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

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

COMMENTS OF THE BENTON FOUNDATION

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SUMMARY

Broadband is now, undeniably, the essential communications medium of the 21st century. The Commission should adopt universally-available and affordable broadband as a national communications goal and make broadband an explicit component of the federal Universal Service Fund. Support for ubiquitous, affordable broadband is 1) essential to education, public health, and public safety, 2) consistent with the public interest, convenience, and necessity, and 3) required by the Telecommunications Act of 1996.

In its Recommended Decision issued in November 2007, the Federal-State Joint Board on Universal Service recommended that the Commission create a new Broadband Fund to facilitate construction of new broadband networks in unserved and underserved areas of the country. The Commission should adopt the Joint Board recommendation. We can no longer afford to rely on market forces alone to bridge the gap in broadband access.

However, the $300 million a year proposed by the Joint Board misses the mark: America's broadband challenge is much more significant as is the need for the Commission to act quickly. While the Universal Service Fund has largely achieved its goal of improving analog telephone penetration rates, the goal of ensuing affordable broadband access to all Americans can't be achieved without moving the focus of the program more directly towards broadband. If the broadband deployment cost is estimated at $1000 per line (a potentially low estimate), a $300 million per year fund would add a maximum of 300,000 more broadband connections -- increasing the nation's penetration level only minimally.

The commitment to universal broadband must ultimately extend to all Americans, especially those living in low-income households. Every American should have the ability to compete and win in the 21st century economy with broadband. In the last century, America became an economic powerhouse by ensuring that every American had equivalent tools for its time. Congress pursued ideals such as expanding universal access to electricity, providing basic phone services, and strengthening education as the key enablers of American empowerment in yesterday's economy. The equivalent equalizer in today's digital economy is universal access to broadband. It is not only a tool for communications and an enabler for every other future digital communication—from TV to telephone service—it's essential for learning, working, and thriving.

Although the Commission must never forget that the burden of universal service falls on consumers, it may be too costly for the US to not invest in broadband infrastructure and affordability. Any possible added burden on consumers of telecommunications services must be weighed against the potential benefit from increased broadband subscribership. Connected Nation estimates that accelerated broadband take-up could mean $134 billion per year in total direct, positive economic impact for the United States.

Merely extending universal service support to broadband, without a commensurate decrease in analog support, could indeed increase costs to consumers who can't afford to pay more. Instead, broadband support should be phased in over a limited timetable while phasing out support for analog service, spurring new competition, and enabling providers to offset the increased cost through increase subscriber services. In fact, continued subsidization of outdated analog technologies may create disincentives for

the digital transition we seek to accelerate. As has been done with digital television, the goal must include not only a transition to newer, better digital services, but must also include a plan for moving away from older and limited analog services. A complete transition to digital networks is not only essential for our economy and our consumers, it is essential for the future financial success of rural telephone companies as well.

Although the Joint Board recommends that the primary objective of the Broadband Fund should be the "expansion of geographic coverage" and "targeted for capital spending for new construction in unserved areas," the Commission should recognize that these facilities will have to be maintained and upgraded to keep up with evolving definitions of universal service and broadband. The Joint Board recommends that the Commission seek comment regarding “under-served areas that may be receiving marginal or unacceptable levels of… broadband service." The Commission should recognize in a quickly-evolving telecommunications environment, the bar for "marginal" and "unacceptable" will always be moving. Networks, especially in high-cost areas, will need continuous maintenance and upgrade in order to ensure that consumers have access to not just the services offered over broadband today - but the services of tomorrow only dreamed of today.

Modernizing the Universal Service Fund for broadband isn't only about patching holes in a safety net program. It's time to move beyond thinking about universal service as merely a safety net and begin thinking of it more as a trampoline that can catapult us into a new world of opportunity. A broadband-driven global economy demands a system of supports that not only catch people when they fall, but can help propel all of us into the new jobs, careers, and opportunities that a digital future makes possible.

Our nation's commitment to ubiquitous and affordable communications has never been more important than now. We are only on the threshold of an information technology revolution if we preserve and strengthen our guarantee of universal, affordable communication access for all Americans. For these reasons, the Commission must adopt the Joint Board’s proposal to create a Broadband Fund, and create a specific timetable and transition plan to transform the fund and the nation to an entirely digital communication infrastructure.

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I. INTRODUCTION

Pursuant to the Notice of Proposed Rulemaking adopted by the Federal Communications Commission ("Commission") on January 16, 2008 seeking comments on ways to reform the high-cost universal service program,[1] the Benton Foundation[2] hereby submits these comments. Specifically, the Commission seeks comment on the recommendation of the Federal-State Joint Board on Universal Service ("Joint Board") regarding comprehensive reform of high-cost universal service support.[3] The Joint Board recommends that high-cost universal service support in the future be delivered through three distinct "funds," each with separate distribution mechanisms and separate funding allocations. The Broadband Fund would be tasked primarily with facilitating construction of facilities for new broadband services to unserved areas.

Congress intended for the Commission to use the Universal Service Fund (USF) to make advanced telecommunications technology available to all Americans, and directed the Commission to modernize universal service in step with technological advances. The Telecommunications Act of 1996[4] ("Act") explicitly tasks the Joint Board, from time to time, with recommending to the Commission modifications in the definition of the services that are supported by Federal universal service support mechanisms.[5] The Act also recognizes that universal service is an evolving level of telecommunications

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[1] *In the Matter of High-Cost Universal Service Support Federal-State Joint Board on Universal Service*. (WC Docket No. 05-337 and CC Docket No. 96-45; FCC 08-22) Released January 29, 2008 ("Notice").
[2] The mission of the Benton Foundation is to articulate a public interest vision for the digital age and to demonstrate the value of communications for solving social problems. Benton is a longtime supporter of research on universal service and the potential of high-speed Internet connections for improving Americans' lives.
[3] *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) ("Recommended Decision").
[4] Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996). The 1996 Act amended the Communications Act of 1934. 47 U.S.C. § 151, et seq. ("Act").
[5] *See* 47 U.S.C. § 254(c)(2).

services that should be revised periodically, taking into account advances in telecommunications and information technologies and services.[6] The Joint Board recommends the Commission revise the current definition of supported services to include broadband Internet service.

