

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

In the Matter of )  
 )  
Inquiry Concerning the Deployment of Advanced ) GN Docket No. 09-137  
Telecommunications Capability to All Americans in a )  
Reasonable and Timely Fashion, and Possible Steps to )  
Accelerate Such Deployment Pursuant to Section 706 )  
of the Telecommunications Act of 1996, as Amended )  
by the Broadband Data Improvement Act )  
 )  
A National Broadband Plan for Our Future ) GN Docket No. 09-51  
  
TO: The Commission

**COMMENTS OF  
THE WESTERN TELECOMMUNICATIONS ALLIANCE**

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**SUMMARY**

The rural telephone company members of the Western Telecommunications Alliance (“WTA”) members have been leaders in the deployment of fiber-DSL loops and the provision of current broadband services in their rural service areas. They understand that the job of upgrading their networks is not done, and that the telecommunications network is rapidly being transformed into a broadband network that will increasingly be called upon to carry massive volumes of existing, projected and yet-to-be-envisioned telecommunications and information service traffic at speeds likely to surpass the Gigabits per second (“Gbps”) level within the next decade or so. Whereas wireless broadband services will play a significant complementary role in this developing broadband network, high-capacity and readily-scalable fiber optic networks will be needed to deploy this plethora of new and expanded services in an effective, efficient, reliable and secure manner. If WTA members and their sources of loans and other investment capital have reasonable assurance that they can maintain sufficient revenue streams, they are ready and willing to complete the conversion of their prior networks to the fiber-to-the-home (“FTTH”) networks that will be needed to serve as the critical foundation for the desired National Broadband Network.

Among the actions the Commission can take in this and related proceedings to encourage and accelerate the deployment of broadband throughout the United States are: (1) define “broadband” in the form of flexible guidelines that can evolve over time in response to customer demand, service options, technological advances and economic constraints; (2) employ separate definitions, minimum transmission speeds and other criteria for wireline broadband services and wireless broadband services in recognition that they are complementary services that will be

purchased and used by most households and businesses for significantly different purposes; (3) recognize the critical role of fiber networks in furnishing high capacity, scalable, reliable and durable broadband services to households, businesses and other fixed locations, as well as in supporting wireless broadband networks and relieving congestion on them; (4) coordinate ongoing FCC Form 477 data collection and support pending broadband mapping efforts, and use the resulting substantial amounts of existing and accumulating data to identify areas that are “unserved” and “underserved” with respect to broadband; (5) consider the use of professional broadband demand surveys to improve the knowledge base for evaluating broadband take rates and affordability issues (but do not include broadband demand survey requirements in the FCC Form 477 reports); (6) ensure the continued provision of the sufficient USF support and intercarrier compensation revenue streams needed by RLECs to finance the completion of the fiber-DSL and FTTH upgrades required to offer their rural customers broadband services and rates reasonably comparable to those available in urban areas; and (7) eliminate certain rules and procedures (for example, the Section 54.305 “parent trap” provisions, lengthy Part 36 study area waiver processing periods, and the identical support rule) that have had the unintended consequence of hindering small carriers from bringing broadband services to unserved and underserved customers residing in various low-priority rural exchanges of larger ILECs.

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**COMMENTS OF  
THE WESTERN TELECOMMUNICATIONS ALLIANCE**

The Western Telecommunications Alliance (“WTA”) submits its comments in response to the Commission’s *Notice of Inquiry* (Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans In a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act), GN Docket No. 09-137, FCC 09-65, released August 7, 2009 (“*NOP*”).

WTA’s rural telephone company members have been leaders in the provision of the current version of “broadband” facilities and services to Rural America. WTA has recently submitted substantial comments on June 8, 2009, setting forth its experiences, positions and policy recommendations with respect to a variety of the broadband issues raised in the National Broadband Plan proceeding (GN Docket No. 09-51). WTA understands that these GN Docket No. 09-51 comments will be incorporated into the record of this proceeding. Whereas WTA will focus herein upon the questions asked in Comments of the Western Telecommunications Alliance, GN Docket No. 09-137, September 4, 2009

the August 7, 2009 *NOI*, many of its comments and recommendations herein are substantially similar or identical to its comments in GN Docket No. 09-51 due to the overlapping subject matter and proximity of the filings.

