

**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

Notice of Proposed Rulemaking

Comments of AARP

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About AARP

AARP is a nonprofit, nonpartisan organization with more than 39 million members. As the largest membership organization representing the interests of Americans aged 50 and older, AARP is greatly concerned about the health, safety and financial security of older Americans, including those living on low and fixed incomes. AARP advocates for affordable and accessible telecommunications services at both the state and federal level.

Executive Summary

- Basic telephone service is a necessity that is crucial to public health and personal welfare. This is especially true for older Americans. Basic telephone service allows older people to maintain social contact, preserve health and safety, and gain assistance in an emergency. According to FCC statistics, individuals age 65 and older are more likely than any other age group to have traditional wireline telephone service. Reform of high-cost universal service funding must continue to promote high-quality and affordable basic telephone service.
- Older Americans have the potential to reap significant benefits from the widespread availability of affordable and high-quality broadband services. Broadband services can create new opportunities for older Americans to maintain their independence and security, to receive improved medical supervision and care, and to maintain their productivity in the workforce. Broadband provides new avenues for socialization and contact with the outside world for individuals who may experience decreased mobility. Broadband also has the potential to offer expanded support to family and friends who act as unpaid caregivers for older Americans.
- Because broadband is the basic infrastructure of the information economy, unless all Americans have access to high-quality and affordable broadband, economic efficiency and innovation in a wide range of areas, including education, government, and private business will be stifled. These Comments support the Joint Board’s decision to include broadband as a service supported by universal service funding.
- Contrary to the FCC’s recent Report to Congress that indicates that all Americans have access to affordable advanced telecommunications services, broadband deployment in the United States has substantial deficiencies. For example, evidence shows that there is a significant difference between rural and urban broadband Internet usage in the United States. There are substantial differences in broadband adoption based on household income. Age-based disparities in broadband adoption are also present, with a scant 15 percent of households headed by individuals over 65 having a broadband connection.
- The Joint Board’s *Recommended Decision*¹ proposes some reasonable steps to reform existing high-cost support. For example, the *Recommended Decision* proposes to identify, quantify, and make explicit existing support for wireless mobility services. However, while the Joint Board acknowledges that high cost funding currently provides implicit support for broadband deployment, the *Recommended Decision* does not sufficiently address this implicit funding. Meaningful reform requires that all of the implicit subsidies be made explicit.
- The *Recommended Decision* proposes to create a “Provider of Last Resort (POLR) Fund” that leaves most high cost funding in the *status quo* arrangement of providing explicit support for voice services and implicit support for broadband services. The *status quo* must be rejected. The FCC should identify and make explicit the support provided to telephone companies for the joint provision of voice and broadband services. To

¹ *In the Matter of High-Cost Universal Service Support; Federal-State Joint Board on Universal Service*, WC Docket No. 05-337, CC Docket No. 96-45, Recommended Decision, November 20, 2007. Hereinafter *Recommended Decision*.

implement meaningful reform, the following steps are appropriate:

- » The FCC should identify the supported companies that have upgraded their networks to provide broadband
- » The FCC should audit these firms to determine the extent and quality of broadband coverage, this audit can contribute to generating accurate maps that identify the characteristics of broadband deployment
- » The FCC should establish the cost basis for the joint provision of voice and broadband services
- » The FCC should acknowledge revenue streams arising from both voice and broadband services, and,
- » The FCC should award support to these companies based on data obtained from the review of costs and revenues

The outcome of this approach will rationalize support for voice and broadband services, and enable support for a single “Integrated POLR” that provides voice and broadband services. This approach is likely to free up more funds for broadband expansion than the approach identified by the Joint Board. These Comments also recommend that a separate “Broadband Expansion Fund” be established to provide support for extending broadband into unserved areas, and upgrading facilities in underserved areas.

- The *Recommended Decision* recommends that broadband mapping only address “unserved” areas. This approach to mapping should be rejected. To satisfy the statutory objectives, mapping should identify the current status of all broadband deployments.
- The FCC should establish a broadband speed benchmark that encourages the deployment of high quality broadband. For any new broadband facilities supported by any broadband expansion fund, these Comments recommend that priority be awarded to deployments that provide symmetrical data speeds of 10 Mbps or greater.
- Given the inclusion of broadband services in the universal service offering, the FCC should establish an affordability standard. These Comments recommend that affordability proceedings be conducted with the assistance of the state commissions, as regional and local factors have a strong influence on the ability of households to afford broadband.
- Because of the very limited level of broadband expansion funding proposed by the Joint Board, awarding support requires prioritization of alternative projects. These Comments recommend that the ranking of alternative projects that request funds should be based on a consistent application of the ranking criteria that are identified in these Comments.
- The *Recommended Decision* proposes that state matching funds be required for federal broadband and mobility support. While there is no question that the availability of state matching funds for broadband and mobility deployment can provide higher levels of broadband and mobility funding in a specific state, the FCC should exercise great care in determining whether to exclude states that cannot contribute matching funds from receiving supplemental federal support. Furthermore, as federal monies are ultimately being awarded to private interests, it is appropriate to require that matching funds be supplied by the firms that receive the federal support.

- It is appropriate to assess broadband services for a contribution to universal service funding. If broadband is not assessed, then voice services will continue to implicitly support broadband. This outcome is inappropriate under the provisions of the Telecommunications Act of 1996.² These Comments recommend that the FCC should appropriately size a broadband expansion fund after the mapping of broadband deployments is completed. With precise data on the extent of unserved and underserved areas, a target level of funding for broadband expansion can be identified. Funding sources should include the freeing up of funds from existing contributions, as suggested by the Joint Board, and a new assessment on broadband services.
- With regard to contributions collected from broadband services, the resulting funds should be applied to two purposes. First, universal service assessments associated with voice services should be reduced to address implicit funding of broadband by voice services. Second, contributions generated from broadband should be applied to a broadband expansion fund, and to expand the Lifeline and Link-Up programs to address broadband adoption by low-income consumers.
- The Joint Board’s proposed Mobility Fund has merit. The Joint Board’s proposal to eliminate the identical support rule, and to require that support for mobility service providers be based on their costs is appropriate and should be pursued by the FCC. However, care must be exercised to prevent that fund from becoming unduly large. It is not clear that the United States is facing a mobility deployment problem. Mobility funding should not offset broadband funding.
- The FCC should exercise great care when considering the use of the Mobility Fund to support the mobility service-quality improvements. Instead, the FCC should leverage the Joint Board’s proposed wireless mapping to provide consumers with accurate information regarding wireless coverage and service quality, thus giving consumers better information regarding which carriers offer service in specific areas, and providing incentives to wireless carriers to upgrade their networks and provide high-quality services.
- The fact that some states have allowed basic voice service rates to be deregulated should be addressed by the FCC in the context of high-cost universal service funding. Supported carriers are obligated to provide affordable services, and supported carriers should be required to offer affordable rates. Carriers that do not offer affordable basic service rates should face funding reductions.
- Given the inclusion of broadband in the set of supported services, the FCC should modify the Lifeline and Link-Up programs to ensure that low-income consumers have the ability to purchase broadband. The FCC should gather additional information regarding revisions of Lifeline and Link-Up for both broadband and mobility services.

² 47 U.S.C. §254(e) requires that universal service support be explicit and used only for the intended purposes identified by the FCC. Hereinafter, the Telecommunications Act of 1996 will be referred to as “the 1996 Act.”

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Comments of AARP

AARP respectfully submits these Comments for the FCC's consideration, and thanks the Commission for the opportunity to participate in this important docket regarding universal service in the broadband era. As part of the trilogy of NPRMs,³ the FCC seeks comment on the Joint Board's *Recommend Decision*.⁴ These Comments address the Joint Board's proposal, as requested by the FCC. While these Comments identify shortfalls in the Joint Board's approach, and propose alternatives that either supplement or replace the Joint Board's recommendations, the Joint Board should be commended for its hard work on these very difficult issues, and for identifying innovative solutions to some of the problems facing the FCC. These Comments will also address some of the tentative conclusions identified by the FCC in the NPRMs.

I. Introduction

Substantial reform of the High Cost Fund is needed to address the statutory mandates associated with universal service in light of the technological revolution that has made broadband Internet access a necessary component of economic and civic life. A key issue facing this Commission is support for broadband. Broadband is the basic infrastructure of the information economy. The availability of affordable and high quality broadband will offer many advantages to older Americans, and will also encourage innovation and economic growth.

These Comments point to the need for a substantial effort to reorient high-cost universal service funding to acknowledge evolving technology. Part of the solution is to incorporate broadband into the definition of supported services. This change must be complemented with improvements in the FCC's approach to auditing and verifying that supported carriers are

³ *In the Matter of High-Cost Universal Service Support; Federal-State Joint Board on Universal Service*, WC Docket No. 05-337, CC Docket No. 96-45, Notices of Proposed Rulemaking, FCC 08-22, FCC 08-4, and FCC 08-5, January 29, 2008.

⁴ *In the Matter of High-Cost Universal Service Support; Federal-State Joint Board on Universal Service*, WC Docket No. 05-337, CC Docket No. 96-45, Recommended Decision, November 20, 2007. Hereinafter *Recommended Decision*.

satisfying universal service objectives. The reform of high-cost universal service funding in the broadband era must also recognize that the business model of companies receiving universal service funding has undergone dramatic changes during this decade. Subsidized telephone companies no longer provide basic telephone services alone. Rather, many of these companies are now integrated providers of voice and broadband services (and perhaps video services as well). A key problem with the legacy high-cost universal service support mechanism is that it fails to recognize this sea change in both the cost structure and revenue flows of supported companies.

One way that the FCC can reform high-cost universal service funding is to identify the cost basis for support, and make explicit the implicit subsidy flows that currently contribute to the provision of mobility and broadband services. The Joint Board's proposal makes progress on this objective with regard to the implicit subsidies that currently fund mobility services. However, with regard to broadband, the Joint Board's proposal misses the mark. These Comments propose an alternative to the Joint Board's approach to broadband that will enable the FCC to rationalize support for both voice and broadband services, and likely free up a higher level of support for expanding broadband services, even under the Joint Board's proposed cap. Before proceeding to specific evaluation and recommendations associated with the FCC's NPRMs, a brief discussion of the importance of broadband for older Americans is provided below.

II. Broadband and Older Americans

Basic telephone service has played a critical role in helping people adapt to the aging process, and the older population has thoroughly embraced this technology. Older people, due to decreased personal mobility and the geographic dispersion of families, are likely to rely on telephone service to “stay connected” with family and friends, or with supportive agencies. The success of universal service policies directed at voice services is clear. A very high percentage

of the population, and an even higher percentage of the older population, subscribes to basic telephone service.⁵ Open access principles associated with the telephone network enable the attachment of any device to that network. This openness has enabled innovators outside of the telephone company to have access to telephone company technologies, and has resulted in innovative services that benefit older Americans, such as personal healthcare monitoring or medical alarms that encourage independent living. But the limitations of voice technology will inhibit future innovation and the widespread adoption of improved services based on high-quality broadband.

Broadband is basic infrastructure that can enable the deployment of advanced technologies that promise many benefits to older Americans. The benefits of broadband for the growing senior population fall into three general areas:

1. Increased independence, security, and quality of life
2. Improved medical care and monitoring
3. Increased earnings potential

A. Increased Independence, Security, and Quality of Life

Increasingly, older Americans want to “age in place,” i.e., to adapt one’s residence to accommodate for the disabilities of aging.⁶ Broadband-based information and communications technology provides a means of mitigating disabilities, adapting an older person’s living space to be more supportive, and encouraging independent living for older Americans.

For example, broadband technology enhances security and the capabilities of personal

⁵ *Telephone Subscribership in the United States*, Industry Analysis and Technology Division, Wireline Competition Bureau, Federal Communications Commission, March 2008, Table 6.

