] *Id.* at 19.

cancelled or cut back on internet service.[32] Clearly, broadband is a highly valued service among American consumers, one which many are unwilling to give up. It seems unlikely that the relatively small increase in end user rates that may result from the assessment on providers will dampen demand for broadband services.

NTCA strongly believes that all providers of broadband services—as well as all voice substitute services and all special access service providers--should be required to contribute to the universal service fund. Broadening the contribution base will minimize funding requirements, while also paving the way for fairer and quicker development of broadband in hardest-to-reach areas. Requiring all broadband service providers and all voice substitute providers to contribute will provide sufficient universal service collections and create long-term stability in the USF contribution methodology.

In addition, the Commission should give serious consideration to assessing any business that depends on consumers having broadband access to the Internet as part of their business. These businesses offer some type of advanced "value added" services that are made possible by Internet broadband access. It is the best interest of these businesses to maximize the number of consumers that can use their advanced services. It is in the consumer's best interest to be able to fully and freely access all of the richness and diversity that is offered by applications and services available through a broadband connection. These companies pay to access the Internet, but do not presently pay anything for costs incurred by the volume of traffic generated by their applications in parts of the broadband network beyond there own access. Such costs could include network embellishments made by broadband Internet access providers to carry traffic generated by new application. Increased demand would require Internet access providers to add capacity where they have shared network facilities. This would include 'Middle Mile" facilities,

[32] *Id.* at 20.

enhanced Internet backbone access, and local routers.

As mentioned in NTCA's initial comments, Google's search engine imposes enormous bandwidth demands on the public Internet.[33] This bandwidth utilization involves generation of substantial data transferred over the public Internet, including over middle-mile and last-mile facilities. Google's bandwidth usage rate is rapidly increasing, which should prompt consumers, broadband Internet service providers, and the Commission to reflect on the cost per gigabyte, or cost per terabyte, of data. Careful consideration by the Commission of the definitions of bandwidth, bandwidth utilization, data transfer rate, contention (oversubscription) and throughput will aid in clarifying the broadband landscape.

It is reasonable to assume that a major new service introduced by a national information service provider would increase the operating costs of a broadband Internet access provider without generating any additional local revenue. The Commission should therefore open a proceeding to determine whether companies that impose significant costs on the public Internet should be required to contribute to a high-cost broadband universal service fund.

In its comments Google, an application and information service provider, specified three dimensions of broadband Internet access it deemed to be necessary:

> The Commission should assess three different dimensions of broadband as a network platform for providing consumers with optimal access to the Internet: (1) the availability of broadband infrastructure on a ubiquitous basis; (2) the robustness of broadband capacity sufficient to support Internet access; and (3) the openness of Internet access itself. All three dimensions are necessary in order for broadband infrastructure to serve as an optimal Internet platform.[34]

If broadband Internet access is this important to Google and other companies competing with Google, these companies should help to defray the additional cost to establish, maintain and upgrade such capability in high cost areas.

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[33] NTCA Comments, pp. 20-21.
[34] Google Comments, p. 4.

B. Broadband Revenues, Not Numbers, Should Be Assessed for Future USF Support.

Verizon and AT&T urge the Commission to adopt a new telephone numbers USF contribution methodology to assess future broadband universal service contributions.[35] Verizon argues that the Commission should base future broadband USF support on telephone numbers because they are supposedly easy to understand and equitable.[36] The problem with Verizon's argument is that telephone numbers have nothing to do with broadband Internet access service, which will be the basis for all communications in the future. Verizon and AT&T will very likely use a number-based contribution methodology to avoid future USF contributions when they move all their broadband customers from North American Numbering Plan (NANP) telephone numbers to IP-based voice protocols and soft numbers in the future. Adopting a legacy telephone numbers-based USF contribution methodology will position the Commission for failure in achieving ubiquitous and affordable broadband for all Americans in the new IP-based broadband world. The Commission must not let this happen.

Legacy telephone numbers have nothing to do with IP-based applications or broadband Internet access service. Verizon by its own admission writes:

> By their very nature, IP-enabled services ignore state boundaries, and the efficient routing of IP traffic depends on the free flow of packets irrespective of the kind of point-to-point routing characteristic of circuit-switched networks. The web servers and softswitches that allow for the provision of IP-enabled services will, in many cases, be located outside the particular state in which a user of those services is located. When end users employ IP-enabled services to communicate with each other, the packets travel with complete disregard for state and national boundaries. … It is precisely these features, which resist traditional legacy telephone regulatory classification and which are characteristics of IP-enabled

[35] AT&T recently filed a petition seeking implementation of a numbers-based contribution mechanism. *In the Matter of Universal Service Contribution Methodology*, WC Docket No. 06-122, AT&T Petition for Immediate Commission Action to Reform its Universal Service Contribution Methodology (filed July 10, 2009). Although the Commission has not sought comment on this petition, NTCA urges the Commission to reject the AT&T petition for the reasons stated herein.

[36] Verizon and Verizon Wireless (Verizon) Comments, p. 113.

> services, including both facilities-based and over-the-top VoIP service, that make possible vast new opportunities for consumers and businesses in urban and rural areas alike across the country.[37]

Numbers are associated with telephone service not broadband service, which will support all voice, data, video, and security needs of the 21st century. Verizon's own comments make no case for adopting a number-based USF contribution methodology.

In *Brand X*, the United States Supreme Court stated "the Commission concluded a consumer cannot purchase Internet service without also purchasing a connection to the Internet and the transmission always occurs in connection with information processing."[38] In the 2005 *Wireline Broadband Classification Order*, [39] the Commission determined that "wireline broadband Internet access service, like cable modem service, is a functionally integrated, finished service that inextricably intertwines information-processing capabilities with data transmission such that the consumer always uses them as a unitary service."[40] The Commission further held that "consistent with *Brand X*, such a transmission component is mere

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[37] *Id.* at 120.

[38] *National Cable & Telecommunications Association v. Brand X*, 545 U.S. 967 (2005). A copy of the Brand X Slip Opinion can be found at http://www.fcc.gov/ogc/documents/opinions/2005/04-277-062705.pdf.

[39] *In the Matter of Appropriate frameworks for Broadband Access to the Internet over Wireline Facilities*, CC Docket 02-33, *Universal Service Obligations of Broadband Providers*, CC Docket No. 01-337, *Review of regulatory Requirements for Incumbent LEC Broadband Telecommunications Services, Computer III Further Remand Proceeding: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review – Review of Computer III and ONA Safeguards and Requirements;* CC Docket Nos. 95-20, 98-10; *Conditional Petition of the Verizon Telephone Companies for Forbearance Under Section 47 U.S.C. § 160(c) with Regard to Broadband Services Provided Via Fiber to the Premises; Petition of the Verizon Telephone Companies for Declaratory Ruling or, Alternatively, for Interim Waiver with Regard to Broadband Services Provided Via Fiber to the Premises*, WC Docket No. 04-242, Consumer Protection in the Broadband Era, WC Docket No. 05-271, FCC 05-150, ¶ 9 (rel. Sept. 23, 2005). (*Wireline Broadband Classification Order*).

[40] *Id.* ¶ 12. The Commission limited this order to wireline broadband Internet access service and its underlying broadband transmission component whether the component is provided over copper loops, hybrid copper-fiber loops, fiber to the curb or fiber to the premise (FTTP) network, or any other type of wireline facilities, and whether that component is provided using circuit switched, packet-based, or any other technology. ¶¶ 112-113. After a transition period established by the order, ILECs that choose to offer broadband Internet access on a common carrier basis will continue to be liable for USF contributions based on the revenues from those offerings. ILECs that choose to offer broadband Internet access on a private carriage basis after the transition, their revenues from the offering would not be subject to USF contribution assessments. ¶ 9, footnote 15.

telecommunications."[41]

The underlying transmission component of all broadband Internet access services is "telecommunications" as defined by the Act.[42] Section 254(d) specifically provides the Commission with authority to require any other provider of interstate "telecommunications to contribute to universal service." The future public communications network will require universal service funding to provide affordable and comparable voice and broadband services to all Americans, urban and rural, high-cost and low-income. It will also require a USF contribution methodology that is able to evolve with the future public communications network that will rely on IP-based transmission services. If USF contributions are limited to traditional wireline and wireless voice services, the inevitable migration away from these services will eliminate all future universal service funding. NTCA therefore urges the Commission to require all cable, wireless, VoIP, electric and satellite broadband Internet access providers to contribute to the federal universal service fund based on their revenues.

The goals of universal service cannot be met without the broad support for the underlying networks that carry their VoIP as well as circuit switched traffic. Failing to position non-wireline broadband Internet access providers, VoIP providers, and wireless providers on equal footing with existing wireline USF contributors will continue to place existing wireline contributors at a distinct competitive disadvantage and further drain revenues from the existing USF contribution revenue assessment base. Without competitive neutrality, the disparate regulatory treatment of non-wireline broadband providers, VoIP providers and wireless providers will continue to invite arbitrage and create false economic incentives that will undermine the

[41] *Id.* ¶104.
[42] Telecommunications is defined as the transmission, between or among points specified by the user, of information of the user's choosing, without change in form or content of the information as sent and received. 47 U.S.C. § 153(43). Information service is defined as the offering of a capability for generating acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications. 47 U.S.C. § 153(20).

Public Communications Network (PCN) (consisting of the existing and future PSTN and the existing and future Internet).