WTA's position in both proceedings is that the telecommunications network is rapidly changing into a broadband network that is distributing burgeoning amounts of voice, data and video traffic at the present time and that will be called upon within the next decade or so to carry massive volumes of existing, projected and yet-to-be-envisioned telecommunications and information service traffic at speeds likely to surpass the Gigabits per second ("Gbps") level. Whereas wireless broadband services will play a significant complementary role in this developing network, high-capacity and readily-scalable fiber optic networks will be needed to deploy this plethora of new and expanded services in an effective, efficient, reliable and secure manner. WTA members and other rural telephone companies have made a substantial start in upgrading their traditional copper loop distribution plant to hybrid fiber-DSL (digital subscriber loop) facilities in order to make existing broadband services available to their customers. However, they still have to make major additional infrastructure investments in order to continue to provide their rural customers with broadband facilities and services reasonably comparable in quality, speed and price to those that will become increasingly available in urban areas. WTA believes that the best way for the Commission to encourage and enable the requisite investments and upgrades in rural telephone company service areas is to modify high-cost support programs and intercarrier compensation mechanisms to ensure sufficient cost recovery for rural broadband facilities and services.

**I****The Western Telecommunications Alliance**

The Western Telecommunications Alliance is a trade association that represents more than 250 rural incumbent local exchange carriers (“RLECs”) operating within the twenty-four states located west of the Mississippi River, including Alaska and Hawaii. WTA members are generally small companies that serve remote and rugged areas where the per-customer costs of constructing, operating and maintaining both wireline and wireless networks are much higher than in urban and suburban America. Their primary service areas are comprised of sparsely populated farming and ranching regions; isolated mountain, desert and mining communities; and Native American reservations. Most members serve fewer than 3,000 access lines in the aggregate, and fewer than 500 access lines per exchange.

WTA members have made considerable efforts to install broadband facilities and to make advanced services available to their rural customers. The typical WTA member presently offers broadband service to 70 percent or more of its customers. The speeds of these predominately DSL services range from 200-to-500 kilobits per second (“kbps”) to more than 10 megabits per second (“Mbps”). WTA members have been deploying fiber optic facilities further and further out into their “last mile” plant (in the West, this is more accurately characterized as their “last 20-to-50 miles” plant) in order to extend the range of their DSL services. Some are beginning to offer fiber-to-the-home (“FTTH”) service in their more densely populated core areas as they replace degrading copper loops with fiber optic facilities. However, WTA members still need to make major additional infrastructure investments to get broadband out to the distant and isolated “last 30 percent

or so” of their customers, as well as to upgrade their existing fiber-DSL facilities to extend the fiber component closer and closer to the home as bandwidth demands and capacity needs continue to increase.

The key to continuing broadband investment and deployment for WTA members and other rural telephone companies is a sufficient and reliable revenue stream. Most WTA members generate customer revenues much smaller than the national telephone industry average, and do not have ready access to most regional and national sources of equity and debt capital. Because of this and because they serve high-cost rural areas, WTA members presently rely upon federal high-cost support to recover a substantial portion of their investment and operating costs, to obtain and repay their investment loans, and to keep their monthly service rates at affordable levels.

## II

### **Definition of “Broadband” or “Advanced Telecommunications Capability”**

Whereas the terms “broadband” and “advanced telecommunications capability” have been used interchangeably, WTA finds “broadband” to be the more flexible and useful term. Flexibility is particularly advantageous in a world where both service options and transmission speeds are increasing rapidly.

WTA envisions a future where a host of emerging new services such as cloud computing, ultra high definition video, advanced videoconferencing and telepresence, real-time collaboration, smart appliances, home security, virtual sports, online gaming, virtual laboratories, telesurgery, remote diagnosis and medical imaging (as well as many services that have not yet been imagined) will transform not only the telecommunications and information service industries but also the larger societies and economies in which

we live. Transmission speeds have been increasing rapidly, and will increase by further leaps and bounds to accommodate emerging broadband service options and demands. Whereas the Commission used a transmission speed of 200 kbps to define “advanced” or “broadband” services as recently as 2007,<sup>1</sup> that speed is considered way too slow by most end users today. The Commission, the Rural Utilities Service (“RUS”) and the National Telecommunications and Information Administration (“NTIA”) appear recently to have settled upon 768 kbps as the current minimum standard for “broadband” for stimulus program grant and loan-grant purposes. However, many users (rural as well as urban and suburban) are already demanding speeds within the 1.5 to 3.0 Mbps range, while some gated or planned communities have been constructed with FTTH facilities capable of transmission speeds approaching 100 Mbps. WTA believes that solutions to many of the economic, social, health and political problems currently plaguing the country may be found in improved technology and information, and that the implementation of such solutions may result in an even more rapid expansions of services and transmission speeds, very possibly requiring capacities in the Gbps range.