America is on the verge of a vast new broadband-driven digital transformation that promises to make life more livable, businesses more productive, jobs more plentiful, and the Internet more accessible. However, at the dawn of this Digital Age, those who could benefit the most from this economically empowering technology are also those most likely to be left without access because of where they live or how much money they make.

Broadband is not only essential for the country's future economic success, it is also becoming vital to personal success. Broadband will soon be an indispensable communication technology affecting the way we learn, the way we work, and the way we communicate.

Our nation's commitment to ubiquitous and affordable communications has never been more important than now. We are only on the threshold of an information technology revolution if we preserve and strengthen our guarantee of universal, affordable communication access for all Americans.

[6] *See* 47 U.S.C. § 254(c)(1).

II. THE COMMISSION SHOULD ADOPT UNIVERSAL BROADBAND AS A NATIONAL COMMUNICATIONS GOAL

In the Recommended Decision, the Joint Board recommends that the "nation's communications goals include achieving universal availability of mobility services (defined as wireless voice), universal availability of broadband Internet services, and voice services at affordable and comparable rates for all rural and non-rural areas."[7] The Joint Board recommends the Commission revise the current definition of supported services to include broadband Internet service.

Adding broadband to the list of services eligible for support under Section 254, the Joint Board concludes, will have several beneficial results:[8]

- effectively declaring, as an explicit national goal, making broadband Internet service available to all Americans at affordable and reasonably comparable rates;
- legitimizing existing support mechanisms that already provide support for broadband-capable facilities; and
- reducing any tendency of existing support mechanisms to provide incentives for broadband deployment only in selected areas.

The Benton Foundation urges the Commission to adopt this recommendation. As the Joint Board concludes, Americans have made a collective judgment that broadband is an important service.[9] Broadband is now, undeniably, the essential communications medium of the 21st century. According to a survey of U.S. and Canadian consumers, all demographic segments rated broadband "the communication service they can least live

[7] Recommended Decision at ¶ 4.
[8] Recommended Decision at ¶ 57.
[9] Recommended Decision at ¶62

without."[10] Soon broadband will offer the most affordable conduit for making phone calls to anywhere in the world, deliver the video and audio programming we want where and when we want it, and allow us to remain connected to friends, family and co-workers -- even when we leave the home or office. All of our basic communications -- television, radio, telephone, e-mail, and Internet -- will soon all require a single broadband connection. Lack of access to the tool doesn't just mean being disconnected from the Internet, it means being disconnected from the economy, from society, and from the benefits of the digital age.[11] Broadband has become so essential, that 81% of respondents in a recent survey think America should use some of the current Universal Service Fund to expand rural broadband. [12]

The Joint Board concludes that broadband Internet service satisfies the statutory criteria for inclusion on the list of supported services under the Universal Service Fund ("USF").[13]

A) Broadband is essential to education, public health, and public safety

Broadband Internet service, the Joint Board finds, is:

- essential to education, public health, and public safety.;[14]

[10] In-Stat (http://www.in-stat.com). See also Edison Media Research. Media Perceptions from 2002 to 2007. June 2007.
[11] For example, the Office of Management and Budget and the Government Accountability Office have both announced they will phase out their signature paper products. See Barr, Stephen. "OMB, GAO to Go Digital on Key Reports." Washington Post. January 24, 2008. Also, for the growing importance of the Internet on political participation, see Charles, Deborah. "YouTube role grows as U.S. election nears." Reuters. (July 20, 2007). And "YouTube's political parodies and sports replays on ESPN.com are little more than empty dreams to thousands of Illinois computer users who still limp along with dial-up connections because they cannot get low-cost broadband from their phone company." From Van, Jon. "AT&T to extend DSL to more customers ; Thousands can't get low-cost broadband." Chicago Tribune. (July 20, 2008).
[12] New survey finds gaps in U.S. broadband. Tellabs. (March 20, 2008). See http://www.tellabs.com/news/2008/nr032008.shtml
[13] *See* 47 U.S.C. § 254(c)(1).
[14] The Internet is increasingly used for education, in significant part by sharing materials and audio and video streams in educational environments, as well as through informal educational content such as online

- subscribed to by a substantial majority of residential customers;[15]
- being deployed in public telecommunications networks by telecommunications carriers.[16]

Benton Foundation agrees with the Joint Board's analysis for the following reasons:

1. Broadband is essential to education.

A variety of studies demonstrate how broadband has become essential to education:

- Broadband is essential for transforming the learning experience, improving inter-institutional collaboration, achieving new potentialities, improving efficiencies in current delivery systems, and widening access to education in a cost-effective way. [17]
- Likewise, the Cambridgeshire Schools Broadband Project provides early evidence of the impact that broadband can have on teaching and learning.[18] In particular, the following benefits were identified:

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news services that can be customized to reflect the user's interests. The Internet is also increasingly used by health care professionals, such as for sharing medical records and diagnostic information. Moreover, many residential users get health care advice from the many medical compendiums that are available online. In all of these applications, classical dial-up Internet access is marginally useful, and is often inadequate.

[15] More than half of the households in the United States currently subscribe, and at least one high speed provider is providing service in 99.6 % of the zip codes in the country. In the Jt Brd's view, Americans have made a clear judgment, consistent with the rest of the developed world, that broadband Internet access is an important component of modern life.

[16] Millions of customers today purchase DSL service, the version of broadband Internet service that is customarily provided through copper telephone networks. Others purchase broadband Internet access through their wireless carriers.

[17] from Opportunities and Barriers to the Use of Broadband in Education. 2003. Broadband Stakeholder Group http://www.broadbanduk.org/component/option,com_docman/task,doc_view/gid,47/

[18] The project was based around visits to 42 Cambridgeshire schools in late 2002 where the purpose was to produce a snapshot of the situation in broadband schools and to register any evidence of early impact on teaching and learning.