NTCA urges the Commission to retain the current revenues-based contribution methodology for USF assessments and apply it to broadband Internet access service revenues. The revenues-based USF contribution methodology has proven to be the most equitable, non-discriminatory, and administratively feasible mechanism for providing specific and predictable universal service support in accordance with the Act.

C. High-Cost USF Support Should Be Based on Each Company's Own Costs, Not on the Incumbent's Cost.

High-cost USF support should not be calculated using the identical support rule, which allows a certified eligible telecommunications carrier (CETC) to receive the same per-line support as a rural ILEC based on the rural ILEC's costs, because this approach will not accurately capture the actual costs incurred by high-cost recipients in bringing broadband to their customers and because the rule unnecessarily inflates the high-cost USF mechanism.[43] Consequently, the Commission should eliminate the Identical Support Rule and allow carriers the option of submitting their cost data to the Commission for purposes of determining their future high-cost USF support. NTCA also renews its call for a five-year phase-out period to transition CETCs.[44]

NTCA's approach has support. The Rural Independent Competitive Alliance (RICA) agrees that any support plan adopted should look to actual costs of service.[45] Verizon contends that the identical support rule results in "excessive support to multiple carriers in the same study

[43] 7 C.F.R. § 54.307.
[44] NTCA Comments, p. 40.
[45] RICA Comments, p. iv.

area" while not encouraging wireless providers to expand their territory and offerings.[46] OPASTCO agrees that embedded cost should be used for rural ILECs.[47] The Vermont Public Service Board advocates for eliminating the identical support rule, as does the Texas Cooperative Association.[48] The Commission should conclude that high-cost USF support, and the services selected for support, should be based on a recipient's own costs.

D. The High-Cost USF Mechanism Should Not Be Capped.

The Commission should reject calls to cap or freeze the rural carrier high-cost USF support as this will halt broadband deployment in high-cost areas and leave many rural consumers with substandard broadband service or without any broadband service whatsoever. Verizon overreaches when it claims that an uncapped high-cost USF will imperil both the affordability and sustainability of all universal service programs.[49] Rural ILECs have demonstrated repeatedly that, given adequate USF support, rural carriers will provide high-quality broadband services to their rural communities.

In their initial comments, Free Press proposes siphoning universal service support away from the "substantial amount of lines that are supported by the Universal Service Fund [that] receive relatively small amounts of per line support."[50] Free Press believes that it would be possible to reclaim $3.0 billion of the $4.6 billion high cost fund by these means, leaving $1.6 billion "to provide ongoing support in the 'very high-cost' areas that would still require monthly subsidies."[51]

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[46] Verizon Comments, p. 115.
[47] OPASTCO Comments, p. 31.
[48] Vermont PSB Comments, p. 12, Texas Comments, pp. 3, 12.
[49] Verizon Comments, p. 112. *See also* Vermont PSB Comments, p. 15 (proposing a $4.5 billion cap on high-cost funding).
[50] Free Press Comments, p. 218.
[51] *Id.* at 229.

Free Press rationalizes this redistribution, saying that "it is possible that some USF-supported carriers are receiving small amounts of per-line support without any reduction in consumer prices."[52] Free Press further opines that "it is also possible that incumbent carriers are receiving USF support that enables them to hold their retail rates below cost in the face of competition from other unregulated technologies that offer a higher level of service."[53]

Elimination of this support would have dramatic and immediate consequences for NTCA member companies. At best, retail rates would increase, putting service out of reach of many of their customers. Also, service quality would drop as carriers would no longer be able to fund necessary network upgrades and maintenance. At worst, the companies would no longer be able to offer service at all, stranding even those customers who had the means to continue subscribing. Free Press misidentifies the root cause of the problems with the Universal Service Fund: "The Commission and the Federal-State Joint Board that oversees the Universal Service Fund (USF) have largely become captives of the rural companies that thrive off its subsidies."[54]

In reality, rural companies do not hold the FCC or the Joint Board "captive," nor have they "thrived" as a result of the universal service program, but rather have effectively used their support to successfully bring affordable, high-quality services to rural America, as recognized by the Joint Board ("Under existing support mechanisms, RLECs have done a commendable job of providing voice and broadband services to their subscribers").[55] The problem with the unsustainable growth in the fund has been primarily caused by the awarding of duplicative support, based on the incumbent's costs, to CETCs. Stripping incumbent carriers of their universal support funding will not solve any problems—to the contrary, it would create major

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[52] *Id.* at 219.
[53] *Ibid.*
[54] *Id.* at 187.
[55] *In the Matter of High-Cost Universal Service, Federal-State Joint Board on Universal Service*, WC Docket 05-337, CC Docket 96-45 (rel. Jan. 29, 2008), p. 19.

hardships for the customers they have served so well.

Freezing or capping high-cost USF would prevent rate-of-return carriers from earning their authorized rate of return, or would shift excessive costs to rural consumers in violation of the comparable rate requirement of Section 254 of the Act. NTCA agrees with OPASTCO that the cap on the High-Cost Loop Support program for rural ILECs should be lifted to support broadband networks and services in rural areas.[56] Lifting this cap would ease the difficulty that rural carriers face in maintaining and upgrading their networks.

Competitive bid procedures, such as those proposed by Qwest and AT&T for unserved areas, and reverse auctions, such as proposed by Microsoft, will not result in deploying advanced services and high quality of service for rural customers.[57] Reducing the high-cost fund or removing support to a separate broadband fund, as the New York State Public Service Commission and Vermont Public Services Board suggest, will reduce the financial source necessary to keep rates comparable in rural areas and assure rural lenders that the rural carriers will be able to repay their loans.[58] Caps and freezes on high-cost USF support are fundamentally inconsistent with the Commission's broadband build-out goals. The Commission should not include a high-cost USF cap as part of its national broadband plan.

E. Broadband Can Become More Available to Lifeline and LinkUp Consumers Using the Proposed USF Pilot Program.

Commenters have joined NTCA in urging the Commission to bring broadband to low-income consumers through the existing Lifeline and LinkUp USF funding mechanism implemented as a pilot program.[59] While the Commission's draft proposal can be improved, as

[56] OPASTCO Comments, pp. 22-24.
[57] Qwest Comments, p. 12, AT&T Comments, p. 87, Microsoft Comments, p. 7.
[58] NYSPSC Comments, p. 9, Vermont PSB Comments, p. 11.
[59] NTCA Comments, p. 43, NRECA Comments, p. 9, NRTC/DBC Comments, p. 15, AT&T Comments, p. 29, Qwest Comments, p. 14, New Jersey Division of Rate Counsel (NJDRC) Comments, pp. 14, 23, NASUCA Comments, pp. 47, 65.

NTCA and others have suggested, the fundamental approach is sound policy and should be implemented.

Many commenters, rural and non-rural, agreed that targeted support for broadband services for low-income consumers is a valid national broadband goal. The National Rural Electric Cooperative Association agreed with NTCA that the USF low-income program should include broadband.[60] The National Rural Telecommunications Cooperative supports a broadband lifeline program.[61] AT&T asserts that "the Lifeline and Link-Up programs have helped millions of people obtain and maintain basic telephone service" and contends correctly that the national broadband plan should include broadband access services.[62] Qwest and ITTA agree that a broadband pilot program for low-income consumers is appropriate.[63] The New Jersey Division of Rate Counsel calls for an expansion of Lifeline Linkup to include broadband access.[64] NASUCA also encourages the Commission to examine the concept of affordability, as well as subsidized installation and monthly subscription costs, through a broadband Lifeline pilot program.[65]

NTCA's suggested improvements to the proposed $300 million per year, three-year program are repeated by other commenters. For example, Qwest agrees with NTCA that permitting eligible carriers to use the low-income broadband pilot program to offer broadband internet access to part of their service territories, rather than the entire territory, will enhance participation in the pilot program.[66] The Commission should include a broadband pilot program, which includes NTCA's suggested revisions, as part of the national broadband plan.

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[60] NRECA Comments, p. 9.
[61] NRTC/DBC Comments, p. 15.
[62] AT&T Comments, pp. 48-49.
[63] Qwest Comments, p. 17, ITTA Comments, p. 26.
[64] NJDRC Comments, pp. 23-24.
[65] NASUCA Comments, pp. 65-66.
[66] Qwest Comments, p. 15.

IV. THE COMMISSION SHOULD OPEN A PROCEEDING TO DEFINE AND IDENTIFY "MARKET FAILURE AREAS" THROUGHOUT THE UNITED STATES, AND ESTABLISH COST DATA TO IDENTIFY AND TARGET SUPPORT TO SUCH AREAS.