⁶ Linda L. Barrett, *Healthy@Home*, AARP, March 2008, http://assets.aarp.org/rgcenter/il/healthy_home.pdf . See also “Home Adaption: Helping older people age in place,” *Geriatric Nursing*, 22, no. 5, (September 2001), 239–246; and Kathryn Lawler, *Aging in Place: Coordinating Housing and Health Care Provision for America’s Growing Elderly Population*, Joint Center for Housing Studies of Harvard University Neighborhood Reinvestment Corporation, October 2001, 12–16, <http://www.nw.org/network/pubs/studies/documents/agingInPlace2001.pdf> .

safety systems. Using a broadband connection, a provider of assistive services can continuously monitor conditions in a residence.⁷ It is important to note that systems that improve the prospects for independent living benefit not only the seniors, but also benefit those family members and friends who are involved in caring for older individuals. According to a study completed by the National Alliance for Caregiving and AARP, there are about 34 million Americans, other than paid providers, caring for individuals over the age of 50.⁸ These caregivers experience reduced productivity as a result of their responsibilities. According to a 2006 study prepared by MetLife, the annual productivity reduction affecting individuals who are involved in caring for older family members could approach \$26.5 billion.⁹

Broadband can provide beneficial socialization opportunities for individuals who experience reduced mobility. For example, two 2007 studies that focused on the impact of Internet technology on older individuals found that Internet utilization by seniors led to improved self-esteem and reduced loneliness, as well as improved cognitive function.¹⁰ Improved self-esteem and reduction in loneliness are benefits that, while difficult to place a dollar value on, are notable in the improvement in the quality of life that broadband information

⁷ See, for example, the systems provided by GrandCare and HealthSense at <http://www.grandcare.com/main.php> , and http://www.healthsense.com/2-products_en-autopers1.html .

⁸ *Caregiving in the U.S.*, National Alliance for Caregiving and AARP, April 2004, 10, 19, <http://www.caregiving.org/data/04finalreport.pdf> .

⁹ “The MetLife Caregiving Cost Study: Productivity Losses to U.S. Business,” MetLife Mature Market Institute, July 2006, 4–5. MetLife estimates that the total annual lost-productivity costs for all caregivers is \$33.6 billion. Based on data from the National Alliance for Caregiving, 79 percent of caregivers are providing care for individuals over the age of 50. 79 percent of \$33.6 billion is \$26.5 billion, <http://www.metlife.com/WPSAssets/13551774261164052327V1FCaregiverCostStudy.pdf> .

¹⁰ T. Fokkema, and K. Knipscheer, “Escape Loneliness by Going Digital: A Quantitative and Qualitative Evaluation of a Dutch Experiment in Using ECT to Overcome Loneliness Among Older Adults,” *Aging and Mental Health*, 11, no. 5, (September 2007), 496–504.

N. Shapira, A. Barak, and I. Gal, “Promoting Older Adults’ Well-being Through Internet Training and Use,” *Aging and Mental Health*, 11, no. 5, (September 2007), 477–484.

and communication technology can bring. Improvements in the sense of autonomy and independence can also lead to reductions in health problems.¹¹

B. Broadband and Improved Medical Care and Monitoring

Medical care can be assisted by broadband technology on a number of dimensions. For example, use of the Internet to research health matters is an important capability—studies have shown that patients who ask questions, explore treatment options, or express opinions during medical office visits have measurably better treatment outcomes.¹² Broadband also enables direct medical applications. For example, advances in microelectronics and applications of open wireless standards, such as Bluetooth and ZigBee, enable wearable health monitoring and rehabilitative assistance devices. These devices can be combined with always-on broadband connections to improve care. Similarly, broadband-enabled medical monitoring devices, that connect sensors to the individual, can be used for home-based physical rehabilitation¹³ or home-based rehabilitation following stroke.¹⁴

Efforts to quantify the impact of telemedicine on U.S. healthcare expenditures have identified substantial monetary benefits. For example, a study of diabetic patients using video telehealth visitation, in combination with traditional home care visits by a nurse, found that patients receiving the video telehealth had average hospitalization costs of \$87,000, versus

¹¹ See, for example, D. Meddaugh, and B. Peterson, “Removing Powerlessness from the Nursing Home,” *Nursing Homes*, September, 1997.

¹² R. Campbell, and J. Wabby, “The Elderly and the Internet, A Case Study,” *The Internet Journal of Health*, 3, no. 1, (2003), <http://www.ispub.com/ostia/index.php?xmlFilePath=journals/ijh/vol3n1/elderly.xml> .

¹³ E. Javanov, et al. “A Wireless Body Area Network of Intelligent Motion Sensors for Computer Assisted Physical Rehabilitation,” *Journal of NeuroEngineering and Rehabilitation*, 2, no. 6, (March 2005), <http://www.jneuroengrehab.com/content/2/1/6> .

¹⁴ H. Zheng, et al. “SMART Project: Application of Emerging Information and Communication Technology to Home-Based Rehabilitation for Stroke Patients,” Proceedings of the 6th International Conference on Disability, Virtual Reality, and Associated Technology, Esbjerg, Denmark, 2006, http://www.icdvrat.rdg.ac.uk/2006/papers/ICDVRAT2006_S06_N04_Zheng_et_al.pdf .

\$232,000 for the control group that received only traditional nurse visits.¹⁵ Similarly, a 2002 study of a telehealth test bed deployed by the Veterans Administration found, for the cohort using the telehealth services, “a 40% reduction in emergency room visits, 63% reduction in hospital admissions, 60% reduction in hospital bed days of care, 64% reduction in VHA nursing home admissions, and 88% reduction in nursing home bed days of care.”¹⁶ In summary, the potential savings in healthcare costs due to advanced monitoring technologies empowered by broadband networks are likely to be substantial.

C. Seniors as Earners

Broadband presents the aging population with opportunities for expanded earning capabilities. Businesses are beginning to recognize that the large number of retirements that will occur in the coming years can have a negative impact on their operations¹⁷ With the widespread deployment of high-quality broadband, the human capital of older Americans can easily be accessed even if a former employee is retired. Part-time employment and consulting opportunities are enabled through advanced communications technology. Broadband-based services that support an aging population can be thought of as conserving human capital.

It is difficult to quantify the dollar impact of increased earning potential, but the benefits could be substantial. A recent estimate shows that a 20 percent increase in labor force participation above the level projected by the Bureau of Labor Statistics for the year 2034 could result in an increase in annual tax revenues of between \$187.5 and \$247.7 billion.¹⁸

¹⁵ N. Neuberger, “Advancing Healthcare through Broadband: Opening Up a World of Possibilities,” A White Paper for the Internet Innovation Alliance, October 2007, 13, <http://www.internetinnovation.org/tabid/56/articleType/ArticleView/articleId/86/Default.aspx> .

¹⁶ M. Meyer, R. Kobb, and P. Ryan, “Virtually Healthy: Chronic Disease Management in the Home,” *Disease Management*, 5, no. 2, (2002).

¹⁷ “The Baby Boomer Retirement Crisis Is a Looming Corporate Threat,” Forrester Research, June 29, 2007, <http://www.forrester.com/Research/Document/Excerpt/0,7211,41325,00.html> .

¹⁸ K. Manton, G. Lowrimore, A. Ullian, X. Gu, and H. Tolley, “Labor Force Participation and Human Capital Increases in an Aging Population and Implications for U.S. Research Investment,” *Proceedings of the National Academy of Sciences*, June 26, 2007, 10805,

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D. Summary of Broadband Benefits for Older Americans

The discussion above points to substantial benefits broadband can provide to older Americans. It is important to note that broadband-based solutions directed at an aging population also have the potential to offer benefits to other segments of the population that may face challenges in day-to-day activities, such as those with temporary or permanent disabilities. Additional benefits also accrue to those who are unpaid caregivers. The basic infrastructure provided by broadband will generate economic opportunities, through cost savings associated with the delivery of care to older Americans, through economic stimulus to service providers and technology firms, and through the conservation of human capital and expanded earning opportunities for seniors.

III. Dramatic Reform of High-Cost Funding is Needed

The discussion above illustrates the substantial economic benefits that broadband can bring to older Americans. However, high-cost universal service programs are mired in an antiquated backward-looking framework that does not sufficiently support broadband deployment. Unfortunately, the FCC has overlooked the interrelated nature of numerous factors that influence high-cost universal service reform. As these Comments are being prepared, the FCC has announced that it is developing an alternative method of collecting data that will replace the FCC's previous use of both the 200 kbps "high-speed" designation and the use of five-digit zip code reporting. However, it appears that the FCC's new approach will continue to combine reporting of business and residential subscribers, and will not collect information regarding price.¹⁹ These are serious shortcomings. Broadband service providers that target

¹⁸(...continued)

<http://www.pnas.org/cgi/content/abstract/0704185104v1> .

¹⁹ "Statement of Commissioner Michael J. Copps, Approving in Part and Concurring in Part," *In the Matter of Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All American, Improvement of Wireless Broadband Subscriber Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscriber Data*, WC Docket 07-38, Report and Order, and Further Notice of Proposed (continued...)

business customers may not offer service in residential markets, thus combined reporting may not produce an accurate picture of broadband availability in residential markets. Price information is critical, as the statutory guidelines identify affordability as a goal for broadband services.²⁰

The resolution of the broadband classification issue is important to high-cost universal service funding reform, and the record in this proceeding will suffer due to the lack of coordination by the FCC regarding these interrelated dockets. In addition, the FCC has also announced that it has approved a report to Congress on the status of the deployment of advanced services.²¹ While the Report to Congress is also not available as these Comments are prepared, statements made by FCC Chairman Martin indicate that this report finds that “broadband services are currently being deployed to all Americans in a reasonable and timely fashion.”²² The FCC’s conclusion is based on the FCC’s current, inadequate, data collection methods. Thus, this conclusion is not well supported. It is also contradicted by the Joint Board’s *Recommended Decision*, that identifies the need to expand broadband service to areas that are currently unserved.²³ Other evidence points to a continuing digital divide, and the need for prompt action

¹⁹(...continued)

Rulemaking, March 19, 2008.

²⁰ 47 U.S.C. §254(b)(1).

²¹ *In the Matter of 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*, GN Docket No. 07-45, “Availability of Advanced Telecommunications Capability in the United States,” Fifth Report to Congress, March 19, 2008.

²² “Statement of Chairman Kevin J. Martin,” *In the Matter of 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*, GN Docket No. 07-45, March 19, 2008.

²³ The *Recommended Decision* indicates that the FCC’s current 200 kbps threshold for high-speed services is inadequate, and asks the FCC to seek comment on an appropriate definition of broadband. The *Recommended Decision* does state, however, that “we now believe that a more rigorous requirement may be justified, closer to the capacities more typical of the most common national broadband plans.” (*Recommended Decision*, ¶72.) If the *Recommended Decision*’s approach to broadband definition is pursued, this implies that some areas will be underserved, as
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to reform universal service programs:

- There is a significant difference between rural and urban broadband Internet usage in the United States, with 2007 data showing that 31 percent of rural adults have broadband at home, as compared with 52 percent for urban adults, and 49 percent for suburban adults.²⁴
- There are substantial differences in broadband adoption based on household income. In 2007, just 30 percent of households with income under \$30,000 per year had broadband, while 76 percent of households with income more than \$75,000 per year had broadband.²⁵
- Age is also a factor associated with variations broadband adoption. 2007 data show that 40 percent of those in the 50-to-64 age group having broadband in their home; for those age 65 and above the number of broadband connections is a scant 15 percent.²⁶

With regard to the needed reform of high-cost universal service support, the Joint Board's *Recommended Decision* is a small step in the right direction. However, the approach advocated by the Joint Board does not address key issues associated with universal service objectives. Nor do the actions proposed by the Joint Board have sufficient breadth and depth to adequately reform high cost funding.