- Students made more use of the Internet for their own research projects across the whole curriculum.
- Teachers were quick to locate relevant educational material on the Internet and made much more use of online resources for their lesson planning and incorporated media rich graphics and video content into their teaching.
- Teachers reported improvements in achievement, and levels of confidence and self esteem, particularly as students found that their problem solving strategies bore fruit more rapidly.

- Broadband is essential for higher education as well. From the Massachusetts Institute of Technology to the University of California at Berkeley, universities are posting course videos online and transforming the way teachers teach and students learn. A host of online classes, courses and universities have now emerged which may use of broadband's ability to deliver voice and video to broadband-enabled remote classrooms in people's homes.

2. Broadband is essential to public health.

As early as 1999,[19] Benton Foundation research found that by collecting new types of data and providing it to the myriad participants in the health care system—everyday citizens as well as professionals—we may be able to improve the quality of care without increasing costs or increasing the ranks of the uninsured. This pleasant prospect arises from three distinct trends, all of which involve the transmission of information. First, medical researchers are producing information that promises to improve the quality

[19] Conte, Chris. Networking for Better Care: Health Care in the Information Age. Benton Foundation. 1999.

of care. Second, policymakers are looking to inform consumers to use their buying power to produce a more responsive and effective health care system. And third, consumers themselves are using information to assume more direct responsibility for their own health. [20]

Key studies back up the vital link between broadband and public health:

- Policies designed to accelerate the use of broadband could save seniors more than $800 billion by reducing health care costs. [21] These benefits are as substantial as what the federal government is likely to spend on homeland security over the next 25 years, and under the right set of policies, could exceed what the United States currently spends annually for health care for all its citizens. A New Millennium Research Council analysis finds that accelerated broadband deployment could lower medical costs; lower costs of institutionalized living; and generate additional output by more seniors and individuals with disabilities in the labor force.

- Broadband has benefits for mental health patient too.[22] For people caring for a family member with a condition such as Alzheimers, broadband provides instant access to information about the condition, helping the caregiver understand the support available. Other mental health conditions such as depression, anxiety and

[20] Thomas R. Eng, et al., "Access to Health Information and Support," Journal of the American Medical Association, Vol. 280, No.15, 21 October 1998: http://jama.ama-assn.org/issues/v280n15/abs/jpp80018.html

[21] "Great Expectations: Potential Economic Benefits To The Nation From Accelerated Broadband Deployment To Older Americans And Americans With Disabilities," Robert E. Litan http://www.newmillenniumresearch.org/archive/Litan_FINAL_120805.pdf

[22] Benefits of broadband: Mental Health Conditions, http://www.btplc.com/age_disability/technology/broadband/benefits/mhealth.htm

schizophrenia are often very isolating, meaning it is difficult for people to leave their homes to meet other people or even to pick up the phone to speak to friends and family. Broadband facilities' use of web cameras at remote locations creates a visual link between patient and caregiver. Broadband brings into the home many services many people take for granted like shopping, banking and government services.

The Commission already recognizes that telehealth and telemedicine services provide patients in rural areas with access to critically needed medical specialists in a variety of practices, including cardiology, pediatrics, and radiology. To significantly increase access to acute, primary and preventive health care in rural America, the Federal Communications Commission dedicated over $417 million for the construction of 69 statewide or regional broadband telehealth networks in 42 states and three U.S. territories under the Rural Health Care Pilot Program (RHCPP).[23]

3. Broadband is essential to public safety and security.

a) Broadband is essential for Public Safety

In a recent recommendation to Congress, the Joint Advisory Committee on Communications Capabilities of Emergency Medical and Public Health Care Facilities (JAC) reported that by transitioning to broadband networks, emergency systems can be greatly improved:[24]

[23] Order in the Matter of Rural Health Care Support Mechanism. WC Docket No. 02-06. Adopted November 16, 2007.
[24] Joint Advisory Committee On Communications Capabilities Of Emergency Medical And Public Health Care Facilities. Report to Congress. February 4, 2008.

> Modern broadband communications networks and applications present an enormous opportunity to radically improve the manner in which emergency information is shared by health officials. Broadband services enable bandwidth-intensive information such as video, pictures, and graphics to be transmitted faster and in a morereliable and secure manner. When married with wireless technology, broadband enables the realtime, reliable transmission of bandwidth-intensive information in a mobile environment.

The transition, JAC finds, could save lives and money. JAC's first recommendation is that "Policymakers encourage the deployment of interoperable, standards-based broadband networks built on common and standardized Internet Protocols that can transmit bandwidth-intensive information such as video and graphics in a rapid, reliable, and secure manner." "Without ubiquitous broadband," writes Mark Lloyd in Science Progress, "our first responders could be crippled by the lack of effective communications in the event of a terrorist attack or natural disaster."[25] Lloyd concludes, "USF support for advanced telecommunications services are clearly needed if all Americans are to be connected. A renewed commitment and a national broadband policy that puts universal access at the top of the list are past due."

b) Broadband is essential for Homeland Security

In a post-9/11, post-Katrina communications environment, ubiquitous broadband is a national security imperative. The Internet, designed by the Defense Department to withstand a nuclear attack, has some inherent advantages over traditional communications systems in an emergency. The transformation to a decentralized broadband network with multiple paths between any two points and the Internet's packet of communication protocol enhanced network capabilities, eliminates many single points of failure, and enables the network to automatically and efficiently work around failures.

[25] Lloyd, Mark. Ubiquity Requires Redundancy: The Case for Federal Investment in Broadband. Science Progress. (January 2008).