In its Initial Comments, NTCA recommended that the Commission open a proceeding to define and identify "market failure areas" throughout the United States and target these areas for future high-cost broadband USF support in order to provide consumers living in these areas with affordable broadband service.[67] NTCA further urges the Commission "to gather input, as soon as possible, from all interested and affected parties on how to establish exactly which areas are too costly and thus would qualify as broadband 'market failure areas,' as opposed to markets that do not require future high-cost broadband USF support."[68] Doing so will require the Commission to "undertake the critical step of determining broadband network and operating costs that lead to determination of 'market failure areas.'"[69]

Many parties agree with NTCA about the existence of market failure areas (MFAs). As NASUCA notes, "[N]ot all consumers who would like to purchase state-of-the-art broadband connections – whether fiber-optic cable, advanced DSL, or advanced cable-television broadband technologies – have the ability to purchase such connections, in part because the lack of competition limits access to advanced broadband technologies at any price. This is a clear sign of market failure."[70] Consumer Federation of America and Consumers Union writes that the "failure to achieve universal service is, at root, a market failure. Large segments of the population cannot afford or do not have available broadband services that meet their needs. In part this market failure is the result of fundamental conditions – supply side costs that are too

[67] NTCA Comments, p. 11.
[68] *Id*. at 12.
[69] *Id.* at 13.
[70] NASUCA Comments, p. 22.

high or demand-side incomes that are too low."[71]

Other parties also recognize the importance and the efficacy of targeting support to these market failure areas. USTelecom writes that even "with an optimal regulatory environment, there are some areas of the nation, particularly high cost rural areas, that do not present a viable business case for private investment in high speed broadband facilities. Such areas require additional financial incentives for investment. There are several avenues for such incentives to be provided, including low cost loans, grants, tax incentives and universal service type mechanisms."[72] USTelecom further notes that "while there are areas that are too challenging to serve solely through private investment even with an optimal regulatory environment, such areas can be minimized and the need for government support can be most efficiently directed by regulatory policies that provide certainty and do not discourage such investment."[73]

The National Cable & Telecommunications Association further states that achieving "100 percent deployment of broadband networks in rural areas solely through the private sector is highly unlikely. Many areas are simply too remote and too sparsely populated to be likely to attract investment without some form of government support. Accordingly, to achieve the goal established by Congress, action by the Commission, such as USF reform, will be essential."[74]

NECA also agrees with NTCA: "Current universal service programs have irrationally attempted to support the provision of multiple voice and wireless networks in areas that cannot economically support even one carrier. Scarce broadband support funds should be targeted to areas where it is fundamentally uneconomic for any provider to deploy state-of-the-art fixed and

[71] CFA/CU Comments, p. 28.
[72] US Telecom Comments, p. 14.
[73] *Ibid*.
[74] National Cable & Telecommunications Association (NCTA) Comments, p. 19.

mobile network facilities."[75] NECA also correctly points out the ongoing nature of identifying such areas: "The number of specific areas meeting this criterion can be expected to change continually, as technology develops and local economies grow or shrink. Similarly, required broadband speed and capability levels can be expected to evolve with technology and marketplace developments. Ongoing regulatory monitoring of deployment levels and service criterion will undoubtedly be necessary."[76]

It is nearly impossible to argue that there has been no market failure. Certainly, those Americans living in areas of the country that are too costly for even a single broadband provider to serve would attest to the existence of market failure. The United States' ongoing decline in worldwide broadband deployment rankings would serve as further evidence. The spirit of universal service, as well as the interests of future U.S. competitiveness in the global economy, mandate that the Commission take all possible steps toward seeing that these unserved Americans are able to access broadband Internet service as soon as is practically possible. In addition, reasonable assurance of ongoing funding will be needed in order for providers to justify making the commitment to investing in these difficult and expensive to serve and maintain areas in the first place.

NTCA continues to believe that "ultimately targeting broadband support to market failure areas is sound public policy that is absolutely necessary if citizens residing in the most high-cost, rural areas, especially very sparsely populated unincorporated areas, are ever to receive affordable and comparable broadband service during the 21st century."[77] The Commission should "seek a realistic, credible and transparent process to determine deployment and operating

[75] NECA Comments, p. 9.
[76] *Id.* at 11.
[77] NTCA Comments, pp. 12-13.

costs for broadband networks in…'market failure areas' and to distinguish those cost characteristics from urban areas."[78]

V. BROADBAND INTERNET ACCESS SERVICE SHOULD BE RECLASSIFIED AS A "TELECOMMUNICATIONS SERVICE" AND REGULATED UNDER TITLE II COMMON CARRIER REGULATION.

NTCA, Free Press, Consumers Union, Consumer Federation of America, Media Access Project, Public Knowledge, and National Association of State Utility Consumer Advocates (NASUCA) agree that the primary reason America continues to fall behind the rest of the world in broadband deployment, penetration, affordability, and quality is due to the decisions made in 2003 and 2005 by the FCC to classify cable and wireline high-speed Internet access service as a Title I deregulated "information service."[79] These previous decisions to deregulate high-speed Internet access service has prevented and will continue to prevent the United States from reaching its goal of ubiquitous and affordable high-speed Internet access service for all Americans. Free Press states the "FCC should reverse the foundational mistake of its broadband policy framework by reclassifying broadband as a telecommunications service."[80] Until the Commission reclassifies all broadband Internet access services as a "telecommunications service'' and regulates this service under Title II common carrier regulation the goal of ubiquitous and affordable high-speed Internet access service for all Americans will never be achieved.

By classifying all broadband Internet access service as a telecommunications service regulated under Title II, the base of USF contributors will expand to include all broadband service providers as required under section 254. Broadband Internet access services will

[78] *Id.* at 14.
[79] NTCA Comments, p. 15, Free Press Comments, p. 27, Public Knowledge and Media Access Project Joint Comments, p. 2, CFA/CU Comments, p. 17, NASUCA Comments, p. 11.
[80] Free Press Comments, Executive Summary, p. 5

automatically be subject to the non-discriminatory network management obligations under sections 201 and 202. And, interconnection standards under section 251 and 256 would apply to all broadband providers.[81] The Commission's current net neutrality principles applied to cable and wireline broadband Internet access providers have replaced the non-discrimination obligations under sections 201 and 202, and interconnection standards under section 251 and 256.[82] As a result, the FCC is "laboring to ensure those four principles are enforceable."[83] Replacing or strengthening these principles with a Title II reclassification of all broadband Internet access services will provide the Commission with all the tools needed to provide a sound basis for the accelerated deployment of advanced services and make broadband Internet access service affordable to all Americans.

Verizon, AT&T, Qwest, USTelecom and the National Cable & Telecommunications Association argue that the Commission should not regulate broadband Internet access service under Title II common carrier regulation because it would undermine consumer choice and inhibit innovation and investment in broadband.[84] Their argument lacks merit. Contrary to assertions that applying Title II regulation to broadband access would be akin to applying "legacy" regulation on new technology,[85] the failure to do so is holding back new technology, investment, and affordable broadband service. Just as regulation was necessary to protect consumers and promote innovation, investment and competition in the "legacy networks," it is

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[81] CFA/CU Comments, p. 17.

[82] The Commission has a duty to ensure interconnectivity and interoperability of public telecommunication networks pursuant to sections 251and 256 of the Telecommunications Act of 1934, as amended (Act). Specifically, Section 256 of the Act requires the Commission to establish oversight procedures to coordinate network planning. NTCA recommends that the Commission's standards and rules for the proper interconnection and exchange of traffic between broadband networks should be based on Sections 251 and 256 of the Act and limited to only the exchange of traffic between broadband providers. NTCA Comments, pp. 33-35.

[83] *Id.* p. 18.

[84] Verizon Comments, pp. 87-89, AT&T Comments, pp. 94-125, Qwest Comments, pp. 16-25, US Telecom Comments, pp.11-14, NCTA Comments, pp. 38-48.

[85] AT&T Comments, pp. 94-125, Verizon Comments, pp. 87-89.

similarly necessary going forward concerning the "broadband networks" operating within the United States.

The operators of the broadband networks, whether they use copper, cable, fiber, electric, satellite, or wireless should be subject to regulation that protects consumers and promotes competition, innovation, and affordability. The FCC has gradually whittled away at the concept of the "unregulated" Internet, imposing ad hoc regulation designed to protect the consumer interest, pursuant to its ancillary authority. Defined under Title II, the FCC can look at broadband and determine what access regulations are appropriate and necessary, and refrain from regulations that are inappropriate and unnecessary. The FCC does not have this ability or flexibility under Title I regulation and this is harming consumers, education, public health and safety, and national security.

By previously deregulating cable and wireline broadband Internet access under Title I, the Commission has beached itself and Americans are feeling the ill effects of this choice through the lack of available and affordable broadband services in many areas throughout the United States. It is the physical broadband network that provides "telecommunications" transport and it is the physical network that must be interconnected under reasonable and non-discriminatory conditions. The "Development of Competitive Markets" provisions added in 1996 to the Title II section in the Communications Act of 1934, as amended, provide the Commission with explicit authority to establish rules and regulations relating to interconnection, removing barriers to entry, universal service, interconnectivity, and consumer protection. Contrary to allegations that Title II is legacy regulation, Title II is the legal foundation for Commission action to establish the rules for a national broadband plan that protects consumers and facilitates broadband competition. Title II is the basis for our future broadband

infrastructure that will provide ubiquitous affordable broadband service throughout the United States.

VI. THE FCC SHOULD APPLY SECTIONS 251 AND 256 OF THE ACT ONLY FOR THE TRANSMISSION OF TRAFFIC BETWEEN BROADBAND NETWORKS.

NTCA agrees with Free Press in that the Commission should reclassify broadband Internet access service as a "telecommunications service" and regulate it under Title II common carrier regulation. Where NTCA disagrees with Free Press is how the Commission should apply Title II regulation when establishing the rules for interconnection, network management, unbundling, and line sharing.

One serious problem with Free Press' comments is their penchant to confuse correlation with causation. Just because a link can be established between two variables, that does not necessarily mean that a change in one variable can automatically be attributed to changes in the other, or that no other variables can explain these changes.