IV. Reform Must be Pursued with Accurate Data

According to the most recent FCC statistics, about 65 million households in the United States have “high-speed” connections to the Internet.²⁷ Given that the FCC’s definition of “high-speed” services includes those services that offer connections capable of transmitting data at

²³(...continued)

they will fail to meet the standard. Thus, it is appropriate to direct support at underserved areas, as is recommended in these Comments.

²⁴ Pew Internet and American Life Project “Home Broadband Adoption 2007,” June 2007, http://www.pewinternet.org/pdfs/PIP_Broadband%202007.pdf .

²⁵ According to the Census Bureau, about 40 percent of U.S. households have income below \$35,000 per year. See, http://pubdb3.census.gov/macro/032005/hhinc/new05_000.htm. The Pew Internet project found that households with incomes below \$30,000 per year have significantly lower broadband subscription rates. See, “Home Broadband Adoption 2007,” Pew Internet and American Life Project, June 2007, http://www.pewinternet.org/pdfs/PIP_Broadband%202007.pdf .

²⁶ Pew Internet and American Life Project “Home Broadband Adoption 2007,” June 2007, http://www.pewinternet.org/pdfs/PIP_Broadband%202007.pdf .

²⁷ “High Speed Services for Internet Access: Status as of June 30, 2007,” Federal Communications Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, Table 13, March 2008, http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-280906A1.pdf .

speeds of 200 kbps in at least one direction, the “high-speed” benchmark has been established at a very low level and overstates broadband deployment. According to FCC data, more than 31 million “high-speed” connections do not exceed 200 kbps in both directions.²⁸ Thus a full 31 percent of connections that the FCC classifies as “high-speed” offer consumers very slow data speeds.²⁹ Instead of classifying these slow connections as a problem to be remedied, this classification allows the FCC to identify these connections as evidence of success.³⁰

A. Broadband Classification Must be Reformed

The FCC previously sought comment on whether it needs to change its definition of broadband,³¹ and has announced that a decision has been made on this issue.³² While all details have yet to be released, preliminary information indicates that the FCC has revised the definition of broadband to include eight tiers of service.³³ While moving away from the 200 kbps threshold is a positive step, the eight-tier approach appears to take reporting to the other extreme—over-

²⁸ Ibid., Table 5.

²⁹ The most recent FCC statistics identify approximately 100 million broadband connections being used by businesses and residences, resulting in the 31 percent figure. The FCC statistics do not allow for a determination of what percent of residential connections do not exceed 200 kbps in both directions.

³⁰ *In the Matter of 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*, GN Docket No. 07-45, “Availability of Advanced Telecommunications Capability in the United States,” Fifth Report to Congress, March 19, 2008. Details of this report have not been released as of this writing, but statements made by the non-dissenting FCC Commissioners indicate that the majority has concluded that broadband services are currently being deployed to all Americans in a reasonable and timely fashion.

³¹ *In the Matter of 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*, GN Docket No. 07-45, April 16, 2007.

³² “FCC Expands, Improves Data Collection,” FCC Press Release, March 19, 2008. http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-280909A1.pdf .

³³ “FCC Expands, Improves Data Collection,” FCC Press Release, March 19, 2008. http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-280909A1.pdf .

See also “FCC Wireline Competition Bureau Presentation of the Section 706 Report and Broadband Data Gathering Order,” March 19, 2008 Open Meeting, http://www.fcc.gov/WCB_031908_open_meeting_slides.pdf .

defining broadband service, but still failing to adopt a broadband benchmark that can be used for policy making. In order to reform the high-cost universal service program to address broadband services, a broadband speed benchmark must be established, and these Comments recommend a standard of symmetrical 10 Mbps as the appropriate service level for new broadband deployments that are supported by the Universal Service Fund. Funding priorities must be based, in part, on this speed benchmark. The critical element of a policy benchmark appears to be missing from the FCC’s new approach to broadband classification.

Table 1: Number of Connections in New FCC Broadband Tiers, Based on Data From the FCC’s March 2008 Report on High Speed Connections. Exact matching not possible in shaded cells.			
New Speed Tiers	Speed	Approximate Number in New Tier	Percent in New Tier(s)
1st Generation Data	200 kbps to 768 kbps	31,365,566	31.08%
Basic Broadband Tier 1	768 kbps to 1.5 Mbps	27,944,008	27.69%
Broadband Tier 2	1.5 Mbps to 3 Mbps		
Broadband Tier 3	3 Mbps to 6 Mbps	37,683,911	37.34%
Broadband Tier 4	6 Mbps to 10 Mbps		
Broadband Tier 5	10 Mbps to 25 Mbps	3,814,471	3.78%
Broadband Tier 6	25 Mbps to 100 Mbps	91,983	0.09%
Broadband Tier 7	Greater than 100 Mbps	21,708	0.02%

However, the FCC’s new broadband tiers help illustrate the problem with current broadband deployment. The shaded cells in Table 1 show approximations of the number of broadband connections that will appear in the five lowest tiers of the FCC’s new eight-tier categories.³⁴ Table 1 shows that it is likely that over 50 percent of broadband connections will be in the lowest three tiers.³⁵ However, because the FCC already reports data for the speed

³⁴ The naming convention developed by the FCC calls the lowest “tier” “1st Generation Data,” and also names seven other tiers based on speed levels. “FCC Wireline Competition Bureau Presentation of the Section 706 Report and Broadband Data Gathering Order,” March 19, 2008 Open Meeting, http://www.fcc.gov/WCB_031908_open_meeting_slides.pdf.

³⁵ These statistics are based on both business and residential high speed connections. Data on residential connections alone by speed classification are not available from the FCC, another weakness in FCC reporting. The new speed Tiers do not exactly match data reporting practices currently employed by the FCC. The shaded cells in Table 1 report the number of connections for the approximate speed range previously reported by the FCC. Data in Table 1 is drawn from “High Speed Services for Internet Access: Status as of June 30, 2007,” Federal Communications Commission, Industry Analysis and Technology Division, Wireline Competition Bureau, Table 5, (continued...)

ranges associated with the new Broadband Tiers 5–7, Table 1 shows what the FCC’s new classification will reveal for higher-quality broadband deployment—i.e., just under four percent of broadband connections in the United States deliver speeds in excess of 10 Mbps, a speed that is frequently observed in other advanced nations.³⁶

B. Detailed and Accurate Mapping is Necessary

Contributing to the FCC’s inability to pursue beneficial broadband policy is the persistent lack of information regarding the geographic deployment of broadband. Without accurate knowledge of where broadband is deployed, satisfying the statutory mandates associated with advanced service deployment is not possible.³⁷ The FCC’s approach to broadband reporting has been inadequate. As noted by the Joint Board, “broadband availability can vary on a street-by-street basis, sometimes on a house-by-house basis.”³⁸ Apparently, under the newly announced broadband reporting plan, the FCC will gather broadband data in the future on a Census Tract basis. While this may be an improvement over the previous five-digit zip code approach, it certainly does not rise to the level of granularity needed to ensure that all Americans have access to affordable and high-quality broadband. Rural Census Tracts cover relatively large areas, and the FCC’s new reporting may not convey sufficient detail.³⁹ There is no question that many

³⁵(...continued)

March 2008, http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-280906A1.pdf .

³⁶ See “Japanese Broadband World’s Fastest, Cheapest—Iceland Cools off in Global Broadband Penetration Rankings—US Broadband Penetration Grows to 85.9% Among Active Internet Users,” *WebSiteOptimization.com*, November 2007 Bandwidth Report, <http://www.websiteoptimization.com/bw/0711/>

³⁷ 47 U.S.C. §§706(a) and (c)(1).

³⁸ *Recommended Decision*, ¶13.

³⁹ In addition to identifying Census Tract reporting, statements made by an FCC Commissioner also indicate that information will be collected by the FCC at the “address level,” using numerous databases developed by commercial providers. Further details are not available at the time of this writing. “Statement of Commissioner Michael J. Copps, Approving in Part and Concurring in Part,” *In the Matter of Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscriber Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscriber Data*, WC Docket 07-38, Report and Order, and Further Notice of Proposed

(continued...)

Americans currently have the ability to purchase broadband, but data also strongly support the proposition that broadband is not available to all, and that most consumers do not have many choices for broadband.

The Joint Board’s mapping proposal requires a highly granular identification of areas where broadband is not deployed, but does not recommend mapping beyond unserved areas. This approach must be expanded to generate accurate data regarding the extent and quality of broadband deployment in all areas, so that both unserved and “underserved” areas can be identified.⁴⁰ Unless the FCC’s new broadband reporting approach produces a high level of detail, the Joint Board’s mapping recommendation must be revised to generate a more comprehensive picture of broadband deployment.

V. Universal Service Reform Requires Broadband Service Principles

Other nations have made a point of developing policies that support the deployment of broadband services to all citizens. For example, Finland has targeted policies that stress the importance of advanced communications technologies:

The aim of the Government Information Society Programme is to boost competitiveness and productivity, to promote social and regional equality and to improve citizens’ well-being and quality of life through effective utilisation of information and communications technologies.⁴¹

As a result, Finland, a nation with a lower population density than the United States,⁴² has higher

³⁹(...continued)

Rulemaking, March 19, 2008.

⁴⁰ The *Recommended Decision* (§12) identifies as a secondary purpose of the proposed Broadband Fund as providing “grants for new construction to enhance broadband service in areas with substandard service.” This also suggests the need to quantify the level of service in “underserved” areas.

⁴¹ *Information Society Programme*, 2006, http://www.tietoyhteiskuntaohjelma.fi/esittely/en_GB/introduction/_files/1123329700000607/default/tietoyhteiskuntaohjelma_2006_en.pdf .

⁴² Finland’s population density is about 16 inhabitants per square kilometer. Over 40 percent of Finland’s population resides in rural areas. S. Darjalainen, Ministry of Agriculture and Forestry, Finland, “Bridging the Broadband Gap in Rural Areas,” Presented at the European Commission’s *Broadband Gap 2007* program, May 15, 2007,

(continued...)

broadband subscription, higher average data transmission speeds, and lower broadband prices than the United States.⁴³

Recognizing that the United States is falling behind other nations, such as Japan,⁴⁴ the California Broadband Task Force has identified a higher broadband standard:

The major gating factor in the improvement of broadband applications is the speed of access to the network. Just as text-oriented applications improved in quality and quantity as dial-up modem speeds increased from 9.6 kbps to 56 kbps, so too have broadband applications exploded as businesses and consumers have moved from 56 kbps modems to 500 kbps to 1 Mbps to 3 Mbps broadband connections. Newer, better broadband applications like high-quality video conferencing, remote medical care, distance learning, and remote monitoring will require broadband connections of symmetrical 10 Mbps services and more. If Californians do not have access to broadband infrastructure that is capable of providing these higher speeds, they will be separated from the benefits that broadband applications can bring them.⁴⁵

The California Broadband Task Force is correct to identify symmetrical broadband as the technology to promote innovation and economic development.

Programs that subsidize broadband deployment should promote high-quality symmetrical broadband. These Comments propose an initial benchmark of symmetrical data speeds of 10 Mbps.⁴⁶ Priority should be established for the support of newly deployed or upgraded broadband services that achieve minimum symmetrical data speeds of 10 Mbps. Unless there are compelling technical impediments, support for new or upgraded broadband deployments at speeds any less than this will be a misappropriation of subsidy funds that will hinder broadband

⁴²(...continued)

http://ec.europa.eu/information_society/istevent/broadband_gap_2007/cf/document.cfm?doc_id=4433 .

See also <http://virtual.finland.fi/netcomm/news/showarticle.asp?intNWSAID=24856> .

⁴³ OECD Broadband Portal, data for June 2007, <http://www.oecd.org/sti/ict/broadband> .

⁴⁴ The California Broadband Task Force indicates that advertised broadband speeds in Japan average download speeds of 95 Mbps. See “The State of Connectivity—Building Innovation Through Broadband,” Final Report of the California Broadband Task Force, January 2008, 17.