“Broadband” is a familiar yet flexible term that will give the Commission maximum discretion and maneuverability to respond and adjust to service and bandwidth needs that are likely to change substantially in the future and that may change at different paces in different portions of the country. In contrast, “advanced telecommunications capability” is limited by: (a) a statutory definition that may not keep pace with future changes and conditions (for example, as services other than “high-quality voice, graphics, and video telecommunications” emerge); (b) an emphasis upon telecommunications in a

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<sup>1</sup> *Notice of Inquiry (Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans)*, GN Docket No. 07-45, FCC 07-21, released April 16, 2007, at par. 12. Comments of the Western Telecommunications Alliance, GN Docket No. 09-137, September 4, 2009

world where telecommunications and information services are converging more and more; and (c) a prescription for technological neutrality in a world where capacity, scalability, reliability and security needs may require significant or predominant reliance upon certain technologies (for example, fiber optic facilities) in substantial portions of the network.

Given that broadband technologies and services are still in the relatively early stages of their development, WTA recommends that the definitions and requirements for “broadband” adopted by the Commission in this and other proceedings take the form of flexible guidelines (rather than specific or rigid prescriptions) that can evolve over time in response to customer demands, service options, technological advances and economic constraints. Transmission speed is a familiar and practicable criterion that can and should be defined flexibly in terms of ranges or tiers that are broad enough to encourage carriers to increase capacity in response to increasing consumer demand but that do not unduly penalize carriers that have less aggressive customer demand (including lower take rates) or that are subject to economic constraints that limit the pace of their network upgrades. One possible approach is a definition of “broadband” in terms of a range of transmission speeds above a minimally acceptable floor – for example, the current definition might be “768 kbps and above.” This approach has the advantage of allowing carriers and service providers to remain compliant with “broadband” requirements and eligibility criteria in areas where customers remain satisfied with lower transmission speeds and/or where higher transmission speeds are not yet technically or economically feasible, while not limiting or slowing the deployment of increased transmission speeds in other areas.

WTA's concern here is primarily with definitions and requirements for "broadband" that may be used for purposes other than FCC Form 477 data collection. It does not object to the Commission's continued collection of FCC Form 477 data in multiple reporting tiers.

WTA further recommends that the Commission define "broadband" differently for different types of transmission facilities. In particular, the minimum transmission speeds and other criteria for wireline "broadband" services and terrestrial wireless "broadband" services should reflect the differing uses, capabilities and capacities of these technologies.<sup>2</sup> Notwithstanding stories about "cutting the cord," the substantial majority of American businesses and households continue to subscribe to both wireline and wireless services. Wireline and wireless "broadband" services presently utilize different equipment and technologies, and are used by customers for different purposes and at different times and places. For example, a businessman may use wireline broadband services at work and at home, and wireless broadband services while traveling and commuting and while attending the activities of his children on the weekend. These differences, as well as the trade-offs that customers are willing to make regarding speed, capacity, file size, screen size and mobility,<sup>3</sup> mean that wireline and wireless facilities and services play separate but complementary roles now and are most likely to continue to do so in the future. As a result, wireline "broadband" and wireless "broadband" standards should be defined separately in recognition of their differing roles and characteristics.

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<sup>2</sup> WTA does not believe that there is any significant dissent from the proposition that satellite wireless broadband services are yet another separate class of services and facilities for which "broadband" needs to be defined differently.

<sup>3</sup> Put another way, few people wish to watch the Super Bowl or high-definition videos on their cell phones, or to lug around big screen monitors in their vehicles.

The most efficient and effective approach to achieve the ultimate wireline broadband network is to extend fiber optic facilities further and further out into “last mile” networks until the remaining copper and hybrid fiber-DSL distribution facilities are upgraded and replaced with fiber-to-the-home (“FTTH”). While the initial conversion will entail substantial investment, the good news is that completed FTTH networks will provide reliable, very high capacity, scalable and long-lasting telecommunications pipes. The scalability of fiber is extremely important for the design and implementation of a nationwide broadband network, because it prevents fiber networks from suffering short-term or long-term quality declines (much less to be rendered obsolete) as service options expand and bandwidth demands increase. Fiber lines have the key advantage of being able to be upgraded to higher and higher bandwidths and transmission speeds at minimal incremental cost merely by changing the electronics at their end points. In addition, buried fiber lines are very safe and secure from both natural and man-made disasters and disruptions, and have normal useful lives that exceed 25-to-30 years. Finally, fiber networks enhance the capacity and quality of wireless “broadband” services by providing backhaul functions as well as by handling substantial volumes of traffic intended for fixed locations, thereby allowing wireless carriers to focus upon the carriage of traffic that is inherently mobile in a much more efficient and less congested manner.