An example best illustrates the problem. In discussing the U.S. ranking in broadband penetration, Free Press dismisses the role of population density, saying "The population density excuse is perhaps the defense most consistently trotted out to explain away the U.S. decline, and it is also the most incorrect….For example, Iceland has one of the lowest population densities in the world, but it has the fifth highest broadband penetration in the OECD."[86] While Iceland does indeed have one of the lowest population densities in the world—measured as population per unit of land area—what may be more relevant for purposes of measuring broadband deployment is the *concentration* of that population. In Iceland, more than 50% of the nation's population lives in the country's three largest cities (Reykjavik, Kópavogur and Hafnarfjörður). More than

[86] Free Press Comments, p. 37, fn 35.

75% of Iceland's population lives in the ten largest cities.[87] (Compare this to 5% and 8%, respectively, of the total U.S. population living in the top 3 and top 10 most populous U.S. cities in 2005.) In other words, there aren't very many residents of Iceland living in remote areas. Highly concentrated populations are easier, and less costly, to serve. While there is a correlation between the population density of Iceland and its level of broadband deployment, this observation does not necessarily imply a causal relationship between the two. Further, Free Press fails to take into account other factors, which may impact broadband deployment--such as government subsidies, for example.

In a similar manner, Free Press insinuates that those countries with line sharing policies are ahead of the U.S. in broadband deployment and have lower broadband prices as a direct result of those policies. "OECD counties with line-sharing policies have DSL penetration levels nearly twice those of countries that do not require line sharing," Free Press writes,[88] automatically assuming causation though not investigating other possible reasons for the differences in penetration levels. Elsewhere, Free Press attributes differences in broadband pricing to line sharing policies: "Consumers in countries with line-sharing pay about $14 per Mbps, while consumers in countries without line sharing pay more than double that amount."[89] Again, the correlation may be readily apparent; the causation, however, is not.

NCTA correctly points out that where, as in the United States, there is already intermodal broadband competition, requiring carriers to unbundled network element and share them with competitors will have "little positive impact" in increasing broadband deployment and

[87] Based on 2005 population estimates: http://www.mongabay.com/igapo/2005_world_city_populations/Iceland.html.
[88] Free Press Comments, p. 79.
[89] *Id*. at 81.

subscription in the United States.[90] Indeed, because telephone, cable, wireless, electric and satellite companies have invested and continue to invest in advanced broadband facilities in the United States, requiring these companies to unbundle their networks will likely deter future investment and slow broadband deployment throughout America. As Scott Wallsten found: "the more countries rely on unbundled local loops or bitstream unbundling to provide DSL service, the less incumbents and entrants invest in fiber" and when there is intermodal broadband competition, "the more investment in fiber."[91] NTCA agrees.

The new broadband interconnection standards and rules should be limited for the exchange of traffic **only** and broadband providers should not be required to provide wholesale unbundled network elements (UNEs) or wholesale resale of their local fiber or digital subscriber line (DSL) loops to competitors. The deployment of optical fiber assets into rural ILEC networks is a new generation technology. No company in a competitive environment would rationally make such an investment without an appropriate consideration of the effects of existing competitive networks. Even if a company attempted to act irrationally and do so, any lender would require such an analysis and would tailor any funding decision to take into account such consideration. Requiring that such investment, if feasible, be made available to competitors unwilling to make such an investment themselves would have the net effect of providing an economic disincentive to investment which will result in the failure of public policy favoring broadband deployment. Rural LECs accept the responsibilities of providing access to end users on a provider of last resort basis and guarantee that access will allow end users to reach whatever data destination they choose on a non-discriminatory basis (subject to quality control/network management best practices).

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[90] NCTA Comments, p. 25.
[91] Wallsten and Hausladen, *Net Neutrality, Unbundling, and their Effects on International Investment in Next Generation Networks*, Review of Network Economics (March 2009).

NTCA strongly believes that the Commission's four *Internet Principles* are an important step toward maximizing the quality of Internet users' experience, but that the addition of a principal governing non-discrimination would not only not solve any problems; it would in fact threaten the ongoing viability and continued growth of the Internet.

Free Press wants to see the Commission add a fifth principle to the 2005 *Internet Policy Statement*: one preventing Internet access providers from "blocking, discriminating against or otherwise degrading any lawful content, applications or services."[92] Free Press deems the current exception allowing providers to take necessary steps to safeguard their networks from those who would degrade service for all users a "get-out-of-jail-free card"[93] which "leaves the door wide open to carriers looking to implement discriminatory practices in the name of reasonable network management."[94]

Ensuring that no network users receive lower quality service as a result of the activities of other users is a serious concern for network operators. Removing their ability to take the necessary steps to do so would empower bandwidth hogs to drag down the entire network for their own personal gain. To assume that all end users will at all times act in the best interests of their fellow network users is both foolhardy and reckless.

AT&T takes on Free Press' net neutrality arguments in their comments in this proceeding. As AT&T correctly points out, "No proponent of a non-discrimination requirement has demonstrated that the existing *Internet Policy Statement* is in any way insufficient or that hypothetical concerns about 'discrimination' have become a real-world problem."[95] While Free Press points to the Comcast case as an example of the need for additional regulations to prevent

[92] Free Press Comments, p. 163.
[93] *Id.* at 252.
[94] *Id.* at 132.
[95] AT&T Comments, p. 104.

future abuses,[96] AT&T instead sees the Commission's effective resolution of the Comcast situation as evidence that further regulations are unnecessary: "the absence of a non-discrimination requirement did not in any way prevent the Commission from addressing the issues presented by…*Comcast*."[97]

AT&T points out several instances where Free Press' proposed requirement that all Internet packets be treated exactly the same as all other Internet packets would cause difficulties: "latency-sensitive applications like streaming video would have to be given the same priority as email; an Internet VoIP 911 call could be treated no differently than a YouTube download; and a telemedicine application would need to be handled in precisely the same manner as the contents of a Web page."[98] Clearly, this would not be a desirable outcome for the Internet or its users.

NTCA believes that the Commission's principles contained in its broadband policy statement adopted August 5, 2005[99] will help to ensure that broadband networks are widely deployed, open, affordable, and accessible to all consumers.[100] NTCA further believes the Commission's net neutrality principles should also be designed to permit reasonable and non-discriminatory management of network bandwidth capacity, establish reasonable prices for special access services to the Internet backbone, and provide reasonable and non-discriminatory access to high-quality IP-based services to all consumers using the network. To this end, NTCA

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[96] Free Press Comments, pp. 154-159.
[97] AT&T Comments, p. 104.
[98] *Id.* at 106.
[99] *In the Matters of Appropriate Framework for Broadband Access to the Internet over Wireline Facilities,* CC Docket No. 02-33, *Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services,* CC Docket No. 01-337, *Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services: 1998 Biennial Regulatory Review – Review of Computer II and ONA Safeguards and requirements,* CC Docket Nos. 95-20, 98-10, *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities,* GN Docket No. 00-185, *Internet Over Cable Declaratory Ruling, Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities,* CS Docket No. 02-52, Policy Statement, FCC 05-151, Released September 23, 2005.
[100] *See* Preamble, Telecommunications Act of 1996, P.L. 104-104, 100 Stat. 56 (1996) (enacting 1996 Act "to promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies").

recommends that the FCC expand its existing network management principles pursuant to Sections 251 and 256 to include the following interconnection and nondiscrimination requirements:

1. Communications network providers should be required to provide consumers with non-discriminatory access to any lawful content or services on the public Internet through their Internet connection and allow consumers to attach any lawful equipment to their Internet connection.

2. Communications network providers should be allowed to offer quality of service priced public and private services to providers of IP-enabled services who seek to guarantee the quality of their services to the communications network provider's end-user customers.

3. Communications network providers should be allowed to take reasonable and non-discriminatory measures to protect their networks through the management of bandwidth and transmission of content and applications to their customers.

4. Communications network providers, including Internet backbone providers, should be required to provide all communications network providers with non-discriminatory access to the Internet backbone, including special access (middle-mile) transport needed to reach the Internet backbone.

5. Communications network providers, including Internet backbone providers, should be required to price their Internet backbone service, including special access (middle-mile) transport needed to reach the Internet backbone, based on their cost to provide the service.

6. Communications network providers, including Internet backbone providers, should be required to provide non-affiliated communications network providers with the same terms, conditions, and prices that the Internet backbone providers charge their affiliated companies and business customers for access to the Internet backbone, including special access (middle-mile) transport needed to reach the Internet backbone.

7. Communications network providers, including Internet backbone providers, should be required to make publicly available all of the terms, conditions and prices for their Internet backbone services, including special access (middle-mile) transport needed to reach the Internet backbone.

Considered as a package, these expanded net neutrality principles constitute a sound basis for open non-discriminatory networks that protect the interests of consumers, ISPs/broadband service providers, and IP application/content providers. Nothing in NTCA's proposed principles

condones the blocking or dropping of any lawful IP applications or broadband transmissions used by consumers or IP application/content providers.

VII. REASONABLE RATES, TERMS AND CONDITIONS FOR POLE ATTACHMENTS ARE KEY TO BROADBAND DEPLOYMENT IN RURAL AREAS, ESPECIALLY WHERE SMART GRID APPLICATIONS ARE USED.

Part of the national broadband plan should include reforms to the Commission's federal pole attachment regulations, as NTCA has contended in the Commission's open pole attachment docket.[101] The Commission should reject assertions by some utilities that telco and cable subsidies should be removed and that no changes are needed to the pole attachment regime because any change could jeopardize public safety or reliability.[102] Indeed, the utilities are raising barriers to entry against rural telcos in broadband provisioning through sky-high pole attachment rates and unfair, unreasonable and discriminatory pole attachment terms and conditions.