⁴⁵ “The State of Connectivity—Building Innovation Through Broadband,” Final Report of the California Broadband Task Force, January 2008, 36.

⁴⁶ This initial data speed target should be evaluated on a regular basis, and increased as broadband deployment advances.

benefits.

The FCC should adopt broadband deployment principles that ensure that subsidy dollars provide the maximum benefit. These principles must acknowledge the technical capabilities of supported broadband services; the ability of consumers to afford supported broadband services; and the ability of consumers to utilize supported broadband services in a manner that is not inappropriately controlled by the broadband provider. These Comments recommend the FCC adopt the following Broadband Service Principles for supported services:

- For purposes of broadband support through any new broadband expansion fund, priority should be given to the deployment of broadband that is characterized by a baseline symmetrical data speed of 10 Mbps. This speed should be adopted as a benchmark for new deployments of supported broadband services.
- Supported broadband services should be affordable. Affordability standards should be established by the states, as the factors that drive affordability are likely to be regional in nature, and state commissions are closer to the relevant constituencies. State proceedings should be held to develop state standards for affordable broadband, in light of statutory guidance that requires that rates be reasonably comparable across rural and urban areas. To receive a broadband subsidy, supported providers must opt into the affordability standards.
- Supported broadband services should enable consumer choice of Internet services and Internet applications.

These principles provide the foundation of meaningful reform of universal service programs that support broadband. The application of these principles to the reform process will be discussed in later sections of these Comments.

VI. Evaluation of the Joint Board’s High-Cost Fund Reform Proposal

Reform of high-cost universal service support should be consistent with statutory objectives. The 1996 Act identifies four principles that qualify services for federal universal service support, namely, telecommunications services that

- are essential to education, public health, or public safety;
- have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers;
- are being deployed in public telecommunications networks by telecommunications

carriers; and

- are consistent with the public interest, convenience, and necessity.⁴⁷

The Joint Board has identified traditional voice grade wireline service, wireless (voice) mobility services, and broadband as satisfying the qualifying four principles.⁴⁸ The Joint Board’s *Recommended Decision* identifies three universal service funds; a traditional Provider of Last Resort Fund (POLR Fund), a new Mobility (wireless) Fund, and a new Broadband Fund.⁴⁹ The Joint Board indicates that these three new funds will be implemented under a funding cap that is constrained to current levels of high-cost funding.⁵⁰

Given that the Joint Board proposes to proceed with reform under the existing cap, the creation of three funds creates an “opportunity cost” environment. Monies for the three new funds must add up to no more than the total associated with the existing fund. This raises key concerns associated with the priorities of the three funds. While it is likely that mobility services have met the threshold requirements for inclusion as a supported service, there is no evidence that the United States is facing a mobility-service deployment crisis. There is, however, substantial evidence that the United States is experiencing profound shortfalls in broadband deployment and quality. The broadband deployment shortfalls deserve priority within the context of reforming high-cost universal service support. The creation of the Mobility Fund may be a reasonable means to extricate the FCC from the ballooning levels of support flowing to wireless eligible telecommunications carriers (ETCs); however, the Mobility Fund should be

⁴⁷ 47 U.S.C. §254(c)(1).

⁴⁸ *Recommended Decision*, ¶4.

⁴⁹ Throughout the Joint Board’s *Recommended Decision*, the Joint Board associates the Broadband Fund with either “broadband Internet service” or “broadband Internet access service.” The Joint Board appears to use these terms interchangeably. The inclusion of the word “access” is important as this term implies that broadband is providing the consumer the greatest ability to utilize Internet applications and services of the consumer’s choice. The distinction is important. For example, AT&T offers some of its customers Internet protocol television (IPTV). IPTV is a “broadband Internet service,” but AT&T’s IPTV it is not “broadband Internet access service.”

⁵⁰ *Recommended Decision*, ¶11.

constrained to the maximum extent feasible. As will be discussed further below, these Comments support the FCC’s tentative conclusion that Mobility Fund recipients should demonstrate funding needs using a technology-specific cost basis for the receipt of support—the identical support rule should be eliminated. However, revenues of mobility providers should also be considered in light of cost findings to determine whether mobility service offerings require subsidy at all.

It should also be noted that once services have been identified as appropriate for inclusion in the group of services supported by the universal service funds, then the basic universal principles identified in the 1996 Act apply, including the provision that specifies that “quality services should be available at just, reasonable, and affordable rates.”⁵¹ While the Joint Board nominates both wireless mobility services and broadband services to be included in the definition of supported services, the Joint Board makes no recommendation regarding how affordability standards should be developed. These Comments recommend that affordability standards be addressed on a state-by-state basis, through proceedings held by state commissions. Variations in incomes and living costs are better incorporated into the evaluation process at a state level.

The Joint Board’s proposal to create three funds under the current funding cap is unlikely to provide the necessary foundation to reform high-cost universal service funding in a manner that meaningfully promotes the universal availability of affordable broadband services in high-cost areas. The incremental changes identified by the Joint Board do not sufficiently address critical problems facing American consumers, and the U.S. economy, regarding the deployment of broadband. As will be discussed in more detail below, modifications to the Joint Board’s recommended approach will enable a superior outcome, even under the proposed cap.

⁵¹ 47 U.S.C. §254(b)(1).

A. Inconsistencies in the Joint Board’s Approach

Correcting inconsistencies in the Joint Board’s approach could improve high-cost universal service funding reform. The Joint Board begins with the existing fund, capped at \$4.5 billion,⁵² and identifies the objective of “support[ing] only one wireline, one wireless, and one broadband provider in any given area.”⁵³ The support for a single mobility provider will substantially alter the structure of the fund, and the Joint Board’s proposed approach to the creation of a Mobility Fund has merit. However, the Joint Board’s approach to mobility reveals weaknesses in the Joint Board’s approach to broadband.

i. The Joint Board’s General Approach to the Mobility Fund

While there are problems with the Joint Board’s proposed Mobility Fund, and these will be discussed in a later section of these Comments, the Joint Board’s general approach to the creation of the Mobility Fund has merit. The Joint Board’s general approach to the Mobility Fund can be summarized as follows: (1) eliminate the identical support rule and quantify the cost of providing the supported mobility service, based on the technology deployed to provide the supported mobility service; (2) using a cost basis specific to wireless ETCs, identify the subsidies that are needed to provide mobility services; and, (3) make the previously implicit subsidies for mobility services explicit through the creation of a new fund.⁵⁴ These components of the Joint Board’s approach to the creation of the Mobility Fund have appealing logic, and can provide a reasonable foundation to encourage efficient reform.⁵⁵

⁵² *Recommended Decision*, ¶28.

⁵³ *Recommended Decision*, ¶37.

⁵⁴ The use of the term “implicit subsidies” in this context should not be confused with the application of that term to describe the generation of subsidy through internal company pricing practices. See *In the Matter of Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, FCC 97-157, May 8, 1997, ¶10 and footnote 15. Rather, the Joint Board has recognized that the existing high-cost universal service fund has been implicitly supporting mobility services.

⁵⁵ As discussed earlier, whether the Joint Board has set the proper priority for the monies that are freed up through the creation of the Mobility Fund is not clear—broadband deployment deserves a
(continued...)

The monies for the creation of the new Mobility Fund will follow wireless firms that currently receive support as competitive ETCs from the existing fund as they migrate to the Mobility Fund. In addition, monies for the new mobility fund will be generated by the elimination of the identical support rule, and the resulting reduction in subsidy pay-outs to wireless ETCs.⁵⁶ One key element of the Joint Board’s approach to the creation of the Mobility Fund is the recognition of duplicate support under the current system—i.e., wireless ETCs provide a service that is used by consumers in conjunction with their basic wireline service.⁵⁷ A second key element of the Joint Board’s approach to mobility services is the recognition of the impact of alternative technologies on the cost of service—the costs of wireless and wireline ETCs are profoundly different.⁵⁸ Reforming the fund in light of the recognition of duplicate support and cost differences frees up funds that can be applied to other purposes. The importance of the Joint Board’s recognition of duplicate support and technology-specific cost justification cannot be overemphasized.⁵⁹

ii. The Joint Board Ignores Its Mobility-Fund Logic with the Broadband Fund

The existing high-cost universal service funding approach has not been providing implicit subsidization exclusively for mobility services. The Joint Board also correctly

⁵⁵(...continued)

higher priority than the upgrades to existing mobility services proposed by the Joint Board.

⁵⁶ *Recommended Decision*, ¶¶27 and 28.

⁵⁷ *In the Matter of High-Cost Universal Service Support; Federal-State Joint Board on Universal Service*; WC Docket No. 05-337; CC Docket No. 96-45, Notice of Proposed Rulemaking, FCC 08-4, January 29, 2008, ¶9.

⁵⁸ *Recommended Decision*, ¶5.

⁵⁹ With regard to wireless ETCs the FCC has proposed an embedded cost framework for data collection and the establishment of support for the Mobility Fund. Given that the Mobility Fund proposed by the Joint Board encompasses the extension of service into unserved areas, the relevance of embedded costs is questionable. Application of a cost methodology that utilizes a forward-looking perspective will allow for the incorporation of data regarding the current state of technology, and current input costs, associated with reaching unserved areas. For the FCC’s discussion of the cost basis, see: *In the Matter of High-Cost Universal Service Support; Federal-State Joint Board on Universal Service*; WC Docket No. 05-337; CC Docket No. 96-45, Notice of Proposed Rulemaking, FCC 08-4, January 29, 2008, ¶¶18-19.

recognizes that under the current funding arrangement the subsidization of basic voice service has also implicitly supported the deployment of broadband services.⁶⁰ However, the Joint Board does not address this overlapping support with the Broadband Fund and POLR Fund. Thus, the Joint Board fails to account for the implicit support for broadband services that characterizes many supported carriers' operations.

The Joint Board also does not recognize the different cost structure arising for firms that have integrated the provision of voice and broadband services. Telephone companies provide broadband services (typically DSL) using much of the same plant that provides voice-grade services.⁶¹ Many supported incumbent local exchange carriers (ILECs) jointly provide voice and broadband services. The nature of ILEC technology inextricably links the costs of providing voice and broadband services on an integrated basis—it also creates a linkage with the supported carrier's voice and broadband revenues. Some of the support monies awarded to these companies has been applied to upgrade their networks, resulting in the addition of broadband services to the supported firms' revenue sources. The resulting increase in revenues diminishes the need for support. Because the Joint Board has not addressed these issues, the Joint Board has missed an important opportunity to rationalize high-cost universal service support, and to free up more funds for broadband expansion or improvement.

B. Reform Must Address Current Implicit Broadband Subsidies

The Joint Board indicates that monies for the Broadband Fund could be obtained by “moving dollars from legacy programs.”⁶² The Joint Board also recognizes that high-cost support is currently contributing to broadband deployment.⁶³ The fact that legacy programs are currently providing implicit support for broadband points to a reasonable basis for revising

⁶⁰ *Recommended Decision*, ¶39.

⁶¹ George Abe, *Residential Broadband*, 2nd ed., Cisco Press, 2000, 165.

⁶² *Recommended Decision*, ¶29.

⁶³ *Recommended Decision*, ¶30.

legacy funds to reflect the actual uses of subsidy monies.⁶⁴

The FCC should reform the high-cost universal service program to leverage the implicit subsidy flows that have supported ILEC broadband deployment, and that have also led to increased revenue opportunities for these companies. The FCC must also establish procedures to hold subsidy recipients accountable for their use of subsidy monies, and determine whether universal service support is being effectively used by carriers. Finally, the general principles recommended by the Joint Board's to create the Mobility Fund are equally applicable to voice and broadband services. The FCC should make the subsidy flows that support the integrated provision of voice and broadband services explicit.⁶⁵ The FCC should also assess funding needs based on an evaluation of the costs of jointly providing voice and broadband services, and the associated revenues of providing these services. Unless it takes these actions, the FCC will not be able to reform the high-cost program in a manner consistent with overarching objectives associated with voice and broadband deployment.