The Internet's inherent network efficiencies were on display on September 11th, prompting the National Academies of Science to find afterwards that the Internet held up better than other communications technologies on that fateful day. Among the thousands of casualties on 9/11 was our outdated communications infrastructure. According to the National Academies, on 9/11 95% of cell phone calls at 11 a.m. failed to get through; the central office for the phone system cut off 300,000 landline phones; television stations were knocked off the air; and police and Fire Department radios failed. By contrast, only 2% of Internet addresses remained off-line for an extended period. 9/11 demonstrated the Internet's overall resilience to attacks through its flexibility and adaptability. But 6 years after 9/11, America has not done enough to advance the broadband Internet technologies that can help avoid future communications failures.

c) Broadband is essential for Government Continuity.

Universal broadband could also have important advantages for the government itself, allowing government workers to communicate in more geographically dispersed locations in an emergency. In the event of a major 9/11 type attack on Washington, offices could be inaccessible but employees will still need to communicate. Federal workers using broadband- enabled phones could immediately work from home or other broadband-enabled locations – improving continuity of government. Many government agencies are already making the switch to broadband-enabled voice services, but without broadband at home, workers can't connect. The White House flu pandemic plan suggests every business have a plan in place to allow employees to work from home. However, one in four Americans say they likely would lose their job or business if they had to stay

at home for seven to 10 days in a severe flu pandemic, according to a new survey.[26] Broadband is an essential ingredient in allowing people to stay connected to work and work from home.

Thus the Commission should find that the first prong of the four part test contained in Section 254(c)(1) regarding "...the extent to which such telecommunications services— (A) are essential to education, public health, or public safety;" is met.

B) Support for broadband is consistent with the public interest, convenience, and necessity.

The Joint Board finds that including broadband Internet access in the list of supported services is consistent with the public interest, convenience, and necessity.

1.) Broadband is essential for the economy.

Ubiquitously available broadband could unleash:

a. an estimated $500 billion in economic growth
b. create more than 1.2 million high-wage jobs
c. restore America's global competitiveness
d. boost business productivity – which is essential to raising standards of living for all families in America
e. allow small businesses to reach global markets

2.) Broadband is essential for telecommuters.

Broadband access is essential for enabling more Americans to occasionally work from home – delivering dramatic benefits:

[26] "One in Four Say They'd Lose Job or Business if They Had to Stay Home in a Pandemic", by Charles Hoskinson OCT. 27, 2006

- If everyone who could took full advantage of telecommuting, the reduction in miles driven would save $3.9 billion a year in fuel and the time savings would be equal to 470,000 jobs[27] -- reducing our dependence on foreign oil, traffic congestion, and greenhouse gas emissions at the same time.
- 79% of all office workers agree that allowing employees to work remotely improves their work-life balance.[28]
- People who normally commute 30 minutes each way to and from work can reduce their commute by 125 hours annually over a 50-week year – the equivalent to giving them more than three weeks of additional vacation and/or work time every year.

3.) Broadband is essential for improving the environment.

- If every U.S. home had Internet access and viewed and paid bills online, the switch would cut solid waste by 1.45 billion tons a year and curb greenhouse-gas emissions by 1.9 million tons a year by processing and hauling less, according to Javelin Strategy & Research.
- The Pacific Northwest National Laboratory of the Energy Department found that giving consumers the means to closely monitor and adjust their electricity use lowers their monthly bills and could significantly reduce the need to build new power plants. Over a 20-year period, this could save $70 billion on spending for

[27] National Technology Readiness Survey 2005/2006 http://www.rhsmith.umd.edu/ntrs/NTRS-2005-06.pdf
[28] Avaya 2005 Global Research Report, January 2006

power plants and infrastructure, and avoid the need to build the equivalent of 30 large coal-fired plants.[29]

- The American Consumer Institute finds that "wide adoption and use of broadband applications can achieve a net reduction of 1 billion tons of greenhouse gas over 10 years, which, if converted into energy saved, would constitute 11% of annual U.S. oil imports."[30]

4.) Broadband is essential for Americans with disabilities.

Broadband is an especially promising technology for the 54 million Americans with disabilities -- able to provide breakthrough new benefits not possible in today's legacy phone network. As all Americans increasingly depend on e-mail and the Internet to work and communicate, it becomes even more important to ensure that people with disabilities are not left out of the digital revolution. Broadband-enabled technology:

- is simply a more inclusive technology than the universal service-supported voice telephone network
- gives Americans with disabilities the opportunity to improve personal communication and leave inaccessible voice telephony behind.
- for people with disabilities, is not just something nice to have, it is a critical communications link and equalizer with the rest of the population.

[29] Lohr, Steve. "Digital Tools Help Users Save Energy, Study Finds." New York Times. (January 10, 2008).
[30] Fuhr, Joseph P. Jr and Stephen B. Pociask. Broadband Services: Economic and Environmental Benefits. The American Consumer Institute. (October 31, 2007).

C) Congress required the Commission to provide access to advanced communications and the authority to include broadband as a part of USF.

Congress gave the Joint Board and the Commission the authority to include broadband as a part of universal service. Specifically, Section 254(c)(1) of the Act states that: "Universal service is an evolving level of telecommunications services that the Commission shall establish periodically under this section, taking into account advances in telecommunications and information technologies and services." Accordingly, the Federal-State Joint Board on Universal Service is provided specific authority to recommend "from time to time" to the Commission modification in the definition of the services to be included for federal universal service support. Congress envisioned technological advancements and mandated that the Joint Board and the Commission consider not only developments in telecommunications services, but in informational services as well when defining universal service.

Congress intended to have the Commission use the USF to make advanced telecommunications technology available to all Americans, and directed the Commission to modernize universal service in step with technological advances. Moreover, Section 706 of the Telecommunications Act of 1996 directs the Commission and State commissions to encourage deployment of advanced telecommunications capability to all Americans.[31] Congress defined "advanced telecommunications capability" as "without regard to any transmission media or technology, high-speed, switched, *broadband*

[31] 47 U.S.C. 157 nt.

telecommunications capability that enables to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology."[32] [emphasis added]

Moreover, adding broadband services to universal service is consistent, if not mandated, by Section 254 (b) in which Congress directed the Joint Board and the Commission to base policies for the preservation and advancement of universal service on, among other principles:[33]

> (1) QUALITY AND RATES- Quality services should be available at just, reasonable, and affordable rates.
> (2) ACCESS TO ADVANCED SERVICES- Access to advanced telecommunications and information services should be provided in all regions of the Nation.
> (3) ACCESS IN RURAL AND HIGH COST AREAS- Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.