As the Utilities Telecom Council and Electric Edison Institute revealed, utilities are revamping portions of the electric grid and their internal usage of telecommunication facilities to bring broadband to some communities through BPL (broadband over power line) and smart-grid electric usage applications.[103] These same utility groups are asking the Commission for favorable treatment by allocating 30 MHz of spectrum in the 1800 – 1830 MHz range to smart-grid applications without the necessity of bidding at auction.[104] Yet, the utilities are stifling broadband services competition by barricading their poles through unreasonable and unjustified

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[101] *In the Matter of Implementation of Section 224 of the Act, Amendment of the Commission's Rules and Policies Governing Pole Attachments*, WC Docket No. 07-245, FCC 07-187, RM-11293, RM-11303, Notice of Proposed Rulemaking (NPRM), filed Nov. 20, 2007, NTCA Reply Comments (filed Apr. 22, 2008).
[102] Utilities Telecom Council and Edison Electric Institute (UTC/EEI) Joint Comments, pp. ii, iii, 16-18, NRECA Comments, pp. 9-10, Virginia Power Electric (VPE) Comments, pp. 9, 12.
[103] UTC/EEI Joint Comments, p. 12 ("[Utilities} have used their private internal networks to provide broadband services."], NRECA Comments, p. 13 ("Seven electric cooperatives … are providing broadband access to their customers, using BPL [broadband over power line] service provided by IBEC and IBM … funded in part with loans from the USDA's Rural Utility Service broadband loan program.").
[104] UTC/EEI Joint Comments, pp. 10-11, NRECA Comments, p. 12.

rates, terms and conditions.

As part of the national broadband plan, the Commission should modify the pole attachment rules to create a dispute resolution mechanism that allows ILECs to resolve complaints of unjust and unreasonable pole attachment rates, terms and conditions against utilities. The Commission should set the lowest, fairest rate for broadband attachments that will encourage broadband deployment in rural areas. These changes will affect neither the public safety component nor the reliability of the electric grid, but will enhance competition and reduce consumers' broadband rates.

Smart grids, an integral part of the Obama Administration's broadband plans, are intensive high-consumption users of Internet services which, consequently, place substantial demands on broadband providers. As Comcast noted, "The Recovery Act included billions of dollars to jump-start 'Smart Grid' projects."[105] Smart grids consist of real-time, two-way communications systems that allow consumers to make timely, effective decisions on electricity use as a function of price spikes. UTC/EEI noted that "the market for communications equipment to support smart grid will reach $20 billion annually over the next five years."[106] Utilities which can control the broadband consumption of smart grid by controlling access to their poles have an unfair advantage over rural telcos who must pay excessive rates without recourse.

Small rural ILECs and their customers are entitled to just and reasonable rates, terms and conditions for pole attachments, and rural ILECs need and deserve a remedy mechanism by which ILECs can present claims of unjust, unreasonable pole attachment rates, terms and conditions imposed by utilities. Small rural ILECs operating in states that have not certified their

[105] Comcast Comments, p. 88.
[106] UTC/EEI Joint Comments, p. 5.

control over pole attachments, such as Arizona and North Carolina, lack an express procedural remedy for unjust and unreasonable pole attachment rates, terms, and conditions. NTCA's recommendation would remedy this omission. In certified states, such as Kentucky, New Hampshire, Vermont, Massachusetts, and Ohio, the Commission's actions regarding reasonable rates, terms and conditions will provide influential guidance to the state public service commissions on handling ILEC pole attachment complaints.

Rural ILECs depend on pole attachments for broadband deployment, and excessive rates and improper terms and conditions can discourage and delay broadband deployment in rural communities. Consumers of broadband will benefit the most when the artificial handicap of rate discrimination is removed. When broadband providers compete directly, consumers benefit from the lower prices, higher speeds, and better quality of service. Unfair advantages created by discriminatory rate structures will hinder if not harm those providers who bear unequal regulatory burdens, such as rural ILECs.

For these reasons, the Commission should create a dispute resolution mechanism that allows ILECs to resolve complaints of unjust, unreasonable pole attachments rates, terms and conditions. Furthermore, the Commission should set the lowest, fairest rate for broadband attachments that will encourage broadband deployment.

VIII. A NATIONAL BROADBAND PLAN MUST CONSIDER THE WIRELESS NEEDS OF RURAL COMMUNITIES

Wireless broadband is a necessary and useful component of the national broadband network. The majority of NTCA members offer fixed and/or wireless broadband service as a compliment to their wireline broadband service. But their efforts are often stymied by wireless rules and policies that favor large players to the detriment of small wireless providers and their rural subscribers. To accomplish truly ubiquitous broadband deployment, the Commission must

lower barriers for small, rural wireless providers.

A. Rural Wireless Providers Need Realistic Spectrum Opportunities

Rural wireless providers are dedicated to serving their communities. They seek spectrum, not as an asset, but as an opportunity to serve. As T-Mobile stated, "[t]o succeed as a national policy, the National Broadband Plan must outline steps for enabling mobile providers' – and, hence, consumers' – access to additional spectrum and infrastructure.[107] Unfortunately, spectrum auctions and policy tend to favor large regional and nationwide providers who often hoard spectrum and let it lay fallow.

NTCA and others have consistently requested that the Commission license wireless service territories in a manner that offers opportunities to small wireless providers interested in serving rural territory.[108] Small wireless providers with a vested interest in serving rural territory have a realistic opportunity to obtain spectrum only if it is auctioned according to small geographic areas. Small carriers lack the financial resources to compete with large carriers at auction for large geographic territories. Large carriers may be primarily interested in serving the urban communities while rural providers are interested in serving the rural communities, but auctioning them together ensures that the large carrier with urban interests will win. Rural wireless broadband deployment requires rural wireless provider opportunity.

Some commenters suggest that the Commission should use this proceeding as a vehicle to adopt rules for the 700 MHz D block.[109] Rather than adopting wireless licensing rules that favor one company's untested business plan based on mere promises to provide broadband to rural communities, the Commission should look to proven strategies that puts spectrum into the hands of rural community providers.

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[107] T-Mobile Comments, p. 10.
[108] *See, e.g.,* OPASTCO Comments, p. 35.
[109] *See, e.g.,* New EA, Inc. dba Flow Mobile Comments, pp. 12-14.

Once a provider obtains spectrum, it should be subject to a "keep what you use" policy. After a reasonable build-out period, providers with large license territories should be forced to part with unused spectrum to free it up for other parties who will use it.

The Commission should also put a limit on large carriers' acquisition of spectrum. The two largest wireless providers have been forced to divest spectrum as they've swallowed a number of medium and small wireless providers. The Commission should deny their applications to purchase spectrum from each other, thereby thwarting the limited competitive protections the divestiture requirements sought to achieve. Small, rural providers are interested in acquiring the divested spectrum and should be provided an opportunity to obtain it.

B. Regulation of Roaming and Handsets is Necessary to Prevent Nationwide Providers from Using their Market Power to the Detriment of Rural Providers

The Commission's favorable resolution of outstanding rural wireless issues would go a long way toward ensuring that rural communities have access to comparable wireless broadband. The Commission should mandate automatic data roaming, eliminate the home roaming exception and prohibit handset exclusivity agreements.[110] Customers value a seamless wireless broadband experience. However, customers of rural wireless providers face high data roaming charges. The Commission adopted an automatic roaming requirement for voice services,[111] but it must now recognize that the network of the future, *i.e.*,, the broadband data network , requires the same consumer protections. NTCA agrees with RTG and "strongly urges the Commission to mandate automatic roaming, at just and reasonable rates, for all data services and broadband

[110] RTG Comments, pp. 2-4, OPASTCO Comments, pp. 36-37.

[111] *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers*, WT Docket No. 05-256, Report and Order and Further Notice of Proposed Rulemaking, 22 FCC Rcd 15817 (2007).

applications."[112]

Similarly, the Commission must address the "home roaming" exception to the automatic roaming requirement.[113] The policy of not requiring roaming in "home" licensed territories is intended to encourage network build-out, but it discourages rural competition. Small players need a period of time to build-out licensed territories. Without the ability to roam on other carriers' networks during the build-out period they cannot compete with nationwide providers and their vast existing networks. The ability to roam in a home market, at least during an initial build-out period, provides consumers with alternatives to large, nationwide providers.

The Commission must also act to eliminate the stranglehold that nationwide carriers have on state-of-the art mobile devices. Exclusive agreements between large wireless providers and handset manufacturers puts small rural carriers at a significant competitive disadvantage in areas where they compete with large providers and deprives consumers of mobile broadband devices in areas where the nationwide providers offer no, or limited, service.

IX. CONCLUSION.

The Commission must apply Title II regulation to broadband services and target future high-cost broadband USF support to the highest-cost areas throughout America. The one-time $7.2 billion in grants, loans, and loan guarantees available in the American Recovery and Reinvestment Act of 2009 (ARRA) is simply not nearly enough to achieve the Nation's long-term broadband needs and goals. The single most influential factor in stimulating our economy and establishing the United States as a global leader in broadband is America's willingness to invest, build and maintain our broadband networks.

[112] RTG Comments, p. 3
[113] OPASTCO Comments, p. 35, RTG Comments, p. 3.