VII. Rational Reform of Voice and Broadband Funding

This section describes the actions that must be taken to reform high-cost universal service funding. First, the FCC should create an "Integrated POLR Fund" to provide support for voice and broadband services. The Integrated POLR Fund will enable reform in light of supported telephone companies' joint provision of voice and broadband services. The *Recommended Decision* indicates that it is desirable to support only one POLR and one broadband provider in any geographic area.⁶⁶ Recognizing that the voice and broadband provider are likely to be the same company can improve the efficiency of delivering support—supporting a single integrated

⁶⁴ While the current implicit level of broadband support is unknown, the FCC could also require a cost-based evaluation of the combined offering of voice and broadband services by current ILEC ETCs. Such an evaluation would allow the FCC to establish standards or best practice guidelines for the distribution of broadband funds. This issue will be discussed further below.

⁶⁵ 47 U.S.C. §254(e) identifies the requirement of explicit subsidies being applied for the purposes identified by the FCC.

⁶⁶ *Recommended Decision*, ¶¶37, 43.

POLR will further improve efficiency. In addition, the FCC should create a Broadband Expansion Fund to address extending broadband services to unserved areas, and improving the quality of existing broadband facilities. Second, to implement effective reform, the FCC should conduct an audit of current subsidy recipients to determine the extent and quality of broadband coverage. This audit will complement the mapping of broadband deployment proposed by the Joint Board. Third, the FCC should establish the cost basis for the joint provision of voice and broadband services. Fourth, the FCC must acknowledge revenue streams arising from both voice and broadband services. Fifth, the FCC must develop and apply effective regulatory tools to ensure efficient use of funds. Finally, broadband services should be assessed a contribution for universal service support. The funds resulting from assessing a universal service contribution on broadband services should be applied to expand support available for broadband in unserved and underserved areas; to expand the Lifeline and Link-Up programs to include broadband; and to reduce voice service contributions to the universal service fund. If the FCC follows this approach, high-cost support will be established on a rational basis, and higher levels of funding will become available to support broadband expansion and improvement. These actions are discussed in more detail below.

A. Creation of an Integrated POLR Fund and Broadband Expansion Fund

All supported wireline carriers that provide voice and broadband should be migrated to a new fund that provides combined support for voice and broadband services. To distinguish the mission of this fund, the term “Integrated POLR Fund” is used to reflect the fact that the supported carriers provide both voice and broadband services. The FCC should conduct the initial transition to the Integrated POLR Fund under an overall subsidy cap.⁶⁷ All supported wireline carriers that currently provide voice and broadband services should be migrated to the

⁶⁷ That is, the current subsidy distribution to the carriers that are candidates for the integrated voice/broadband fund will not see subsidy increases as a result of the review.

Integrated POLR Fund immediately.⁶⁸

As will be discussed further below, a new cost and revenue basis for funding must be established, and will likely free up existing subsidy dollars, leading to the desirable outcome of a higher level of funding becoming available for the separate Broadband Expansion Fund. The Broadband Expansion Fund will focus on first extending service to unserved areas, and second on upgrading existing broadband offerings of supported Integrated POLRs. As will be discussed further below, following an evaluation of the results of broadband data collection and mapping, the FCC should set the initial level of the Broadband Expansion Fund to ensure adequate funding given the anticipated need for broadband deployment projects. The rationalization of universal service support recommended in these Comments will generate additional funds that can be applied to fund broadband expansion, however, it is also appropriate to institute a universal service assessment on broadband services to generate additional funds needed for broadband expansion.⁶⁹

Migration of integrated voice/broadband providers to a fund that provides support based on those carriers' costs and revenues is not the end of the reform process. Current high cost support recipients that have not deployed broadband also deserve attention. These "voice only" companies should also be migrated to the Integrated POLR Fund, over a five-year period. "Voice only" providers can utilize the opportunity presented by the Broadband Expansion Fund to upgrade their networks, so they too can achieve the economies of integrated voice/broadband providers.

⁶⁸ To the extent that multiple supported wireline-based POLRs currently provide both voice and broadband services in a geographic area, these firms should be migrated to the Integrated POLR Fund. A single supported Integrated POLR should be established either through the application of cost analysis, or through a competitive tender, such as a "request for proposal." Unless the FCC expects numerous competing bidders, a reverse auction process is unlikely to be useful for establishing a single POLR.

⁶⁹ The additional annual funding should be a further increment to the \$300 million for broadband expansion identified by the Joint Board.

B. Conduct a Thorough Audit of Current Subsidy Recipients

There is a critical need for a thorough audit of the current high-cost universal service program, including a detailed inventory of the level of broadband service available from supported providers. The Joint Board recognizes the need for detailed mapping for “unserved areas.”⁷⁰ However, it is critical that detailed mapping be more generally developed, to identify the quality and extent of broadband availability across geographic areas. Auditing current high-cost funding recipients can contribute to the accurate assessment of broadband deployment. While the FCC has recently taken action to modify reporting requirements associated with high-cost funding,⁷¹ the FCC’s actions do not appear to be sufficient to advance universal service in the broadband era. The ability of the FCC to manage the size of the fund, and to efficiently target support depends on improved verification procedures. The FCC should conduct a baseline audit of supported companies that identifies key information that goes beyond that identified in its *Universal Service Fund Review Order*. Specifically the FCC should obtain data on:

- » Which supported companies have deployed broadband
- » The specific investments made that have enabled broadband
- » The extent of broadband availability within supported companies’ service areas
- » The quality of broadband, as measured in upload and download speeds, available from supported companies
- » The price of broadband services available from supported companies
- » Current broadband subscription rates and revenues for each supported company, and
- » Specific technical impediments that have limited ubiquitous broadband

⁷⁰ *Recommended Decision*, ¶15.

⁷¹ *In the Matter of Comprehensive Review of the Universal Service Fund Management, Administration, and Oversight; Federal-State Joint Board on Universal Service; Schools and Libraries Universal Service Support Mechanism; Rural Health Care Support Mechanism; Lifeline and Link-Up; Changes to the Board of Directors for the National Exchange Carrier Association, Inc.*, WC Docket No. 05-195, CC Docket No. 96-45, CC Docket No. 02-6, WC Docket No. 02-60, WC Docket No. 03-109, CC Docket No. 97-21, FCC 07-150, Report and Order, August 29, 2007. (*Universal Service Fund Review Order*.)

deployment in a supported broadband provider's service area⁷²

Adding this information to that currently required by the FCC from ETCs will allow the FCC to assess the impact of current subsidy disbursements on broadband deployment. Such an audit will also help the FCC determine the incremental investments necessary to make high-quality broadband universally available,⁷³ and identify best practices. Support for a unified network platform that delivers voice and broadband can help to ensure high-quality voice and broadband services at lower costs. This approach will also appropriately identify revenue sources that can offset the need for support.

C. Calculate the Cost of Service Based on Integrated Operating Practices

Furthermore, just as wireless and wireline service providers have different cost structures, so do telephone companies that have upgraded their networks to provide broadband. These companies now enjoy economies of scope⁷⁴ that were previously unavailable. As a result of scope economies, the unit costs of providing both voice and broadband services on a combined basis are lower than would be the case if the services were separately provided. A key element of the scope economies enjoyed by telephone companies that have upgraded their networks to provide broadband is the cost savings associated with the sharing of the local loop.

The Joint Board notes:

The High Cost Loop program supports investment and expenses associated with local loops, even when those loops are broadband-capable. Indeed, carriers with higher quality facilities generally tend to have more costly loops and thus tend to be eligible for more

⁷² These could be factors such as terrain, adverse weather conditions, or insular customer locations.

⁷³ The *Recommended Decision* (§53) acknowledges the need to perform marginal analysis to determine the level of support needed to expand broadband for a service provider with existing voice facilities in place.

⁷⁴ “Scope economies” arise if the unit cost of production decreases as a firm produces an increasing variety of products or services. For example, if a firm were to sell only basic voice service, the entire cost of the telephone network would need to be recovered from the single service. Alternatively, much of the same network equipment is used to produce vertical features, toll, and DSL services, and this points to shared costs and scope economies. Shared costs can be recovered from a variety of services.

HCL support.⁷⁵

The Joint Board also notes that High Cost Loop support has increased during this decade.⁷⁶ The FCC should apply the same logic to existing incumbent ETCs as the FCC has tentatively concluded should apply to competitive ETCs—funding should be based on an accurate assessment of costs that reflect the supported carrier’s operations.⁷⁷ If carriers have deployed broadband, their cost of delivering voice and broadband services on a combined basis are lower than if separate wireline voice and wireline broadband providers were to provide the services.⁷⁸ As discussed above, typical ILEC broadband deployments share local loops between voice and broadband services.⁷⁹ However, after the network is capable of providing DSL broadband, the basic copper loop technology now provides two distinct service families—voice services and high-speed data services. The *Recommended Decision* suggests that a “comprehensive” evaluation of ILEC costs may be appropriate.⁸⁰ Such an approach is critical, and the FCC must establish a cost basis for determining subsidy needs of supported firms that provide voice and broadband service on an integrated basis. The increased scope economies also suggest that cost recovery of the shared copper loop is appropriate across the two service families, and the contribution provided by broadband services to loop cost recovery should result in reduced need for subsidy of voice services.

A recent example clearly illustrates the potential efficiencies of the joint provision of

⁷⁵ *Recommended Decision*, ¶57, footnote 55.

⁷⁶ *Recommended Decision*, ¶22. The increase in high cost loop support may not be entirely attributable to broadband deployment, as the Joint Board notes that line loss may also play a role. See ¶22, footnote 23 of the *Recommended Decision*.

⁷⁷ *In the Matter of High-Cost Universal Service Support; Federal-State Joint Board on Universal Service*; WC Docket No. 05-337; CC Docket No. 96-45, Notice of Proposed Rulemaking, FCC 08-4, January 29, 2008, ¶12.

⁷⁸ Scope economies will be reflected in either embedded or forward-looking cost calculations.

⁷⁹ Other incremental investments and expenses also need to be made, such as line conditioning and the installation of digital subscriber line access multiplexers (DSLAMs).

⁸⁰ *Recommended Decision*, ¶31.

voice and broadband. While most ILECs that offer voice and broadband services are doing so with the use of legacy circuit-switched voice, some supported carriers are moving to integrated IP-based voice that runs on their DSL network. Embarq, a supported company that received \$152 million in federal high cost funding in 2007,⁸¹ has recently launched a product that provides voice services directly over a DSL connection. According to Embarq:

Embarq is the first communications company to offer its customers a cordless home phone with visual voicemail, news and information, personal phone books and local phone directories. Now customers can get information they need, when they need it, without having to turn on their computer and log on to the Internet.⁸²

This points to a deeper integration of voice and broadband services and clearly illustrates the need to evaluate the costs of the integrated provision of voice and broadband services.

D. Acknowledge Subsidy Recipients' Current Business Model, and Quantify Broadband Revenues

Subsidies for the provision of “basic voice” service through the existing high cost funding approach have persisted at relatively constant levels in spite of the fact that the provision of basic voice service is likely to be one of many services that a firm may be able to sell to residential consumers. While the scope economies associated with a firm providing basic voice, vertical features, toll, high-speed data, and video services have grown substantially, the demand for basic service subsidies has not declined.⁸³ This is an irrational economic outcome. As the supported carriers' scope economies increased, the economically necessary level of subsidy should have declined.

⁸¹ Embarq Corporation Form10-K for the Year Ending December 31, 2007, February 29, 2008, 15, <http://www.sec.gov/Archives/edgar/data/1350031/000119312508043365/d10k.htm> .