However despite the fact that broadband is now, undeniably, the essential communications medium of the 21st Century, it is surprising that although Section 254(c) talks about universal service as "evolving," the Commission has yet to update universal service support despite the fact that communications in America has indeed evolved. *Congress clearly intended for the fund to modernize in step with advances in technology*.

[32] Telecommunications Act of 1996 Sec 706(c)(1).
[33] 47 U.S.C. 254.

III. THE COMMISSION SHOULD CREATE A FUND THAT SUPPORTS BROADBAND INFRASTRUCTURE DEPLOYMENT AND BROADBAND SUBSCRIBERSHIP FOR LOW-INCOME HOUSEHOLDS

The Joint Board recommends that high-cost universal service support in the future be delivered through three distinct "funds," each with separate distribution mechanisms and separate funding allocations. The Broadband Fund would be tasked primarily with facilitating construction of facilities for new broadband services to unserved areas. The Mobility Fund would be tasked primarily with disseminating wireless voice services to unserved areas. Finally, a Provider of Last Resort (POLR) Fund would support wireline carriers who provide this function. These three funds would operate within an overall funding cap that is consistent with the current amount of high-cost funding. Support under existing programs would be transitioned over a period of years to the new three-part funding structure.[34]

The Joint Board recommends that the Broadband Fund be tasked with facilitating:

1) construction of facilities for new broadband services to unserved areas,
2) construction to enhance broadband service in areas with substandard service and;
3) continuing operating subsidies to broadband Internet providers serving areas where low customer density would suggest that a plausible economic case cannot be made to operate broadband facilities, even after receiving a substantial construction subsidy.[35]

[34] Recommended Decision at ¶ 11.
[35] Recommended Decision at ¶ 12.

A) The USF should support extending broadband access to unserved areas.

The Commission should adopt the Joint Board recommendation to extend broadband access to unserved areas. Even in knowledge economy states like Massachusetts, many rural areas are living in a telecommunications Third World, relying on the equivalent of a horse and buggy to ride the information superhighway.[36] Even large retail chains, which often have stores in rural shopping centers, find that they can't get broadband access.[37] Communications infrastructure is widely seen as the biggest driver of economic growth,[38] yet 21% of Americans — the nearly 60 million people who live in rural areas — are often underserved.

The Commission cannot rely on market forces alone to bridge the gap in broadband access. The return on equity that Wall Street demands from players in today's telecommunications business all but requires carriers to abandon rural America.[39] As population density drops outside of metropolitan areas, it may be impossible for telecommunications companies or cable service providers to justify the investment needed to bring fiber to every rural community, let alone every home. The result: just 17% of rural U.S. households subscribe to broadband service, according to the Government Accountability Office. Forrester Research predicts that in 2008, broadband penetration will grow, but net subscriber adds will drop to only 7.6 million households.[40] The firm predicts penetration rates will stall at 70%. It is incomprehensible that

[36] Johnson, Carolyn Y. "Towns left scrambling for touch of broadband." Boston Globe. (July 18, 2007).
[37] Mitchell, Robert L. "Rural broadband drought puts hurt on retailer." Computer World. (August 27, 2007).
[38] See, for example, Chairman Martin's quote at http://wireless.fcc.gov/outreach/index.htm?job=broadband_home
[39] Mitchell, Robert. "ISPs to rural America: Live with dial-up." ComputerWorld. (August 27, 2008).
[40] Cohen, Sally M. Top Consumer Broadband Trends For 2008. Forrester Research, Inc. (January 28, 2008).

competition will solve the problems of rural areas where there are no providers at all today.

B) States like California are demonstrating that USF can and should be used to transition support from analog to broadband.

In December 2007, the California Public Utilities Commission (CPUC) allocated $100 million over two years to the new California Advanced Services Fund (CASF), which will provide incentives to companies to deploy broadband service to unserved and underserved areas of California, many of which are rural, remote, or socio-economically disadvantaged communities. Similar to the Joint Board's recommendation, the CPUC will focus first on funding for areas where no facilities-based provider offers broadband service with the ultimate goal of making available a level of broadband service that provides a reasonable balance of technology, engineering, and cost. To further the CPUC's universal service goals, approved providers will also provide voice service as one of the applications available over the broadband service.[41]

The CPUC is focusing first on funding for areas where no facilities-based provider offers broadband service with the ultimate goal of making available a level of broadband service that provides a reasonable balance of technology, engineering, and cost. They have set a benchmark of 3 megabits per second (Mbps) download and a 1 Mbps upload speed for evaluating applications. Importantly, the decision to support broadband through California's CASF will not increase customers' total surcharges; however, because the broadband fund surcharge will be offset by an equal reduction in analog support in California's High Cost Fund. The Commission should similarly create

[41] Interim Opinion Implementing California Advanced Services Fund. Rulemaking 06-06-028. California Public Utilities Commission. (December 21, 2007).

a broadband Fund that doesn't substantially increase contributions from consumers by reducing analog telephone support as it increases broadband support. Over the next decade, the Commission should transition Universal Service support entirely to broadband support (keeping mobility capped) – and as California has done, ensure that the broadband connection can support voice communication.

C) USF Broadband Support Must Reach Lifeline/LinkUp Consumers

The Joint Board recommends that the Commission seek comment on whether Lifeline/Link-Up customers may be negatively affected by any aspects of the transition to the new three fund approach and encourages specific proposals to remedy any infirmities created by a three fund approach.[42]

Care must be taken that in the Information Age so the U.S. does not become a nation of digital haves and have-nots. We are already on that trajectory, with millions of Americans lacking even basic phone service and millions more lacking basic access to the Internet.