The highest priority in the Commission's National Broadband Plan must center on strengthening and preserving our universal service policies in a manner that restates the underlying program's value in an IP world. To ensure the goal of a viable and open public Internet with high-quality, affordable and comparable high-speed broadband service to all consumers, the Commission must focus on providing sufficient, sustainable, and predictable USF support for broadband services throughout the "highest-cost areas" in the United States. Specifically, the Commission should consider and adopt the following reasonable, timely, and prudent measures as part of its National Broadband Plan:

1. Define "broadband" based on high-speed Internet access capabilities during peak-hour or busy-hour load that are generally available in a significant sample of service offerings in urban areas to establish a standard of comparability and affordability in urban and rural areas. As the capability of broadband technology and IP applications develop, the definition must evolve to meet consumer, education, business, and public health/safety demands. By linking the definition to generally available services, affordability, and comparability, the definition is enduring, technology neutral, and in the public interest.

2. Include "broadband Internet access service" in the definition of "universal service."

3. Open a proceeding to define and identify "Market Failure Areas" throughout the United States and target these areas for future high-cost broadband USF support in order to ensure consumers living in these areas have access to affordable and comparable broadband service.

4. Define a "Market Failure Area" as an area that does not have the population base or economic foundation for any provider to justify broadband facilities build-out and ongoing maintenance without external monetary support.

5. Reclassify wireline and cable "broadband Internet access service" as "telecommunications service."

6. Regulate broadband Internet access service providers under Title II common carrier regulation.

7. Apply a Title II earnings review to all broadband providers who voluntarily receive federal high-cost broadband USF support.

8. Allow rate-of-return (RoR) carriers to receive future federal high-cost broadband USF support through the Interstate Common Line Support (ICLS) mechanism, and price-cap carriers seeking to receive future broadband USF support through the Interstate Access

Support (IAS) mechanism, when they voluntarily choose to have their broadband services regulated under Title II and voluntarily provide their total company regulated Title II costs, revenues, and earnings to be used when determining their future broadband high-cost USF support disbursements.

9. Include ongoing operations and maintenance expenses, in addition to construction cost, in the calculation of the future high-cost broadband USF support.

10. Transition all high-cost voice USF support to high-cost broadband USF support over a reasonable time period to avoid rate shock, prevent service disruptions, and provide stability and certainty during the transition.

11. Maintain RoR regulation for rural ILECs throughout the transition period and allow rural ILECs to base their high-cost USF support on each carrier's study area average costs to ensure affordable and uninterrupted broadband Internet access service to rural, high-cost consumers.

12. Allow RoR rural carriers to provide stand-alone/naked broadband service with the same level of universal service funding as allocated to their bundled voice and broadband service during and after the transition period.

13. Expand the base of USF contributors to include all retail broadband Internet access service providers.

14. Open a proceeding to determine whether other companies that impose significant costs on the public Internet, such as Google, should be required to contribute to the new high-cost broadband USF mechanism.

15. Assess USF contributions based on telecommunications and broadband revenues.

16. Include Internet backbone and special access (middle-mile) transport service costs in the calculation for determining future high-cost USF broadband support.

17. Eliminate the identical support rule and base high-cost USF support on each company's own costs within 5 years.

18. Refrain from capping and/or freezing rural carrier high-cost USF support because this will halt broadband deployment in high-cost areas and leave many rural consumers with substandard broadband service or without any broadband service whatsoever.

19. Require IP/PSTN traffic, specifically interconnected VoIP traffic, to pay applicable tariffed originating and terminating interstate access rates, intrastate access rates, and reciprocal compensation rates, throughout the transitional period and/or until such time as there is no longer a PSTN.

20. Implement intercarrier compensation (IC) reform as part of the National Broadband Plan by allowing state commissions to reduce voluntarily, on a company-by-company basis, intrastate originating and terminating tariffed access rates to interstate tariffed access rate levels within 5 years, and at the same time freeze interstate originating and terminating access rates in order to keep interstate access rates from increasing.

21. Establish a Restructure Mechanism (RM) as part of IC reform that allows RoR carriers to recover lost access revenues not recovered in end-user rates through supplemental ICLS and price-cap carriers to recover lost access revenues not recovered in end-user rates through supplemental IAS.

22. Establish Title II interconnection and network management rules pursuant to Sections 251 and 256 of the Act to allow for the seamless transmission of communications between public broadband Internet access networks.

23. Require vertically-integrated Internet backbone and special access (middle-mile) transport provider rates to be cost-based and non-discriminatory.

24. Expand and make permanent the Universal Service Fund's Rural Health Care Pilot Program. Telemedicine networks made possible by broadband services save lives and will improve the standard of healthcare and life in sparsely populated, rural areas. Telehealth and telemedicine must be a critical component to the National Broadband Plan.

25. Improve the proposed broadband pilot program for low-income customers by setting aside half of the pilot program funds for rural low-income consumers and by clarifying the speed and device availability requirements. Permitting eligible carriers to use the low-income broadband pilot program to offer broadband internet access to part of their service territories, rather than the entire territory, will enhance participation in the pilot program and, consequently, give more rural consumers affordable broadband internet access.

26. Establish reasonable and non-discriminatory pole attachment rates for broadband pole attachments to encourage and accelerate broadband deployment, including smart grid applications.

27. Use the Regulatory Flexibility Act (RFA) (5 U.S.C. Section 601) effectively and adopt alternative rules to reduce the economic burden on small providers of broadband Internet access service, such as RoR rural carriers.

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I, Adrienne L. Rolls, certify that a copy of the foregoing Reply Comments of the National Telecommunications Cooperative Association in GN Docket No. 09-51, FCC 09-31, was served on this 21st day of July 2009 by first-class, United States mail, postage prepaid, or via electronic mail to the following persons:

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October 22, 2009

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***Ex Parte* Notice:**

***In the Matter of a National Broadband Plan for Our Future,* GN Docket No. 09-51.**

***In the Matter of the High-Cost Universal Service Support and Federal-State Joint Board on Universal Service,* WC Docket 05-337, and CC Docket 96-45.**

***In the Matter of Developing a Unified Intercarrier Compensation Regime,* CC Docket No. 01-92; and *IP-Enabled Services,* WC Docket 04-36.**

***In the Matter of AT&T Petition for Immediate Commission Action to Reform its Universal Service Contribution Methodology,* WC Docket No. 06-122.**

Dear Ms. Dortch:

On Wednesday, October 21, 2009, Wendy Fast, with Consolidated Telephone Companies, Ken Pfister with Great Plains Communications, Jeff Pursley with Parrish, Blessing and Associates and I met with Carol Mattey, Tom Koutsky, Rebekah Goodheart, and Mukul Chawla with the Broadband Task Force, Don Stockdale, Marcus Maher, and Irene Flannery with the Wireline Competition Bureau and discussed issues raised in the above-referenced dockets. NTCA's positions discussed during the meeting are the same as those reflected in the attached NTCA filings in these dockets. Distributed at the meeting is the attached presentation which outlines NTCA's broadband universal service reform proposal.

Pursuant to Section 1.1206 of the Commission's rules, a copy of this letter is being filed via ECFS with your office. If you have any questions, please do not hesitate to contact me at (703) 351-2016.

Sincerely,

/s/ Daniel Mitchell
Daniel Mitchell
Vice President
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DM:ar

cc: Carol Mattey, Tom Koutsky, Rebekah Goodheart, Mukul Chawla, Don Stockdale, Marcus Maher, and Irene Flannery

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Meeting the Congressional Objective of Universal Broadband

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Ken Pfister, Great Plains Communications
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Jeff Pursley, Parrish, Blessing and Associates
October 2009

Current Funding Will Not Create Broadband Deployment

- Congressional Mandate: ubiquitous, efficient and affordable broadband
- The FCC has recognized that

Private Investment + USF + BTOP + BIP < Congressional Objectives

  - Our challenge is to identify the changes in public policy such that Congressional Objectives are aligned with the cost of providing Broadband Universal Service:

Return * (Investments – Grants) + Expenses = Customer Revenues + USF

  - When customer revenues are inadequate, *stable, sufficient* USF needs to make up the difference.
- Broadband deployment is inadequate, especially in the most rural areas.
- Without a major overhaul of USF, the situation will only worsen.

Proper and Timely Regulatory Changes Are Needed

- A systematic, on-going program is necessary to create incentives for incremental deployment of fiber deeper in the network capable of increasingly higher speeds.
- Implicit within this process must be:
  - Rethinking how competition and universal service policies interrelate.
  - Substantial reform of the current universal service system, including targeting and accountability.
  - Special access and backbone price constraints and connectivity requirements.
- The FCC has already recognized that many of these policy changes are necessary.

1996 Act Objectives: Competition and Universal Service

- The Act opened the network to competition, but competition has not materialized in all areas.
- NTCA identified two different market conditions:
  - *Competitive Market Areas (CMA)*—Areas where market forces will promote broadband services at reasonable prices without universal service funding.
  - *Market Failure Areas (MFA)*—Areas where market forces will NOT promote broadband services at reasonable prices without universal service funding.
- Sections 254(b) and (c) do not contemplate universal service funding being provided for overbuilding of existing facilities or to low-cost metropolitan areas.