⁸² Embarq new release, April 8, 2008, [http://investors.embarq.com/phoenix.zhtml?c=197829&p=irol-newsArticle&ID=1126966&highlight=\)](http://investors.embarq.com/phoenix.zhtml?c=197829&p=irol-newsArticle&ID=1126966&highlight=))

⁸³ While growth in the level of the federal high-cost universal service fund has properly been associated with the expansion of subsidy to competitive eligible telecommunications carriers (CETCs), the universal service payments to wireline carriers increased in the 2000-2003 period, and have been stable since. See, *In the Matter of High Cost Support, Federal-State Joint Board on Universal Service*, WC Docket 05-377, CC Docket 96-45, FCC 07-88. Notice of Proposed Rulemaking, May 14, 2007, Appendix A.

Current funding levels continue to reflect erroneous assumptions that voice services alone are provided over the supported carriers network. Supported carriers have updated their networks to provide broadband, using, in part, universal service funds. With these network upgrades they have also gained access to a new revenue source—broadband service revenue. As a result, a beneficial impact on high-cost universal service funding should arise as some supported carriers have generated operating synergies and economies of scope.

For example, CenturyTel, a supported company that received approximately \$300 million in federal universal service support in 2007 (including \$166 million in high-cost loop support),⁸⁴ reports that its business extends well beyond basic voice service:

We derive our data revenues primarily from monthly recurring charges for providing Internet access services (both high-speed and dial-up services) and data transmission services over special circuits and private lines. We began offering traditional dial-up Internet access services to our telephone customers in 1995. In late 1999, we began offering high-speed Internet access services, a premium-priced broadband data service. As of December 31, 2007, approximately 84% of our access lines were broadband-enabled. At December 31, 2007, we provided high-speed Internet access services to over 555,000 customers and dial-up services to nearly 68,000 customers. During 2007, we added over 186,000 high-speed Internet customers (which includes approximately 58,000 from the Madison River acquisition).⁸⁵

CenturyTel indicates that more than 17 percent of its overall revenues come from the provision of data communications services, including both broadband and dial-up Internet access.⁸⁶ This business model challenges the traditional approach to universal service support. Given the sea change that has occurred in this industry, funding approaches and subsidy levels established when supported companies provided voice services alone should not remain unexamined. The Joint Board indicates that one method to reform the legacy POLR fund is to consider

⁸⁴ CenturyTel indicates that total universal service revenues from state and federal programs made up 12.6 percent of its operating revenues for 2007. CenturyTel, Inc. Form 10-K, for the year ending December 31, 2007. <http://www.sec.gov/Archives/edgar/data/18926/000001892608000004/form10k2007.htm> .

⁸⁵ CenturyTel, Inc. Form 10-K, for the year ending December 31, 2007. <http://www.sec.gov/Archives/edgar/data/18926/000001892608000004/form10k2007.htm> .

⁸⁶ Ibid.

“unregulated revenues in calculating carriers’ need for support.”⁸⁷ Such an evaluation is entirely appropriate and could result in subsidy reductions that would free up funds that could be appropriately applied to extend broadband into unserved areas, or support upgrades to existing broadband facilities.

E. The FCC Must Apply Effective Regulatory Tools to Ensure the Efficient Use of Support

As discussed elsewhere in these Comments, incremental cost analysis may be needed to identify the appropriate level of funding for network expansion.⁸⁸ It is unlikely that an embedded cost approach will yield reasonable results to determine the costs of expanding broadband facilities into unserved areas. Similarly, embedded costs are unlikely to provide a reasonable gauge of funding needs for network upgrades. Both of these points of potential analysis require evaluation of forward-looking costs. While it is possible that competitive bidding, such as the use of an auction, could dispense with the need for cost analysis, whether there will be sufficient competitive entry in high-cost market areas to ensure that competitive bidding will generate efficient outcomes is unknown. However, given that the “entry” the FCC has witnessed in these rural markets is almost exclusively from wireless carriers (that the FCC now acknowledges are serving a separate mobility market),⁸⁹ it seems doubtful that robust rivalry for wireline voice or broadband subsidies will emerge.

Thus, the FCC must apply regulatory tools to ensure that support is efficiently

⁸⁷ *Recommended Decision*, ¶31.

⁸⁸ The *Recommended Decision*, while not emphasizing the importance of economic cost analysis, identifies tasks that can only be completed with the benefit of economic cost principles. For example, the *Recommended Decision* indicates that subsidy may be required for either mobility or broadband networks where “service is essential but where usage is so slight that a plausible economic case cannot be made to support construction and ongoing operations, even with a substantial construction subsidy.” (*Recommended Decision*, ¶12, ¶16.) Evaluation of the economic case for operating subsidies points to the need for an application of economic tools, including the application of economic costing principles. Likewise, distributing funds for network expansion or upgrade will require a forward-looking perspective.

⁸⁹ *In the Matter of High-Cost Universal Service Support; Federal-State Joint Board on Universal Service*; WC Docket No. 05-337; CC Docket No. 96-45, Notice of Proposed Rulemaking, FCC 08-4, January 29, 2008, ¶9.

distributed. The FCC must develop sufficient expertise to ensure that support is supplied to projects that reflect best practices associated with network expansion or upgrade, and to apply forward-looking principles to establish reasonable funding levels and benchmarks associated with expansion or upgrades of broadband or mobility networks.⁹⁰ Furthermore, the application of the project ranking approach discussed in more detail later in these Comments will encourage the efficient distribution of funds. Finally, requiring that carriers receiving support supply matching funds for network expansion or upgrade will also reduce the need for ratepayer-supplied subsidy funds, and improve the effectiveness of the fund.

F. The FCC Must Collect Universal Service Contributions from Broadband Services

While the FCC has mandated contributions from interconnected VoIP service providers,⁹¹ the FCC has to date refused to collect universal service contributions from broadband connections. If broadband services are to receive explicit support, as they do under the Joint Board’s proposal, requiring that voice services alone fund broadband services is inequitable and establishes an inappropriate cross-subsidization. Before a broadband assessment can be established, additional data are required. Following the production of accurate maps that establish the extent of unserved and underserved areas, and following the audit of supported carriers, the FCC should project support needed to meet the broadband policy objectives

⁹⁰ The *Recommended Decision* (¶53) points to the need to apply “marginal” concepts when distributing broadband expansion funds. Similar analysis is appropriate for determining the cost basis of support for the expansion or upgrade of either mobility or broadband services.

⁹¹ *In the Matter of Universal Service Contribution Methodology; Federal-State Joint Board on Universal Service; 1998 Biennial Regulatory Review –Streamlined Contributor Reporting Requirements Associated with Administration of Telecommunications Relay Service, North American Numbering Plan, Local Number Portability, and Universal Service Support Mechanisms; Telecommunications Services for Individuals with Hearing and Speech Disabilities, and the Americans with Disabilities Act of 1990; Administration of the North American Numbering Plan and North American Numbering Plan Cost Recovery Contribution Factor and Fund Size; Number Resource Optimization; Telephone Number Portability; Truth-in-Billing and Billing Format; IP-Enabled Services*, WC Docket No. 06-122; CC Docket No. 96-45; CC Docket No. 98-171; CC Docket No. 90-571; CC Docket No. 92-237; File No. L-00-72; CC Docket No. 99-200; CC Docket No. 95-116; CC Docket No. 98-170; WC Docket No. 04-36, Report and Order and Notice of Proposed Rulemaking, FCC 06-94, June 27, 2006, ¶2.

identified in these Comments, including an expansion of Lifeline and Link-Up to support broadband services. Using this projection, the FCC should then establish the assessment on broadband services. In addition, the FCC should use the broadband assessment to offset a portion of current universal service contributions from voice services, as it is reasonable for the contribution that voice services have been making to broadband deployment be reduced as subsidy support is generated by the assessment on broadband services.

For example, suppose that the FCC determined that \$1 billion per year were needed to pursue broadband policy objectives. Given that the Joint Board expects that \$300 million will be generated from the elimination of the identical support rule, this would indicate that an additional \$700 million would need to be generated on an annual basis to meet broadband objectives. Thus, given current broadband subscription, an assessment of \$1 per month on broadband services would generate monies sufficient to fund the additional \$700 million for the pursuit of broadband objectives, and also to reduce universal service support collected from voice services by \$500 million.⁹² As broadband subscription grows, additional funds generated should also be divided between the two purposes of reducing voice service contributions, and increasing the funds for broadband expansion and Lifeline and Link-Up. The FCC should conduct a proceeding that fully evaluates the rebalancing of universal service contributions from voice and broadband services.

G. Summary of Rational Reform to Voice and Broadband Funding

If the FCC hopes to reform high-cost universal service funding, it must recognize the impact of integrated provision of voice and broadband services on the supported carriers' operations, and on the need for funding. The Joint Board's general approach to the Mobility Fund offers a reasonable model for reform. With the Mobility Fund the Joint Board recognizes

⁹² Given current subscription levels identified by the FCC to high-speed services (100 million connections), \$1.2 billion in contribution from broadband services (i.e., funds sufficient to generate the \$700 million and \$500 million in the example) would require an assessment of \$1 per broadband connection per month.

the support for mobility services that are implicit in the current funding approach. The Joint Board also acknowledges the differences in costs associated with technologies used by mobility providers. Building off of this cost-based foundation, the Joint Board identifies a means of freeing up funds for expanding both mobility deployments and broadband deployments. As described above, the FCC should adopt a similar approach for broadband. Recognizing and identifying the implicit support for broadband in the existing funding system is the appropriate starting point. To identify implicit support, the FCC must establish a cost basis for supporting the integrated provision of voice and broadband services, and the FCC must recognize the impact of broadband revenues on the need for support. This will likely have the same impact as the cost-based approach recommended by the Joint Board for the Mobility Fund, i.e., subsidy monies will be freed up that can be used to provide additional funds for broadband expansion and upgrades. The FCC should also phase out funding for “voice only” carriers, and, where appropriate, utilize the Broadband Expansion Fund as a carrot to encourage these providers to deploy broadband.

Whether the FCC will adopt the approach recommended in these Comments is unknown. Thus, additional discussion is provided below on the specifics of the Joint Board’s Broadband Fund, Mobility Fund, and POLR Fund proposals. While some of the discussion that follows is directed at the framework proposed by the Joint Board for its Broadband Fund, many of the suggestions identified (e.g., the prioritization and ranking criteria) are also applicable should the FCC pursue the alternative approach to reform of the high-cost universal service program discussed above.

VIII. Evaluation of Specific Components of the Joint Board’s Proposed Broadband Fund

The Joint Board proposal seeks to expand the scope of supported services to include broadband, and to support broadband funding in “unserved areas.”⁹³ The Joint Board proposes

⁹³ *Recommended Decision*, ¶12.

to dedicate \$300 million for broadband funding in unserved areas.⁹⁴ There is no question that the extension of broadband facilities into unserved areas should be a high priority. However, \$300 million is unlikely to provide sufficient funding to achieve this objective, and the Joint Board's proposed funding level is not based on a thorough assessment of broadband deployment needs. In addition, the Joint Board's \$300 million proposal overlooks the much larger issue of broadband deployment in areas that can be considered underserved, and the need to bring the Lifeline and Link-Up programs into the broadband era. As discussed above, a major shortfall in the Joint Board's approach to the new Broadband Fund is the failure to appropriately identify the current level of implicit support for broadband services in current wireline ETC funding, as well as overlooking the impact of new revenue streams enjoyed by supported carriers on the need for support. However, there are still substantial issues with the Joint Board's proposed Broadband Fund that the FCC must address, even if it proceeds without the benefit of additional data, or the intention to identify the impact of the implicit subsidies that are already flowing to support broadband deployment.

A. Defining Unserved Broadband Areas

The Joint Board recommends that the driving factor in allocating broadband support should be the number of residents of each state who are unable to purchase terrestrial broadband Internet service at their residences.⁹⁵ This recommendation is made without the benefit of a definition of broadband,⁹⁶ and it is unlikely that the FCC's new eight-tier broadband classification will provide sufficient remedy. As discussed above, a forward-looking broadband benchmark, such as the symmetrical 10 Mbps standard recommended in these Comments, is critical for developing a broadband support program.