WTA also recognizes the importance of the “middle mile” facilities that connect rural telephone companies and other carriers and Internet service providers to the Internet backbone. Particularly in the West, some WTA members and other carriers are located hundreds of miles from that backbone. As a result, the reliability, capacity and cost of their “middle mile” transport can significantly impact the quality and affordability of

their broadband service offerings. Because these impacts may become more and more adverse for rural carriers as the conversion to a broadband network proceeds, WTA and other rural telephone industry representatives are exploring potential regulatory and universal service solutions. WTA expects that recommendations will be submitted to the Commission at a later stage of the captioned proceedings.

Finally, WTA members believe that monthly broadband service rates are currently the primary factor affecting the adoption and utilization of broadband services by their customers. Broadband services are not presently supported by the Commission's Lifeline and Link-Up programs, and benefit only indirectly and incidentally from other Universal Service Fund ("USF") programs. If existing broadband service rates can be reduced due to modification of the Commission's Rules to provide direct and sufficient USF support for broadband, WTA members expect to see their broadband take rates increase significantly, particularly as the current economic downturn eases. Some WTA members have noted lower broadband take rates by their elderly and retired customers, but this "trend" appears to be changing (and can be expected to change further) as more and more computer-literate "baby boomers" retire and enter the ranks of the elderly. Most WTA members have not noticed significantly different broadband take rates among their minority customers, persons with disabilities, individuals living on Tribal Lands, or individuals with different levels of education.

### III

#### **Definition of “Availability” of Broadband**

WTA recommends that “availability” of broadband be defined to mean that a customer can obtain “broadband” service at his or her residence and/or business, at a minimally acceptable transmission speed and at an affordable monthly rate.

At this time, the key “availability” factor is proximity to network facilities from which “broadband” service can be obtained if a customer desires such service. The Commission and other federal and state agencies are currently planning or conducting studies, mapping projects and data collections to determine the nature and extent of existing broadband facilities and services. For example, the Commission’s recently revised FCC Form 477 has narrowed the focus for reporting the presence of broadband facilities and providers from ZIP Codes to more granular Census Tracts, and also requests significantly more disaggregated subscriber data for multiple reporting tiers based upon transmission speeds. In addition, a number of national and state broadband mapping projects are in various stages of planning, completion and modification. The Commission and industry representatives need to assess the accuracy, completeness and usefulness of this wealth of new broadband deployment and usage data as significant portions of it are collected, processed and reported. If it is effective in identifying areas that are “unserved” or “underserved” from a broadband standpoint, the Commission and agencies will then be able to employ appropriate financial and regulatory incentives (such as Universal Service Fund support, grants, loans, loan guarantees and service quality standards) to encourage and enable the requisite additional broadband infrastructure investments.

As progress is made with respect to proximity to broadband facilities, the affordability of broadband services will become an increasingly important concern. WTA understands “affordability” as comprising the following two interrelated issues: (a) whether the rates for “broadband” services in a particular high-cost rural area are reasonably comparable to the rates for substantially similar “broadband” services in urban areas; and (b) whether particular urban and rural households can pay the applicable monthly service rates for “broadband” service. In brief, these are Universal Service issues, and like the proximity issue, will require the continued existence of sufficient high-cost and low-income USF programs to provide support for broadband facilities and rates.

WTA believes that consumer broadband demand studies can be useful to the Commission and the industry in developing broadband infrastructure deployment programs and incentives, but does not believe that such studies can be conducted accurately and effectively as part of the FCC Form 477 data collection process. Demand studies are most efficiently conducted by professional marketing firms that know how to select representative samples, prepare appropriate questionnaires (that include readily understandable questions regarding the broadband services and transmission speeds desired by customers and the rates they would be willing and able to pay for them), and conduct survey interviews in a manner designed to elicit accurate information. Whereas both large and small carriers have marketing departments that are fully capable of selling their actual services, relatively few of such carriers are competent to conduct valid scientific demand surveys. It is unlikely that the Commission would receive much useful broadband demand information by adding demand data requirements to the FCC Form

477 process. It is far more likely that such requirements would lead to significant data aggregation problems, confidentiality disputes, and confusion among surveyed consumers regarding the characteristics and prices of the broadband services that are actually available in their communities. If and when the Commission wants accurate broadband demand information, it would make the best use of its resources by commissioning professional nationwide or regional broadband demand surveys, or by working with nonpartisan entities (for example, the Pew Research Center's Internet & American Life Project) to design surveys and studies capable of developing accurate and usable demand information.

Finally, in most of the rural areas served by WTA members, the primary community anchor institutions and publicly available Internet access points are schools and libraries. Virtually all such schools and libraries currently have broadband service, either via arrangements with the WTA member or another local provider or via the Universal Service Administrative Company's ("USAC's") Schools and Libraries Program.