USF reform cannot leave low-income consumers behind. Leichtman Research Group finds that while broadband subscriptions continued to increase across the country in the past year, broadband penetration remains strongly correlated with household income:

- 68% of all households with annual incomes over $50,000 now get broadband vs. 59% last year
- 39% of all households with annual incomes under $50,000 get broadband vs. 27% last year

[42] Recommended Decision at ¶ 73.

- While 81% of all US households have at least one computer, only 56% of those with annual household incomes under $30,000 have a computer at home
- Just 45% of households with annual incomes below $30,000 subscribe to an Internet service at home - compared to 92% of households with annual incomes above $75,000.

Today only about one third of low-income households in the United States that qualify participate in Lifeline. One of the biggest challenges is consumer awareness—pointing to the need for robust and targeted consumer outreach to build awareness and highlight best practices. In a survey conducted by University of Florida Professor Justin Brown, 70 percent favored maintaining the current Lifeline discount and 56.6 percent of respondents are interested in expanding the discount to Internet access. It would make sense since, in 2005, approximately 1 in 10 households (11.4 percent) with incomes below $30,000 reported having broadband access. "The notion of extending Universal Service initiatives like Lifeline is particularly compelling when broadband providers offer local phone service through voice-over-Internet protocol (VoIP) as a bundle with high-speed Internet access."[43]

According to the Act, the Commission must ensure that broadband services are available to *all* consumers. In order to fulfill the nation's objective of universal service, advanced services must be available to and affordable by all consumers, regardless of geography or income.

D) $300 Million Annual Fund Is Insufficient

[43] Brown, Justin. Where is the Link in the Lifeline? Understanding Lifeline Awareness, Support & Retention Among Low-Income Households in Florida. (See http://www.benton.org/node/7598).

The Joint Board's recommendation is a critical recognition that we must modernize the universal fund for the digital age and extend broadband's reach to those who can benefit most. However, the Joint Board's recommended decision falls short in providing the resources needed to meet the nation's broadband challenge.

The Joint Board's $300 million a year proposed cap on the Broadband Fund[44] misses the mark. If broadband deployment cost is estimated at $1000 per line (a potentially low estimate), a $300 million per year fund would add a maximum of 300,000 more broadband connections -- increasing the nation's penetration level only minimally.[45] The National Exchange Carrier Association (NECA), an association of local telephone companies, estimates the challenge as much bigger than the $300 million the Joint Board proposes.[46] NECA estimates the additional investment cost of upgrading 5.9 million rural telephone access lines to 8 mbps -- a level capable of delivering voice, video, and data to rural customers -- is $11.9 billion. Adding operating expenses, overhead expenses, and depreciation expenses, plus a return on investment, translates into a $3 billion annual revenue requirement, as estimated by NECA. Such a number can only be offset, if the Commission transitions the fund from analog to digital support.

Recovering the extra $3 billion a year, the amount NECA estimates broadband upgrades will cost on a going forward basis, would increase universal service contributions only by an estimated 50 cents to a dollar per month for USF contributors. Instead, increased costs can be negated and avoided through a simultaneous reduction in analog telephone USF support, an expansion of broadband competition, and increased subscriber revenue to the broadband provider (from the availability of triple play

[44] Recommended Decision at ¶ 29.
[45] Turner, Derek. Broadband Reality Check II. Free Press. August 2006.
[46] National Exchange Carrier Association. "The Packet Train Needs to Stop at Every Door." June 2006.

services), combined with other policy measures. Together such measures could substantially reduce or even eliminate the need for increasing USF support payments while also facilitating the build-out of the nation's broadband communications networks.

IV. UNDER-FUNDING THE BROADBAND FUND WILL HURT THE U.S. ECONOMY

A) America Risks Falling Farther Behind the Rest of the World

America is falling further behind among industrialized nations in broadband. Once a technology leader in the Internet revolution, the United States has now fallen to 16th among industrialized nations in deploying broadband services. In some places like Japan, Iceland, South Korea, and the former Yugoslav republic of Slovenia, consumers get Internet connections for the same price most Americans pay that are significantly more powerful than what is available in the United States. Some countries are now rolling out ultra-high-speed access that is 500 times faster than what the 200 kbs that has characterized as "broadband" in the U.S. by the FCC. And despite the initial rapid uptake of broadband services in the United States, recent data suggest broadband adoption here is slowing. This trend, combined with the apparent overall slowing of household Internet adoption, should be cause for national concern.

We are falling behind on access, speed, and prices.

- Americans often pay twice as much for connections with 1/20 the speed.
- Singapore has a plan to offer its residents one gigabit per second by 2015. Residents can already get 100 megabits per second in Denmark, Japan, Romania,

Iceland, Slovenia, Dubai, parts of Kuwait, and in cities such as Paris and Prague. In fact, in Iceland, you can get it for $26 a month.[47]

- The International Telecommunication Union's Digital Opportunity Index now ranks the United States at 21st right after Estonia and tied with Slovenia.
- In Korea, the Information Ministry says that 90 percent of the population is connected to broadband.[48]
- In July 2007, Norway's Ministry of Government Administration and Reform estimated that 98.3 percent have access to broadband and expected coverage to reach 99 percent by 2008.[49]
- The Netherlands, with 16 million people, has one of the highest broadband penetrations in the world; there 7 in 10 homes had broadband as of October 2007.[50]
- China has surpassed the United States to become the world's largest Internet market by number of users.[51]

Many countries are making the necessary policy shifts to promote broadband. In England, the government has pledged £30m of funding over the next three years to help school pupils from low income families gain home broadband access.[52] New Zealand will become the first country in the world to turn off its public switched