A significant weakness in the Joint Board's approach to broadband is its primary focus

⁹⁴ *Recommended Decision*, ¶29.

⁹⁵ *Recommended Decision*, ¶15.

⁹⁶ *Recommended Decision*, ¶72.

on extending broadband into areas that are “unserved.” This approach does not acknowledge the fact that the quality of broadband is of paramount importance—high-quality state-of-the-art broadband has the ability to provide higher levels of economic benefit than “better than dial-up” services that may be classified as broadband. It is entirely appropriate to extend broadband support to upgrade broadband networks. The *Recommended Decision* identifies quality improvements for mobility services as an issue deserving attention.⁹⁷ It is even more important to extend quality considerations to broadband—broadband policy must address underserved areas. Given the limited level of funding proposed by the Joint Board, prioritization of funding must be established. Funding priority should follow the following hierarchy:

- Areas that currently have no mass-market data services other than dial-up and satellite should be defined as “unserved” areas.⁹⁸
- Areas that are not “unserved” may still qualify for funding as “underserved” areas, based on prioritization relating to factors such as existing data speeds and number of potential subscribers residing in the area. Areas with affordable symmetrical service at speeds of 10 Mbps or greater are not underserved. Further discussion of ranking is provided in a later section of these Comments.

This simple hierarchy identifies a reasonable baseline for establishing basic funding priorities associated with the Broadband Fund. Care must be taken to verify the unserved status of a proposed request for funds, to ensure the appropriate prioritization of projects. The FCC must verify, prior to the distribution of funds to build out services in unserved areas, that the areas are in fact unserved. It is not clear whether the FCC’s new broadband reporting requirements will provide sufficiently granular information to determine whether an area is unserved. The

⁹⁷ *Recommended Decision*, ¶16. As will be discussed further below, the FCC should proceed with caution regarding the application of subsidy dollars to improve the quality of wireless mobility services.

⁹⁸ The Joint Board’s *Recommended Decision* identifies “terrestrial” broadband. The FCC must distinguish between terrestrial-based fixed and mobility data services. Due to their high prices and service limitations, mobility data services are not a reasonable substitute for fixed services. Prioritization of funding should separately account for the presence of mobility services. Areas with mobility data service alone should take higher funding priority over area that have both mobility and fixed broadband available, as the absence of fixed broadband alternative leaves the area underserved.

broadband mapping proposed by the Joint Board will likely contribute to the needed determination; however, the FCC must audit maps produced by the states, to ensure consistent criteria have been applied in identifying unserved areas. Public notice should be posted regarding the nomination of unserved areas to allow interested parties to provide input regarding the availability of broadband in areas where carriers are seeking support.

B. Addressing Underserved Areas

Given the lack of reliable and specific data regarding broadband availability, it is not clear how quickly the \$300 million fund will be exhausted. Evidence points to a substantial need for subsidy support to address the needs of unserved and underserved areas. For example, the California Public Utilities Commission has released a decision to shift one-time monies from the state's high-cost fund for universal telephone service to broadband deployment in unserved and underserved areas. The tentative funding level identified by the California Commission stands at \$100 million.⁹⁹ Similarly, Massachusetts has launched a broadband deployment program that targets \$25 million for building basic infrastructure in areas that are currently unserved or underserved.¹⁰⁰ That these two states identify at least \$125 million being applied to unserved or underserved areas, while the Joint Board proposes \$300 million nationwide, indicates that the proposed funding level is likely to be inadequate.

Even though it is likely that the \$300 million will be exhausted well before all unserved areas can be addressed, it is appropriate to develop a reasonable set of criteria with regard to providing support to both unserved and underserved areas. Care must be taken to ensure reasonable prioritization of these areas, and to ensure that supported broadband services are high

⁹⁹ See, "Interim Opinion Implementing California Advanced Services Fund," *Order Instituting Rulemaking into the Review of the California High Cost Fund B Program*, Rulemaking 06-06-028, December 20, 2007, 3. http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/76947.pdf

¹⁰⁰ "State Unveils \$25 Million Broadband Incentive Fund; Initiative calls for public-private investments in communities without broadband access," Press Release from the Office of Governor Deval Patrick, August 2, 2007, http://www.mass.gov/?pageID=pressreleases&agId=Eoca&prModName=ocapressrelease&prFile=07_08_02_broadband.xml .

quality. As discussed above, underserved areas should be defined as those areas that are not unserved, i.e., areas that already have data services serving residential and small business customers other than dial-up and satellite, and that do not meet the 10 Mbps symmetrical threshold. It is reasonable to expect that prioritization of the distribution of funds to underserved areas will focus on those areas with the poorest quality broadband first, and work up to address those areas with higher levels of service availability, up to the 10 Mbps symmetrical benchmark. The FCC's new eight-tier broadband categorization plan may be of use for the prioritization of underserved areas, e.g., areas where only "1st Generation Data" services are available should be given priority over those that have achieved "Basic Broadband Tier 1." However, as will be discussed further below, the ranking of competing projects must have more than one dimension.

C. Ranking Competing Projects

In either unserved or underserved areas, projects should be ranked. Given the very limited level of funding proposed by the Joint Board, prioritization of alternative projects is all the more important. The Joint Board recommends that states play a leading role in determining where broadband funding is needed, and in awarding broadband grants.¹⁰¹ However, the Joint Board does not identify a specific allocation mechanism to distribute funds among the states.¹⁰² The FCC should establish the extent of unserved areas before the distribution of funds among the states is determined. Distribution of funds among the states should be based on overarching national objectives, and given the limited level of funding identified by the Joint Board, establishing state awards in light of a comprehensive view of deployment needs is essential.

The Joint Board also points to the need to establish guidelines to support state commission decision-making on the bidding process associated with awarding broadband

¹⁰¹ *Recommended Decision*, ¶47.

¹⁰² *Recommended Decision*, ¶69.

grants.¹⁰³ To ensure that broadband deployment objectives are pursued in a reasonably consistent fashion, standardized criteria should be established to rank competing proposals. These criteria should cultivate a competitive grant-seeking process that will encourage applicants to develop efficient proposals that are consistent with standards established by the FCC. It is important to note that the concept of “competing projects” can reflect both decisions regarding which of several alternative projects should be funded across different areas, and in cases where there may be competing suppliers for a specific area, determining which source of broadband should be funded in that specific area. The criteria identified below are appropriate for prioritizing projects associated with either unserved or underserved areas, with the caveat that a general rule placing unserved areas ahead of underserved areas should be applied. The standardized criteria are:

- Current level of service availability (or verification of lack of service)
- Funds requested per subscriber
- Speed of the proposed service
- Price of the proposed service
- The number of households in the proposed service area
- Commitment to serve low-income customers
- Commitment to neutral Internet access

Subsidy monies will generate the highest level of benefits if the standards identified above are consistently applied when determining the distribution of federal support. First, it must be verified that the nominated area either has no broadband service, or, if the funding is for underserved areas, identification of the exact level of broadband service that is available. The Joint Board indicates that prior to awarding grants, the states should develop and publish detailed maps of their unserved areas.¹⁰⁴ For mapping to be useful in determining the distribution of federal funds, common standards must be established to map and categorize service availability. If common mapping standards are not developed, inappropriate prioritization may result, or

¹⁰³ *Recommended Decision*, ¶47.

¹⁰⁴ *Recommended Decision*, ¶15.

federal funds may be distributed to support services that are inconsistent with national objectives.¹⁰⁵ As the Joint Board is concerned regarding the possibility of duplicate support being awarded from the Broadband Fund to carriers that also receive funding from the POLR fund,¹⁰⁶ accurate mapping of both unserved and served areas is required.

Second, the ranking of projects should consider the amount of funds requested, stated on a per subscriber basis. Given the limited level of funding proposed by the Joint Board, priority should be given to funding projects that deliver services at lower costs.

Third, the speed of the broadband service associated with a project should be considered, and greater weight should be given to projects that support higher broadband speeds, with priority given to projects that deliver speeds at the symmetrical 10 Mbps standard, or above.

Fourth, universal service principles point to affordable rates for advanced services in high-cost areas, and these rates should also be reasonably comparable with rates found in urban areas.¹⁰⁷ Thus, project applicants must provide evidence of both the affordability of their service, and the relative level of their service price, compared to urban areas in the state. The FCC should facilitate this comparison by identifying average urban broadband rates on a state-by-state basis. As was discussed earlier in these Comments, affordability should be examined in proceedings before the state commissions.

Fifth, the number of potential subscribers associated with a project should also be considered. The low level of funding proposed by the Joint Board can bring higher levels of

¹⁰⁵ The Joint Board argues that the states are in a better position to pursue mapping than is the FCC because the states have smaller areas and have better information regarding local needs (*Recommended Decision*, ¶13). This argument fails to acknowledge that state resources may be limited, and in the context of many rural states, the scope of the mapping project might outstrip state resources. The FCC should help coordinate state mapping activity, or establish a “best practices” approach to mapping. The FCC must not allow portions of the U.S. population to become ineligible for broadband subsidies due to inadequate action by specific states. In addition, the resulting maps should be reviewed by the FCC to ensure their accuracy and compliance with mapping standards or best practices, otherwise inappropriate distribution of federal funds may result.

¹⁰⁶ *Recommended Decision*, ¶53.

¹⁰⁷ 47 U.S.C. §254(b)(1), (2), and (3).

benefits if the funded projects reach a larger number of potential subscribers.

Sixth, the ability of low-income consumers to utilize broadband should be encouraged, and carriers' plans to encourage low-income consumers' use of broadband should be evaluated by the FCC through the ranking process. Priority should be given to projects where the service provider makes low-income commitments, and identifies measures to encourage broadband consumption by low-income consumers,

Finally, the subsidization of broadband raises complex issues regarding the quality of the supported broadband service. The FCC is now well aware that broadband network providers have the ability to "manage" network traffic in ways that are to their competitive advantage.¹⁰⁸ However, the FCC must also carefully note an additional key issue associated with the distribution of broadband support, namely, how the service provider's supported broadband deployment will relate to the ability of that firm to provide non-supported services. Network upgrades pursued by telephone companies may enable the provision of video services that compete for bandwidth with general Internet access services.

For example, AT&T's U-verse utilizes Very High Speed DSL (VDSL) technology in an upgrade of that telephone company's existing plant. Following the upgrade, the bandwidth available can provide voice, data, and video services.¹⁰⁹ The division of the total bandwidth among these services is a choice variable for AT&T—AT&T decides how much bandwidth each service gets. This outcome can be true with all broadband network upgrades. Thus, rules regarding broadband funding must clearly address how supported companies' provision bandwidth among services. Priority should be awarded to broadband projects that provision bandwidth for Internet access that is sufficient to meet the 10 Mbps symmetrical benchmark, and

¹⁰⁸ "FCC Announces Agenda and Witnesses for Public *En Banc* Hearing in Cambridge, Massachusetts on Broadband Network Management Practices," FCC Press Release, February 20, 2008, http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-280373A1.pdf .

¹⁰⁹ Interview with AT&T's Chief Technology Officer in *Investor's Business Daily*, September 5, 2007, <http://www.investors.com/Tech/TechExecQA.asp?artid=273872348605554> .

that also commit to neutral network management practices, i.e., practices that do not favor affiliated sources of content and Internet services.

The above ranking criteria reflect the fact that alternative projects are likely to have characteristics that vary substantially. The ranking of alternative projects that request funds should be based on a consistent application of the identified criteria. It may be useful to associate points with the alternative criteria to help simplify the evaluation of multidimensional competing projects. Once a broadband fund is established by the FCC that focuses on extending service into unserved areas, or upgrading service in underserved areas, the FCC should seek further comment on the process of applying for and distributing funds, including the ranking of competing projects.