#### IV

##### **Trends in Developing Technologies**

WTA reiterates that fiber optics, and particularly FTTH, is the pre-eminent technology capable of meeting the nation's growing broadband service needs during the foreseeable future. In the words of Professor Susan Crawford, a member of President Obama's National Economic Council, "[s]imply put, a digital economy requires fiber."<sup>4</sup> She has praised, in particular, the plans announced by the Australian government in April

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<sup>4</sup> David Hatch, "Obama adviser looks at U.S.-built broadband network," *Congress Daily* (May 26, 2009). Comments of the Western Telecommunications Alliance, GN Docket No. 09-137, September 4, 2009

2009 to construct a national broadband network that will extend 100 Mbps fiber optic facilities to 90 percent of Australian homes and schools.<sup>5</sup> The Australian project (which will serve a country that is very comparable to the United States in significant geographic, economic and social respects) is expected to take eight years and to cost \$31 billion.<sup>6</sup> Professor Crawford also noted that Singapore is building a national fiber optic network; that Great Britain and the Netherlands are also considering the option; and that such national fiber networks “can deliver massive social and economic benefits.”<sup>7</sup>

In comparing potential broadband technologies, fiber optic networks have the preeminent advantages of virtually unlimited capacity and scalability in both the short and long term. Fiber has the potential of handling not only the 10-to-100 Mbps transmission speeds that will be demanded by increasing numbers of customers during the next few years, but also the Gigabit per second and greater speeds that are likely to be demanded within a decade or so as next-generation broadband services (e.g., cloud computing, telepresence, smart homes, telesurgery and virtual laboratories) are deployed.

Whereas fiber optic networks are costly to deploy initially, they are much more economical to operate, adjust and upgrade in the long run because of their ready scalability. Fiber speeds can be increased readily and rapidly from tens of Mbps to hundreds of Mbps to tens and hundreds of Gbps as service needs change, and such modifications can be accomplished at minimal incremental cost merely by switching out the electronics at each end.

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<sup>5</sup> The remaining 10 percent of Australian homes would get 12 Mbps wireless broadband connections. This would not be “reasonably comparable” service under Section 254(b)(3) of the Communications Act.

<sup>6</sup> Ryan Singel, “Aussies Announce \$31B National Broadband Network” (<http://wired.com/epicenter/2009/04/aussies-announce/>) (April 7, 2009). The remaining 10 percent of Australian homes and schools will be served by 12 Mbps wireless connections.

<sup>7</sup> Hatch, *op. cit.*

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Fiber networks (and particularly buried fiber facilities) have a proven record of reliability, durability and safety. Aside from an occasional line cut, both inter-city fiber trunks and fiber loop plant have proven records of service with minimal outages and maintenance. There are substantial numbers of fiber routes in existence today that have been operating reliably for 10-to-20 years, and that are expected to continue operating for useful lives that should reach or exceed 25-to-30 years. In an increasingly dangerous world, buried fiber optic facilities are less vulnerable to sabotage, terrorist attack and severe weather. They are also environmentally friendly, and have virtually no perceptible adverse impacts upon scenic beauty or wildlife.

Finally, fiber optic networks provide backhaul services that enable wireless networks to be much more efficient and effective. Wireless "broadband" networks can and should play a significant complementary role by providing mobility options in business districts, shopping malls, restaurants, coffee shops, parks, campuses, highway rest areas and other places where people congregate and need connections for their portable broadband devices. By transporting the large amounts of broadband traffic between fixed locations as well as by providing reliable and high-capacity backhaul facilities, fiber networks can reduce wireless congestion and enable wireless broadband service providers to focus their coverage and capacity upon hot spots and other heavily trafficked areas where mobility needs and usage are the greatest.

## V

**Reasonableness and Timeliness of Broadband Deployment**

In assessing the reasonableness and timeliness of broadband deployment in rural areas, the Commission needs to distinguish between: (a) rural areas served by rural telephone companies; and (b) rural areas served by larger carriers.

**A. Rural Telephone Company Service Areas**

As this Commission, the Joint Boards and state commissions are well aware, WTA members and other RLECs have an excellent record of upgrading their networks to bring existing broadband services to their rural customers. However, major additional infrastructure investments need to be made to enable RLECs to keep up with burgeoning demands for more and faster broadband services, and to provide their rural customers with affordable access to broadband facilities and services reasonably comparable in type, quality, speed and price to those available in urban areas.