[47] Michael Dell, January 9, 2007 www.dell.com/downloads/global/corporate/speeches/msd/2007_01_09_msd_ces.pdf
[48] "90% of Koreans hooked to broadband." Korean Herald. (July 9, 2007).
[49] "Nearly full broadband coverage." The Norway Post. (July 7, 2007).
[50] Foo Yun Chee. "Seven in 10 Dutch homes have broadband: survey." Reuters. (November 30, 2007).
[51] Taylor, Sophie. "China overtakes U.S. as top Web market: researcher." Reuters. (March 13, 2008).
[52] Ferguson, Tim. "£30m funding for "universal" broadband." CNET/Silicon.com. (January 9, 2008).

telephone network, instead relying entirely on a next generation network, xDSL and VoIP-based voice service.[53]

B) The benefits of an adequately funded Broadband Fund greatly outweigh the costs

The benefits of an adequately funded Broadband Fund greatly outweigh the costs. The Joint Board is "mindful that it is consumers who must pay universal service contributions." [54] The Joint Board also "recognizes that unrestrained growth in the universal service fund, regardless of the source, could be, and would likely be, catastrophic for universal service."[55] So the Joint Board concludes that "Despite strong interest in providing adequate funding for broadband deployment, the Joint Board wants to avoid significantly increasing the burden on those consumers."[56] However, the Joint Board fails to consider the immense benefits of universal broadband, and the opportunity to simultaneously reduce the costs of voice service by enabling voice service to be more affordably carried over broadband.

Upon close review, it may be too costly for the US to ***not*** invest in broadband infrastructure and affordability. A 2006 GAO report concluded that "when the availability of broadband to households, as well as demographic characteristics, are taken into account, rural households no longer appear less likely than urban households to subscribe to broadband. That is, the difference in the subscribership to broadband among urban and rural households appears to be related to the difference in availability of the

[53] "VoIP Victory: POTS Potted As New Zealand Turns Off PSTN." Telecom Web. (August 27, 2007).
[54] Recommended Decision at ¶ 2.
[55] Recommended Decision at ¶ 25. See also ¶ 24: "Larger USF contributions increase the risk that telecommunications services will become unaffordable for some, or even a substantial number, of consumers. As the courts have noted, excessive subsidization arguably may affect the affordability of telecommunications services, thus violating one of the principles in Section 254. We note widespread concern that further increases in the size of the fund under existing collection methodologies would be detrimental to both customers and carriers alike."
[56] Recommended Decision at ¶ 2.

service across these areas, and not to a lower disposition of rural households to purchase the service."[57] Connected Nation concludes that with the universal availability of broadband, the current 31% rural broadband adoption rate would eventually become much closer to the urban broadband adoption rate of 52%.[58]

Any possible added burden on consumers of telecommunications services must be weighed against the potential benefit from increased broadband subscribership. Connected Nation estimates that if every state could accelerate their broadband adoption by seven percentage points above the expected one would expect the following impact for the United States as a whole:

- $92 billion through an additional 2.4 million jobs per year created or retained
- $662 million saved per year in reduced healthcare costs
- $6.4 billion per year in mileage savings from preventing unnecessary driving
- $18 million in carbon credits associated with 3.2 billion fewer lbs of CO2 emissions per year in the United States
- $35.2 billion in value from 3.8 billion more hours saved per year from accessing broadband at home
- ***$134 billion per year in total direct economic impact for the United States*** [emphasis added]

The US Department of Agriculture has made similar findings. Thomas Dorr, the undersecretary for rural development, predicts a bright future for rural America if it can take advantage of three things: broadband Internet, $100-a-barrel oil and expanding

[57] General Accounting Office, Broadband Deployment Is Extensive Throughout the United States, but It Is Difficult to Assess the Extent of Deployment Gaps in Rural Areas, May 2006, p. 30.
[58] The Economic Impact of Stimulating Broadband Nationally. Connected Nation (2008).

capitalism in Europe and Asia. He says expanding broadband means companies can operate from almost anywhere.

C) Switch to broadband could save consumers $100 billion and offer new services

The migration from analog phone service to broadband could enable incredible secondary consumer benefits. One study, for example, found that broadband-enabled VoIP competition will not only allow consumers to do more than today's analog network, but will save consumers an astounding $100 billion over the next five years.[59] It means greater cost savings to consumers than the President's much-touted tax cuts—reducing telephone costs three times more than the entire Universal Service Fund will spend over the same period. But these telephone benefits are limited when Americans lack broadband access and the phone competition it will enable.

Many Americans who have watched a competitive cell phone market add feature after amazing feature in a few short years have reason to wonder why the features available on their landline phones have remained essentially the same for the last 30 years. Today's analog phone network has become antiquated and outdated. For example, two thirds of the frequencies in which the human ear is most sensitive, and 80 percent of the frequencies in which speech occurs, are beyond the capabilities of the public telephone network. Now some broadband-enabled phone services around the world are offering services known as High Definition (HD) or wideband voice service. These enhanced services often enable CD-quality sound, surround sound for conference calls, and even telepresence for better communication. These HD voice services can be

[59] A report from MiCRA shows that consumers could save over $100 billion over the next five years if there were robust VoIP competition, www.micradc.com/news/publications/pdfs/MiCRA_Report_on_Consumer_Benefits_from_Cable.pdf

especially important for people with disabilities. Likewise, broadband phone services can enable new mobility and features not possible in yesterday's analog network.

D) The Commission should find cost savings in decreased funding for old technology, not short-changing the transition to broadband

Merely extending universal service support to broadband, without a commensurate decrease in analog support, could indeed increase costs to consumers who can't afford to pay more. Instead, broadband support should be phased in over a limited timetable while phasing out support for analog service, spurring new competition, and enabling providers to offset the increased cost through increase subscriber services like the addition of voice over Internet Protocol (VoIP) and video to their broadband offerings. As the Joint Board finds:

> If all of these potential savings from legacy programs are examined seriously and promptly, potential savings could be significant. Together with the possibility of stretching federal dollars with state matching funds, we are confident that adequate funding can be provided for the Broadband Fund and the Mobility Fund without unduly burdening the customers who must pay USF contributions. We also note that legacy sources for wireless support are anticipated to be reduced over the transition period.[60]

In fact, continued subsidization of outdated analog technologies may create disincentives for the digital transition we seek to accelerate. As we have done with digital television, our goal must include not only a transition to newer better digital services, but must also include a plan for moving away from older and limited analog services.