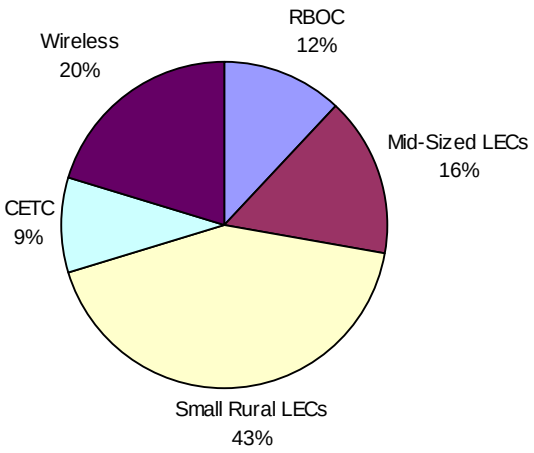
NTCA's Universal Service Concepts

- Market Failure Areas should receive universal service support, regardless of the category of carrier serving the customer.
  - Only one provider should be supported in a MFA.
  - As a condition of receiving universal service support, a provider should be subject to Title II regulation and earnings review.
  - The receipt of universal service support is optional, but if accepted the carrier must provide broadband to *all* households in the MFA.
- The broadband definition should be linked to the broadband service generally available in a sample of urban areas.
- Backbone and middle-mile transport costs should be supported through universal service.
  - Such services should be regulated in non-competitive areas to minimize cost and USF burdens.

The Current $4.3 B in High Cost USF Needs to Be Retargeted

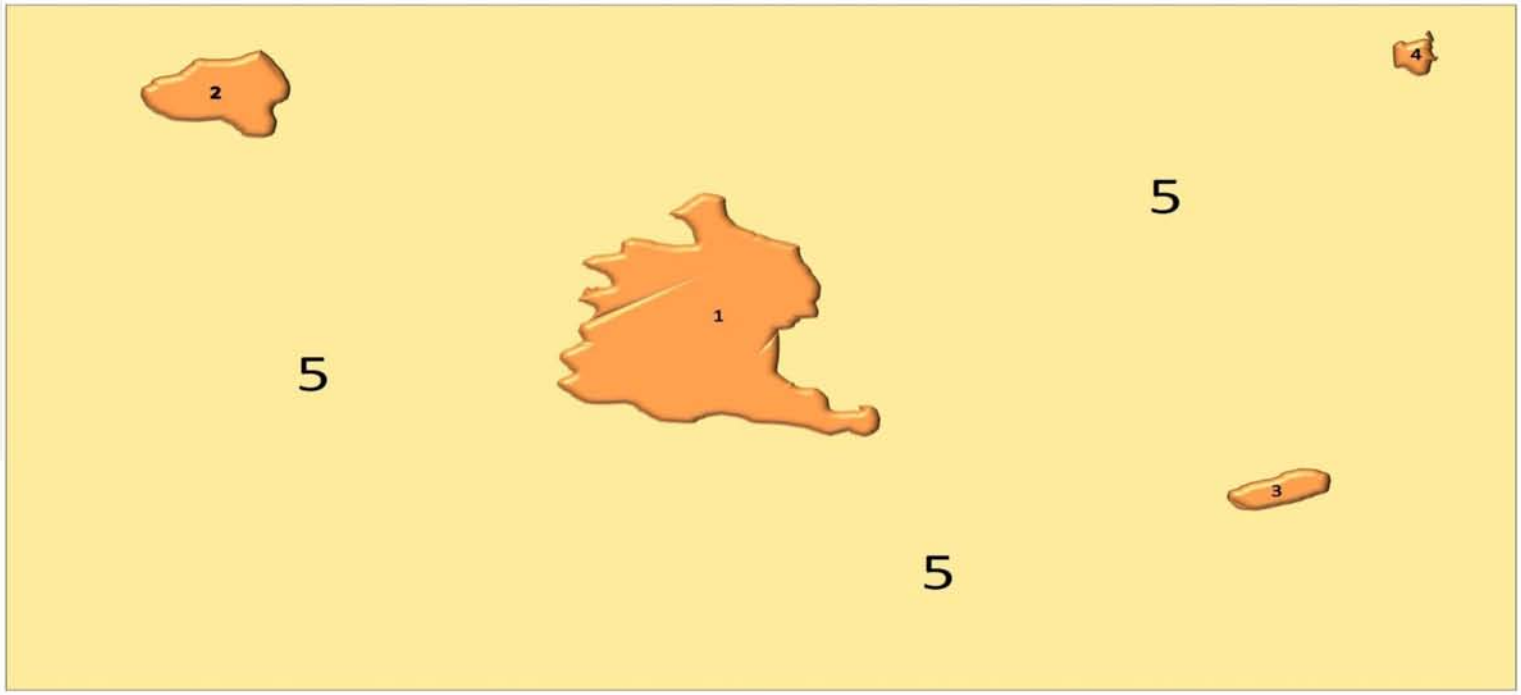
- Wireless companies receive 20% of high cost support, yet most wireless support does not relate to the cost of wireless plant.
  - Wireless companies have relatively few large switches, but receive $72M or 16% of LSS.
  - Even though towers are the significant cost variable, universal service is paid based on handsets.
  - In many instances, support is not being paid to high-cost areas.
- CETCs receive 9% of the high-cost fund, yet they primarily serve towns or cities where the costs are lower.
- Companies are not deploying broadband because the stability and sufficiency of compensation is in doubt and there are no penalties for lack of performance.

Current Distribution of High Cost Support



Existing Money Should Be Retargeted

- Biggest cost driver is household density.
  - For wired networks, a good density measure is households per square mile.
  - Small towns are more similar to urban areas than to out-of-town areas. According to census data, the average nationwide density per square mile are as follows:
    - 6 in out-of-town areas, although the density varies widely.
    - 253 for towns with fewer than 500 households.
    - 470 for all towns.
- Existing structures that attempt to define market areas will not work, e.g. exchanges, study areas, states, MSAs.



Market Areas 1-4 are Cities/Towns with higher density than the surrounding area—generally CMAs.

Market Area 5 is a lower density area outside of Cities/Towns—generally MFAs.

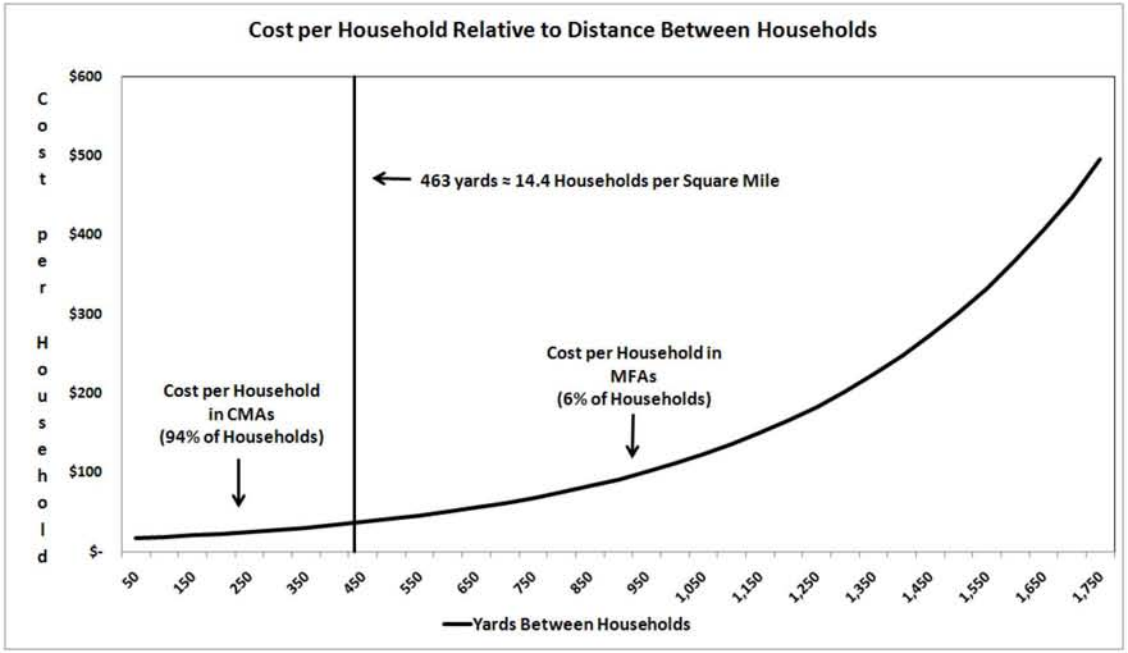
NTCA's Possible Approach to Develop Support Amounts for MFAs

- The cost to provide service in a given market area will be estimated based on a sample of the actual cost of providing service in such areas.
  - A statistically valid sample of *fiber* projects with different cost characteristics can be developed.
  - Sample data would be used to develop an econometric model.
- If "Broadband Access to the Internet" costs exceed estimated Title II broadband revenues in a given market area, such an area would be considered a MFA.
  - Density, terrain, income, consumer rates, broadband penetration are all factors that need to be considered.
- A waiver process must be in place to handle extreme situations.

Preliminary Results: Approximately 6% of the Households Need Support

- Support needed for MFAs nearly triples when competition is funded. Two-thirds of existing USF dollars are being used to subsidize competition in areas where service already exists.
- We agree with the FCC's statement: The distance between housing units rises rapidly for the last 2-5%, driving up cost and limiting revenue opportunities.

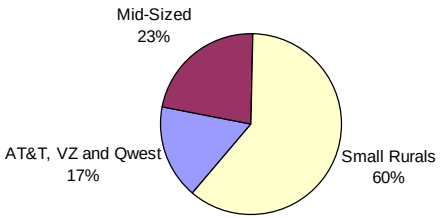
Results (using a $45 benchmark)	CMAs	MFAs
Areas	27,800	3,200
Square Miles	0.6M	2.9M
Households	110M	7M
Percent of Households	94%	6%
Simple Average of Market Area Densities	391.61	6.34



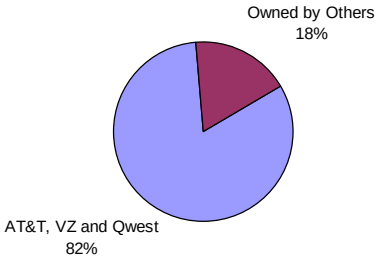
- Our data confirms and expands upon the FCC's analysis that costs increase as household density decreases.
- Based on our initial modeling, 463 yards between households is the "tipping point" between CMAs and MFAs.
- If the existing funds were redistributed using only density as a measure of cost, $1.5 B would be reallocated.