During the 1990s when local exchange carriers began to deploy “broadband” facilities, it was thought that asymmetrical digital subscriber line (“ADSL”) technology would constitute a feasible and affordable transition from the traditional copper wire network to a higher bandwidth network that would also furnish advanced information and video services. Initially, it was estimated that ADSL would be effective only for the relatively small portion of rural customers located within about 18,000 feet from central office facilities. Since that time, RLECs have experimented with ADSL and other DSL technologies and have modified and upgraded their networks in order to offer broadband services to customers located further and further from their central offices. Primarily by extending fiber optic trunks further and further out into their loop plant, RLECs today are

offering ADSL and higher-speed fiber-DSL services such as symmetrical digital subscriber line (“SDSL”), high data rate digital subscriber line (“HDSL”) and/or very high speed digital subscriber line (“VDSL”) to more and more of their rural customers. In addition, growing numbers of RLECs have been deploying FTTH services in portions of their rural exchanges.

The typical WTA member today is able to offer broadband service to 70 percent or more of its customers. The speeds of these predominately DSL services range from 200-to-500 kbps to more than 10 Mbps. Many WTA members have been deploying increasing amounts of fiber in their loop plant, and are beginning to offer FTTH service to customers as they replace deteriorating copper loops with fiber optic facilities in certain exchanges.

For example, one 850-access-line WTA member began offering DSL service within approximately 25 percent of its agricultural, grazing and timber-harvesting service area in 1996. Since 2000, the carrier has deployed substantial amounts of fiber optic cable in its loop plant, and by the end of the 2009 construction season will have converted 50 percent of its backbone loop distribution plant to fiber. By connecting DSL and other remote devices to its fiber plant, the WTA member is now able to offer hybrid fiber-DSL broadband service to virtually all of its customers (about half of whom take such service). The member is providing a high-speed fiber connection to a community health service, and is beginning the conversion of its rural customers to FTTH service.

A second WTA member, which serves over 6,000 customers in a more than 4,500-square-mile ranching area, has since 1995 used RUS loans and USF support to replace and upgrade its previous exchanges to an integrated broadband network

comprised of a single softswitch, fiber optic rings and trunk lines, and remote digital loop concentrators. Its upgraded network brought approximately 98 percent of the member's customers within 12,000 feet of a fiber optic facility, and enabled them to receive broadband service via a hybrid fiber-DSL connection. The member recently has been deploying FTTH in new subdivisions and replacing copper with FTTH in portions of its service area as the copper wears out. In one such town, the new FTTH plant attracted a high-bandwidth business that has brought over 170 new full-time and part-time jobs to the community.

A third WTA member serving a ranching and farming area is offering hybrid fiber-DSL services at speeds ranging from 384 kbps to 3 Mbps to virtually all of its customers, and has a take rate of almost 40 percent. Its DSL services are used extensively by its ranching and farming customers to monitor weather and prices, to purchase supplies and sell their products, and to keep abreast of developments that can affect their businesses. The member is aware that residents of neighboring exchanges operated by a large carrier are increasingly visiting its customers to use their broadband services.

Other WTA members report that the availability of their broadband services has been a crucial aspect in retaining and fostering businesses in their service areas, as well as in attracting new businesses and economic development. Supported businesses vary widely, and include insurance claim processors, microbiology firms, kennels, real estate companies, horticulture firms, design engineers, document conversion businesses, utility monitoring services and software developers.

The DSL services of WTA members also support a variety of governmental and educational functions, including enabling local government agencies to operate and update their own websites as well as to access federal, state and county programs; and providing parents and students with access to local schools and teachers, as well as to distance learning, home schooling and college application and scholarship opportunities.

Whereas the record of “broadband” deployment by WTA members and other RLECs is impressive to date, substantial additional infrastructure investment is needed to keep abreast of the growing and evolving broadband service demands in Rural America. Section 254(b)(3) of the Communications Act requires residents of rural and other high-cost areas to have access to telecommunications and information services (including advanced services) that are reasonably comparable to those available in urban areas at rates that are reasonably comparable to urban rates. Such reasonably comparable broadband facilities, services and rates will require substantial additional RLEC network investment: (1) to deploy fiber optic facilities closer and closer to the home (in the 10, 20, 30, 40 and even 50-mile loops commonly found in the rural areas of the West) as existing DSL services are upgraded to higher speeds and ultimately to FTTH; and (2) to reach the 30 percent or so of customers at the outer (and often isolated and rugged) edges of RLEC networks that still lack access to broadband service.

### **B. Rural Service Areas of Larger Carriers**

At present, the major portion of rural exchanges that remain “unserved” or “underserved” for broadband purposes appear to be rural exchanges of large and mid-sized ILECs. Although these companies have substantially greater financial resources and substantially greater access to capital markets than RLECs, they also have

substantially greater demands upon their not-unlimited resources by lenders and bond holders, by current and prospective stockholders, and by existing and potential investments and business opportunities in a variety of domestic and international markets.