A complete transition to digital networks is not only essential for our economy and our consumers, it is essential for the future financial success of rural telephone companies as well.

[60] Recommended Decision at ¶ 34.

It is becoming increasing apparent to providers that IP communication provides a better form and more efficient communications network. IP can cost less; enable voice, video and multimedia; provide high-value services such as presence and instant messaging; and enables higher-quality wideband speech. For digital phone services, it can enable new features not possible in today's outdated analog phone network. Nearly 90 percent of broadband-enabled phone service early adopter households claim the same or better voice quality and service reliability than traditional landline service.[61]

V. USF BROADBAND SUPPORT SHOULD NOT BE TEMPORARY

The Joint Board anticipates that broadband support for operation and maintenance will only be available for a "limited period of time," asking the Commission to request comment as to the appropriate transition plan to "wean a provider from broadband support once the objectives of geographic coverage in an area have been met."[62] The Commission should reject this break from traditional USF support mechanisms.[63]

Although the Joint Board recommends that the primary objective of the Broadband Fund should be the "expansion of geographic coverage" and "targeted for capital spending for new construction in unserved areas"[64] the Commission should recognize that these facilities will have to be maintained and upgraded to keep up with evolving definitions of universal service and broadband. The Joint Board recommends that the Commission seek comment regarding under-served areas that may be receiving marginal or unacceptable levels of… broadband service."[65] The Commission should

61 According to a March 2006 survey by Telephia.
[62] Recommended Decision at ¶ 38.
[63] The High Cost, Rural Health, Low Income and Schools & Library funds are maintained on a long-term basis.
[64] Recommended Decision at ¶ 36.
[65] Recommended Decision at ¶ 71. "Commenters should address the appropriate means to ensure that customers in those areas have an equal opportunity to obtain adequate and reliable… broadband service."

recognize in a quickly-evolving telecommunications environment, the bar for "marginal" and "unacceptable" will always be moving. Networks, especially in high-cost areas, will need continuous maintenance and upgrade in order to ensure that consumers have access to not just the services offered over broadband today – but the services of tomorrow only dreamed of today.

If any funding is to be targeted for termination, it should be funds to support legacy telephone service. The USF has provided a safety net for connecting communities and those struggling to get by with affordable telephone service. As technology advances, it's now time to modernize USF for the Digital Age. As we have done with digital television, our goal must include not only a transition to newer and better digital services, but it must also include a plan for moving away from older and limited analog services. Broadband support should be phased in over a limited timetable, while phasing out support for analog service. In fact, continued subsidization of outdated analog technologies may create disincentives for the digital transition we seek to accelerate.

A complete transition to digital networks is not only essential for our economy and our consumers, it's essential for the future financial success of rural telephone companies, as well. Per-minute voice costs are quickly plunging to zero. As the Economist magazine points out, "Metered telephone calls whose cost depends on the length of the call and the distance covered are becoming an anachronism."[66] To remain in business these rural companies, often a provider of last resort, need new revenue streams. Rural phone companies won't be successful unless they are able move to broadband and tap into a broader stream of broadband-enabled services.

[66] "The End of the Line: Traditional Fixed-Line Telephony Has Had Its Day" The Economist. (October 12, 2006).

According to figures from Informa, a market research firm, global revenues from fixed-line voice calls were around $600 billion in 2005, and data revenues were $202 billion. By 2010, Informa predicts, fixed-line calls will account for less than half of operators' revenues in the developed world. Instead, their new core product will be broadband Internet access. Even as voice revenue declines, fixedline operators have a booming new business in the form of broadband Internet access, for which global revenues will grow from $202 billion in 2005 to $410 billion by 2011, Informa predicts. The broadband boost will help offset any decline in voice revenue. Some rural operators understand that being able to provide telephone and television over the same broadband connection is the key to their continued economic vitality and to increasing their overall revenues. Policymakers shouldn't protect rural providers from this opportunity, but accelerate it.

VI. THE COMMISSION SHOULD ADOPT AN AGGRESSIVE TRANSITION SCHEDULE TO REAP THE BENEFITS OF UBIQUOTOUS BROADBAND SOONER

Ironically, under current Commission rules, a rural telecommunications provider would lose universal service support if he/she transitioned from conventional phone service and upgraded to broadband in order to provide consumers with high-speed data, more cost-efficient voice over IP, and enabled digital television over the same line.

Rather than an immediate flash cut in the current USF system's analog support, a five-year timetable for transitioning subsidies from analog to digital—with a hard analog shut-off date—will put the United States on a more sure-footed broadband trajectory.

However, incumbent local exchange companies are in many cases burdened with equipment that is outdated and inefficient relative to what could be used if they were starting fresh.[67] USF support to keep consumer prices below costs provides an incentive to use outdated equipment, rather than investing in more efficient technologies. Therefore any high-cost broadband subsidy should go toward upgrading the remaining lines first as well moving past the old regulatory emphasis on local exchange carriers, distributing USF support in a technology-neutral manner. More efficient competitors would likely prevail (at least on price) were the market cost-based. Using USF to level the playing field between incumbents and competitors actually may have the perverse effect of discouraging both competition and innovation. Innovations are unlikely to attract investment if they must compete with established and subsidized status quo technology. The same factors that hold incumbent carriers back from upgrading their systems also deter would-be competitors. Most competitive attention is focused on urban and suburban markets, where the economies of scale are better and where there is guaranteed demand for advanced services.

[67] Nearly 80 percent of ILEC lines are already broadband-capable.

VII. CONCLUSION

For the above stated reasons, the Commission should adopt the Joint Board's proposal to create a Broadband Fund, at a size greater than $300 million a year, and create a specific timetable and transition plan to transform the fund and the nation to an entirely digital communication infrastructure.

Respectfully submitted,

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