Cost, not Line Counts, Is the Appropriate Metric

RLECs receive more high-cost support than AT&T, VZ and Qwest...



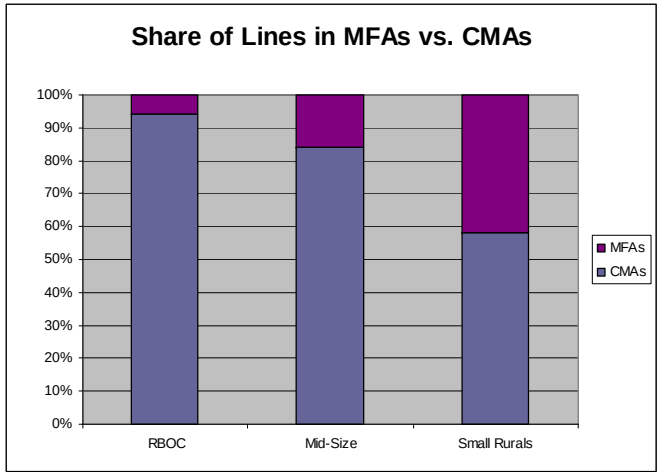
...Even though most non-upgraded lines are owned by those three companies

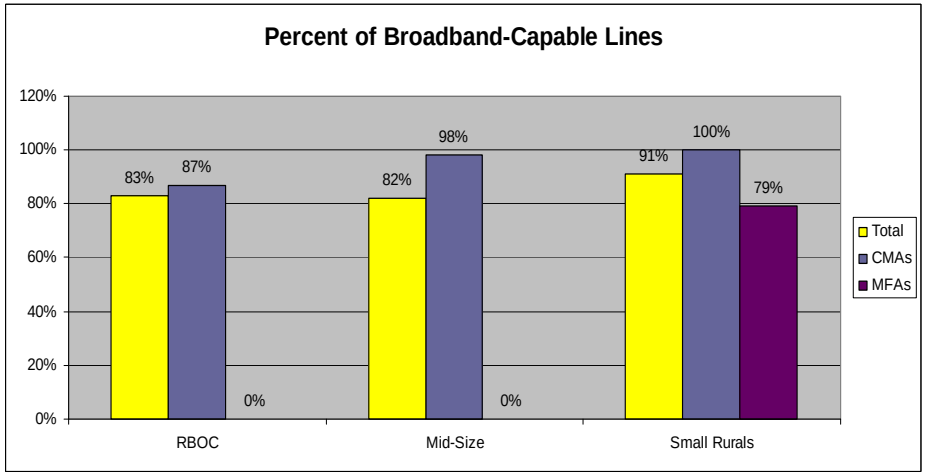


Source: FCC Broadband Meeting Handout September 29, 2009

- Be wary of “Rural support per line” as the costs vary significantly.
- The absolute number of lines is not as important as the overall cost of the areas served.
- While RBOCs have MFAs, we believe RBOC MFAs to be more densely populated than mid-sized and rural MFAs, and thus less costly on a per line basis.
- Cost is the appropriate metric.

Rural America is Falling Behind in Broadband Deployment



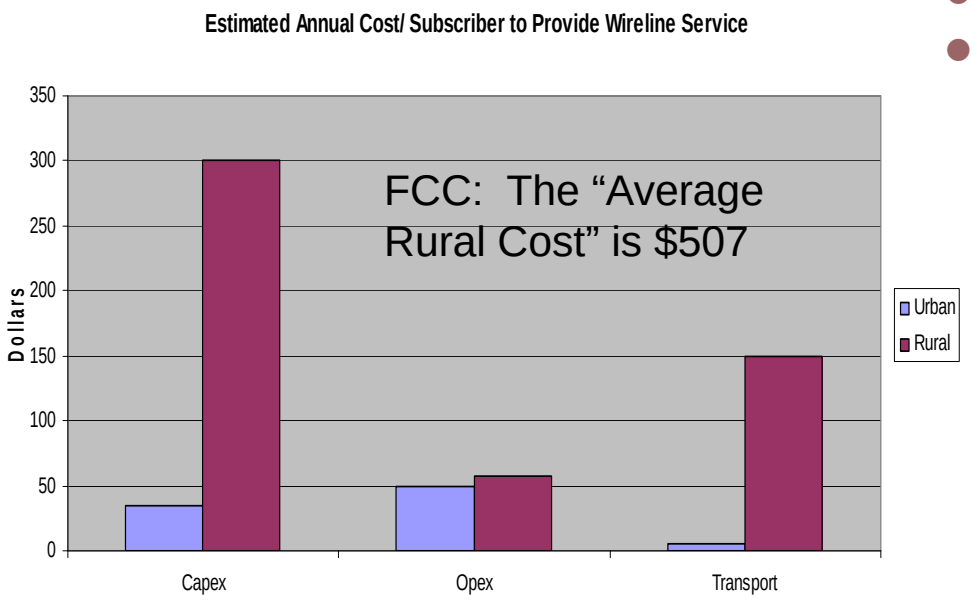


- RBOCs and mid-sized companies have the vast majority of lines in CMAs—areas that don't need support—while small rural companies have large portions in MFAs.
- While all carriers have made investments in broadband, larger carriers have not done so in MFAs and are not even fully deployed in their CMAs—even though they receive 39% of total ILEC support.
- Although small rural companies have deployed at least 200 kbps[1] to most customers, much of that plant will not meet tomorrow's broadband needs.

[1] Based on the FCC's current definition of broadband at 200 Kbps or higher. Source: NTCA Broadband/Internet Availability Survey NOTE: This survey was not statistically valid, so conclusions are not necessarily representative.

FCC: "end-to-end fiber networks offer nearly unlimited scalability and performance."

- We agree. Fiber has significant technical advantages over competing technologies.
  - The cost of FTTN is usually significantly less than a FTTP project.
  - FTTN provides a stepping stone for eventual FTTP deployment.
  - Upgraded electronics allow for higher speeds.



- Fiber is expensive!
- Be wary of aggregate costs, as "Rural Costs per Line" vary significantly.
  - To achieve a maximum speed of 1 Mbps, even without transport costs, our data by state for MFAs ranges from $600 to over $5,000.
  - Since our analysis excludes all CMAs, the lower end of our cost estimates exceeds the FCC's cost per line.

To Stimulate Investment the Social Compact Must Be Reinvigorated

- Even though rural companies have deployed significant broadband…
  - Rural companies have not recovered their investment cost.
  - Ongoing investments are required, especially in electronics.
  - Fiber is not ubiquitous or even to all the nodes.
    - While only 20% of Consolidated's and Great Plains' local plant is fiber, this was accomplished at a combined investment in excess of $40 M. Even so, only 63% of the nodes are fiber fed.
- Deployment will not occur in RBOC or mid-sized areas without more accountability.
- Universal service recipients should be held to the same standards: Title II, Earnings Oversight and Deployment Requirements.
- Without universal service modifications, the deployment in rural America will halt and the broadband gap between CMAs and MFAs will expand.

Grants Alone Are Not the Answer to Ubiquitous Broadband!

- High administrative cost for carriers and the government.
- Inappropriate awarding of funding will result in less broadband being deployed, rather than more.
  - Effectively reduces the customer density if customers are “cherry picked.”
  - If grants were provided to a second provider to overbuild in MFAs, the USF will be increased between 35% and 40%.
- One-time grants are inconsistent with COLR obligations.

Grants for MFAs Don't Justify the Investments

- Illustrative Project: RUS Grant Last-Mile Project
  - FTTN to 2,400 customers in 8 exchanges
  - Funded by 50% Grant and 50% Loan
  - Cost $10.3M ($5.15 M Grant)
- Net Present Value:
  - 60% Take Rate Assumed
    - Company's Current Take Rates are 40%
  - NPV = <$27M> assuming no incremental USF or
  - NPV = <$17M> assuming current ICLS
- Universal service policy must be fixed because grants will not accomplish the goal of broadband deployment.

On-going Support for OpEx Is Necessary

- FCC: The OpEx challenge is often magnified in rural areas due to difficult transport economies. We agree.
- Even though an area may not be a MFA, transport costs could still be exceptional.
- Consolidated's backbone costs increased 63% in the past two years, while Great Plains' increased 100%.
- We can't offer our customers affordable broadband prices if we have unreasonable transport costs.
  - Consolidated's DSL transport cost is $29/customer
  - Customer demand for bandwidth is growing exponentially

Regulate to Ensure Open Access and Affordable, Fair Interconnection

- FCC: Applications and device use and demands are evolving; **Internet use today will not look like Internet use tomorrow.**
  - **…the utility of the internet is in usage…**
  - We agree.
- To ensure that there is a ***public*** Internet capable of a variety of applications,
  - support should only be used to fund public networks
  - the entire network must have sufficient throughput—not just the local distribution network and
  - the cost to reach the backbone must be affordable and
  - networks must be required to interconnect.
- Without appropriate policy changes, the full potential of the Internet will NOT be reached.