Both this Commission and state commissions have long struggled with the difficult and complex problem of developing effective and financially feasible programs and incentives for the upgrade of networks and services in these rural areas. Limited USF support and state service quality obligations have been tried with modest success. Pilot broadband construction grant programs, and the disaggregation and targeting of costs and USF at the wire center level in large study areas have also been proposed.

WTA does not have a complete solution, but notes that some Commission policies and regulations – particularly the “parent trap” provisions of Section 54.305 of the Rules, the difficulties and delays in obtaining waivers of the Part 36 study area boundary freeze, and the identical support rule – have had the unintended consequence of discouraging RLECs, wireless carriers and wireline competitive local exchange carriers (“CLECs”) from acquiring or overbuilding the low-priority rural exchanges of larger carriers and bringing broadband services to the unserved and underserved customers thereof.

During the late 1980s and early 1990s, RLECs were able to purchase a substantial number of rural exchanges from the Regional Bell Operating Companies and other large carriers.<sup>8</sup> Virtually all of these acquired exchanges were upgraded to improve their telecommunications service and have been subsequently upgraded to provide access to

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<sup>8</sup> See e.g. Chautauqua & Erie Telephone Corporation and New York Telephone Company, 7 FCC Rcd 6081 (1992); US West Communications, Inc and Triangle Telephone Cooperative Association, Inc. et al., 9 FCC Rcd 202 (1993); Nevada Bell and Oregon-Idaho Utilities, Inc., 9 FCC Rcd 5236 (1994); and US West Communications, Inc. and Range Telephone Cooperative, Inc. et al., 9 FCC Rcd 4811(1994).  
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broadband services. However, as the Commission became concerned with the growth of the USF in the mid-1990s, it began to make it more difficult and time-consuming to obtain Part 36 study area boundary waivers and also to impose conditions minimizing additional USF support upon those study area waivers that it did grant. During the implementation of the 1996 Act, these study area waiver conditions morphed into the “parent trap” rule. Today, petitions for study area waivers often languish before the Commission for 6-to-12 months or more, thereby delaying and disrupting transactions and destroying incentives for larger carriers to sell their lower-priority rural exchanges to RLECs willing to purchase and upgrade them. Likewise, the complicated accounting procedures of the “parent trap” and safety valve support rules impair the ability of RLECs to obtain the financing necessary to purchase and upgrade such exchanges.

Similarly, the identical support rule has had the unintended consequence of discouraging wireless carriers and wireline CLECs from overbuilding the rural exchanges of larger carriers because the portable USF support available in such exchanges is very limited or non-existent.

WTA recommends that the Commission streamline the processing of study area boundary waivers and modify the Section 54.305 “parent trap” rule and related USF regulations (for example, the safety valve support rules) to encourage larger ILECs to sell their unwanted rural exchanges to RLECs and to enhance the ability of RLECs to obtain the financing to purchase and upgrade such exchanges. Although these changes will not fully resolve the problem of bringing broadband to the rural service areas of larger ILECs, they will reduce its scope and make tangible progress toward reasonable and timely broadband deployment in such areas.

## VI

**Actions to Accelerate Broadband Deployment**

The predominant barrier to broadband deployment is money. It is purely and simply very expensive to construct fiber, hybrid fiber-DSL and wireless broadband networks to serve rural areas. As detailed above, fiber networks are very expensive to deploy initially, but thereafter can be upgraded at minimal incremental cost by changing the electronics at the originating and terminating points. In contrast, wireless networks are somewhat less expensive to construct initially, but can be very expensive to modify, replace and/or reconfigure to increase reliability and transmission capacity if and when that becomes technically feasible.

Some WTA members and other RLECs have applied for the Broadband Technology Opportunities Program (“BTOP”) grants being administered by NTIA and/or the Broadband Initiatives Program (“BIP”) loans and loan-grant combinations being administered by RUS. If obtained, such funds will enable WTA members and other RLECs to extend their fiber optic networks further and more rapidly into their service areas and to reduce their fiber deployment costs. However, even if RLECs receive a significant portion of the \$4.7 billion of NTIA grants<sup>9</sup> and \$2.5 billion of new RUS broadband funding, these amounts will not be sufficient to complete broadband deployment in RLEC service areas.

Whereas federal grants and loan-grants are welcome and useful, the primary means for completing and upgrading the RLEC broadband networks is likely to continue

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<sup>9</sup> Actually, approximately \$810 million of the NTIA grants are reserved for broadband service adoption programs (\$250 million), public computing center upgrades (\$200 million), audits (\$10 million) and broadband inventory mapping (\$350 million).

to be private investment. Since the implementation of the 1996 Act, RLEC investment in telecommunications infrastructure has been encouraged and enabled has been encouraged and enabled by USF support and by access revenues. In particular, the USF programs for rural carriers [High-Cost Loop Support (“HCL”), Local Switching Support (“LSS”) and Interstate Common Line Support (“ICLS”)] have been a major success story. These programs have provided critical assurances of cost recovery and loan repayment that have enabled WTA members and other RLECs to obtain the equity and loan financing necessary to construct, operate, maintain and upgrade their circuit switched telecommunications networks. USF support has permitted RLECs to install and operate digital switches and soft switches, to implement Signaling System 7, to deploy and extend fiber optic and DSL facilities deeper and deeper into their networks, to bury lines to limit weather damage and outages, to provide local or centralized equal access, to offer custom calling options, to comply with Emergency 911 (“E911”) and Communications Assistance for Law Enforcement (“CALEA”) responsibilities, and to provide access to the Internet and information services. Without predictable and sufficient USF support, small RLECs with limited financial resources and limited access to capital markets would not have been able to invest in the infrastructure necessary to furnish rural customers and service areas with quality and affordable telecommunications and information services (including existing hybrid fiber-DSL facilities) that are reasonably comparable with those available in urban areas.

Completion by RLECs of the transition to broadband networks comparable to those in urban areas will require continued predictable and sufficient support from USF mechanisms. Because fiber optic and DSL facilities provide supported tele-

communications services as well as emerging broadband services, many RLECs have been able to make progress extending fiber and DSL into their loop distribution plants under the existing USF mechanisms. However, as the focus shifts to completion of predominately fiber optic broadband networks, the USF mechanisms for RLECs and rural wireless carriers will need to be modified. Access charges and other forms of intercarrier compensation will also need to be modified in connection with the transition to a broadband network.

As the Commission is well aware, modification of USF and intercarrier compensation mechanisms has been an extremely complicated and contentious process. Rather than making specific recommendations at this time, WTA would prefer to discuss these issues with other industry representatives in the hope of negotiating a broad-based industry compromise. If (as in the past) that approach does not bear fruit, WTA will submit proposals – either by itself or as part of a smaller group – for modifications that will permit the continuation of sufficient USF and intercarrier compensation mechanisms in the broadband world.

## VII

### Conclusion

WTA members have been leaders in the deployment of fiber-DSL loops and the provision of current broadband services in their rural service areas. They look forward to the challenges: (a) of furnishing the emerging and future broadband services that are transforming their industry and their nation, and (b) of continuing to upgrade their networks to offer broadband services at quality and rate levels that will remain reasonably comparable to those available in urban areas. If WTA members and their

capital sources have reasonable assurance that they can maintain sufficient revenue streams, they are ready and willing to complete the conversion of their prior copper networks to the FTTH networks that offer the virtually limitless capacity, scalability, reliability and durability needed to serve as the foundation for the desired National Broadband Network.

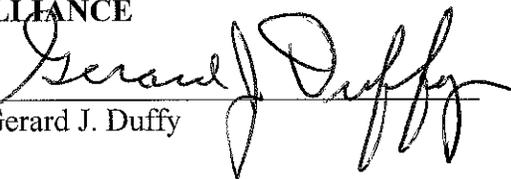
Among the actions the Commission can take in this and related proceedings to encourage and accelerate the deployment of broadband throughout the United States are: (1) define “broadband” in the form of flexible guidelines that can evolve over time in response to customer demand, service options, technological advances and economic constraints; (2) employ separate definitions, minimum transmission speeds and other criteria for wireline broadband services and wireless broadband services in recognition that they are complementary services that will be purchased and used by most households and businesses for significantly different purposes; (3) recognize the critical role of fiber networks in furnishing high capacity, scalable, reliable and durable broadband services to households, businesses and other fixed locations, as well as in supporting wireless broadband networks and minimizing congestion on them; (4) coordinate ongoing FCC Form 477 data collection and support pending broadband mapping efforts, and use the resulting substantial amounts of existing and accumulating data to identify “unserved” and “underserved” areas; (5) consider the use of professional broadband demand surveys to improve the knowledge base for evaluating broadband take rates and affordability issues (but do not include broadband demand survey requirements in the FCC Form 477 reports); (6) ensure the continued provision of the sufficient USF support and intercarrier compensation revenue streams needed by RLECs to finance the completion of the fiber-

DSL and FTTH upgrades required to offer their rural customers broadband services and rates reasonably comparable to those available in urban areas; and (7) eliminate certain rules and procedures (for example, the Section 54.305 “parent trap” provisions, lengthy Part 36 study area waiver processing periods, and the identical support rule) that have had the unintended consequence of hindering small carriers from bringing broadband services to unserved and underserved customers residing in various low-priority rural exchanges of larger ILECs.

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Respectfully submitted,

**WESTERN TELECOMMUNICATIONS  
ALLIANCE**

By   
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