D. State Matching Funds

The Joint Board raises the issue of the contribution of state matching funds as a basis for receipt of supplemental support.¹¹⁰ There is no question that the availability of state matching funds can improve the effectiveness of broadband deployment in a specific state. However, the FCC should exercise great care in determining whether to exclude states that cannot contribute matching funds from receiving supplemental federal support. Any federal broadband fund should pursue objectives from a national perspective. If some states are unable or unwilling to produce matching funds, this does not diminish the pressing need for broadband faced by citizens of those states who reside in unserved or underserved areas. The ability of a state to match the federal grant should not hinder the ability of a state to receive monies from the federal broadband fund.

With regard to the matching-fund concept, the Joint Board proposal contains a significant oversight regarding the award of monies from the proposed Broadband Fund. These monies are,

¹¹⁰ The *Recommended Decision* (§50) proposes that baseline support be provided to all states, but that supplemental support be provided once the state has matched some minimum level of support. The extent of supplemental funding is not known at this time.

according to the Joint Board, to be awarded by the state on a “project-by-project” basis.¹¹¹ Of course, the ultimate recipients of the monies for the approved projects are not the states, but the telecommunications providers that have yet to deploy broadband services, or that need to upgrade substandard broadband services. Thus, as federal monies are being awarded to private interests, it is appropriate to require that matching funds be supplied by the firms that receive the federal support. The California Commission, in the design of its broadband program, has determined that the subsidy recipient must supply 60 percent of the total cost of a project, with the state broadband fund providing 40 percent.^{112,113} The FCC should require matching funds from the entity receiving subsidy as a means to expand the amount of broadband investment resulting from the fund.

E. Summary of Components of the Joint Board’s Proposal

The Joint Board’s proposed Broadband Fund does not provide a reasonable means for expanding broadband. Beyond the fact that the \$300 million associated with the fund is unlikely to provide sufficient funding to ensure that all Americans have access to affordable and high-quality broadband, the fund ignores the implicit support for broadband in the existing fund. The recommendations regarding the Joint Board’s Broadband Fund, discussed above, will improve the outcome should the FCC fail to adopt the alternative approach to broadband funding proposed in these Comments. Unless the FCC leverages the existing support already provided to broadband providers, meaningful reform of high-cost universal service support is unlikely.

¹¹¹ Ibid.

¹¹² See, “Interim Opinion Implementing California Advanced Services Fund,” *Order Instituting Rulemaking into the Review of the California High Cost Fund B Program*, Rulemaking 06-06-028, December 20, 2007, 31, http://docs.cpuc.ca.gov/word_pdf/FINAL_DECISION/76947.pdf .

¹¹³ The FCC should allow public-sector entities, such as municipalities, to receive funding on the same terms as those associated with private-sector operators.

IX. The Joint Board’s Mobility Fund

The Joint Board indicates that the primary objective of the new Mobility Fund is to support capital spending to expand coverage in unserved areas.¹¹⁴ However, the Joint Board also indicates that the Mobility Fund will provide operating subsidies, and identifies service improvements as a target of the Mobility Fund for areas that may already be served.¹¹⁵ The general characteristics of the Joint Board’s proposed mobility fund were discussed earlier in these Comments. The discussion that follows addresses details of the Joint Board’s proposal to create a Mobility Fund. While the Mobility Fund’s general approach to rationalize support for wireless carriers has merit, other aspects of the Joint Board’s proposal are problematic. Specific components of the Joint Board’s Mobility Fund may result in increased funding requirements for mobility services. The modifications discussed below should be made to the Joint Board’s proposed Mobility Fund.

A. Assessment of the Joint Board’s Mobility Fund

The Joint Board indicates that it is interested in developing a program that avoids duplicate support.¹¹⁶ This is a reasonable objective, however, the plan identified by the Joint Board with respect to mobility services does not sufficiently address duplicate support, and the Joint Board’s proposed framework may result in increased funding levels for wireless, and/or diminished support for wireline voice or broadband networks. Given the capped level of funding associated with the Joint Board’s proposal, this is an undesirable outcome.

The Joint Board first indicates that the new Mobility Fund will support the construction of new wireless facilities in “areas with significant population density but without wireless

¹¹⁴ *Recommended Decision*, ¶35.

¹¹⁵ *Recommended Decision*, ¶16.

¹¹⁶ *Recommended Decision*, ¶53.

service.”¹¹⁷ The Joint Board defines these areas as “unserved.” Extending service to these unserved areas may be a reasonable objective, but the FCC will need to make a determination of what constitutes “significant population density.” The Joint Board goes on to propose that the Mobility Fund should also be available to support wireless service to “provide continuing operating subsidies to carriers serving areas where service is essential but where usage is so slight that a plausible economic case cannot be made to support construction and ongoing operations, even with a substantial construction subsidy.”¹¹⁸ The combined effect of these two funding proposals may expand the potential draw of wireless ETCs from the fund. However, the Joint Board hopes to offset this expanded draw with reductions in the support for wireless ETCs based on a shift to cost-based funding:

Wireless carriers currently receive the largest share of support provided to competitive ETCs under the identical support rule. They will also be solely eligible for funding under the Mobility Fund. During the transition, wireless competitive ETCs will receive reduced levels of support under the identical support rule, but will be eligible to seek funding from the Mobility Fund. *We anticipate that this transition will be approximately revenue neutral*, with about \$1.0 billion of funding per year eventually being distributed through the new Mobility Fund. Since the overall fund size will be capped at \$4.5 billion, any reductions in support for wireless carriers in year 1 will be available for disbursements from the Mobility Fund in year 2, and so forth.¹¹⁹

While the Joint Board hopes for revenue neutrality in funding associated with mobility services, they may be walking a fine line. Other provisions of the Joint Board’s proposal may open the door for substantial increases in funding associated with wireless services. These provisions are discussed below.

B. Wireless Service Quality and the Mobility Fund

The Joint Board indicates that there are problems with unreliable service in areas that are already served by wireless carriers. On this issue the Joint Board states:

¹¹⁷ *Recommended Decision*, ¶16.

¹¹⁸ *Ibid.*

¹¹⁹ *Recommended Decision*, ¶28 [emphasis added].

While it should not be the goal of universal service funding to upgrade the multitude of existing wireless networks in rural areas throughout the country, it is a legitimate goal that all consumers should have access to at least one carrier that provides a reliable signal.¹²⁰

The availability of reliable wireless service in areas where service already exists is important; however, whether this issue should be addressed through the new Mobility Fund is questionable. Contributing to the lack of reliable wireless coverage is the fact that consumers do not have the ability, prior to purchase, to gain accurate information regarding where coverage can be expected. Wireless carriers have not been motivated by market forces to publish accurate maps of their coverage areas. The marketing maps published by wireless carriers all come with disclaimers that indicate that the consumer should count on very little reliable information from the carrier's marketing map.¹²¹ This lack of information reduces the ability of consumer choice to drive market forces to encourage wireless providers to offer high-quality service.

Prior to dedicating subsidy dollars to the problem of poor wireless coverage in existing wireless networks, a more cost effective method should be applied. The problem of poor coverage in existing wireless networks may be more efficiently addressed by establishing a requirement that wireless carriers publish verified coverage maps. Alternatively, as will be discussed below, the production and publication of accurate coverage maps by the state commissions may be a logical byproduct of the creation of a mobility fund. Accurate coverage maps, if publically available, could contribute to an increase in competition between wireless carriers, and could have a beneficial impact on their coverage without the need for subsidy. Use

¹²⁰ *Recommended Decision*, ¶16.

¹²¹ The disclaimer from a T-Mobile coverage map is typical:

This map predicts and approximates our wireless coverage area outdoors, which may vary from location to location and may change without notice. It may include locations with limited or no coverage. Our maps do not guarantee service availability. Even within a coverage area, there are several factors, such as: network changes, traffic volume, service outages, technical limitations, signal strength, your equipment, terrain, structures, foliage, weather, and other conditions that may interfere with actual service, quality, and availability, including the ability to make, receive, and maintain calls. <http://www.t-mobile.com/coverage/>.

of subsidy dollars to address the poor-coverage problem should be minimized.

C. “Residential” Coverage and the Mobility Fund

The Joint Board raises another factor that has the potential to generate a substantial increase in mobility funding. When discussing allocation of monies supporting mobility, the Joint Board suggests the following approach:

One input factor may be the number of residents of each state who cannot receive a strong and reliable wireless signal *at their residence*. Because the purpose of this fund is to enhance mobility services, allocation factors might also include each state’s unserved mileage along state and federal highways.¹²²

The first of these proposed criteria may lead to a substantial number of funding requests. While the use of unserved highway mileage may be a reasonable criterion for determining funding needs, the ability of a consumer to receive service at one’s residence may be driven by a number of factors, and wireless carriers consistently warn consumers that their product is not designed to provide service indoors.¹²³ A 2006 J.D. Power and Associates study of wireless call quality noted:

The study also finds that overall call quality performance varies based on where a call is placed or received. Wireless calls within a local calling area have significantly lower PP100 ratings¹²⁴ when compared to calls placed or received while roaming—27 PP100 and 55 PP100, respectively. *Additionally, outdoor wireless calls typically experience less problems when compared to calls placed inside of buildings, particularly those made from home.*¹²⁵

Wireless calls made from a dwelling are subject to more trouble than those made outdoors, thus, the Joint Board’s proposal that service at the residence be used as an evaluation criterion could

¹²² *Recommended Decision*, ¶17 [emphasis added].

¹²³ For example, AT&T Wireless describes coverage expectations in areas that its coverage maps describe as “best” coverage as follows: “in-building coverage can and will be adversely affected by the thickness/construction type of walls, or your location in the building (i.e., in the basement, in the middle of the building with multiple walls, etc.)” <http://www.wireless.att.com/coverageviewer/?zip=02631> .

¹²⁴ PP100 abbreviates “Problems Per 100 Calls.”

¹²⁵ *2006 Wireless Call Quality Performance Study*, [emphasis added], http://www.consumerhelpweb.com/blog/2006_04_01_archive.html .

result in substantial funding increases. The Joint Board’s suggestion could turn mobility services back into “residential” services. The FCC should avoid the application of a residential service standard for the evaluation of wireless funding requests. The FCC now recognizes that consumers do not treat wireless and wireline as economic substitutes, rather, consumers purchase both types of services:

These wireless competitive ETCs do not capture lines from the incumbent LEC to become a customer’s sole service provider, except in a small portion of households. Thus, rather than providing a complete substitute for traditional wireline service, these wireless competitive ETCs largely provide mobile wireless telephony service in addition to a customer’s existing wireline service.¹²⁶

Thus, consumers are likely to have wireline service available at their residence, and improving the ability of a wireless phone to work in a consumer’s residence should not be allowed to contribute to an increase in the size of the Mobility Fund.

D. Mobility Funding Requires Accurate Wireless Mapping

The efficient distribution of support requires accurate information. Given that the Joint Board proposes to target funding based on the operating characteristics of wireless services, specific geographic information will be needed. The Joint Board points to the desirability of maps for “unserved areas” for wireless support.¹²⁷ The Joint Board’s proposal with regard to wireless service requires a higher level of quality evaluation than the simple “unserved area” criteria. As the Joint Board indicates that all consumers should have access to at least one carrier that provides a reliable signal, detailed signal strength or coverage maps will be required to make the appropriate determinations. Likewise, the Joint Board proposes that the state allocation factor associated with the distribution of Mobility Fund support be based on quantifiable criteria,

¹²⁶ *In the Matter of High-Cost Universal Service Support; Federal-State Joint Board on Universal Service*; WC Docket No. 05-337; CC Docket No. 96-45, Notice of Proposed Rulemaking, FCC 08-4, January 29, 2008, ¶9.

¹²⁷ *Recommended Decision*, ¶18.

such as “each state’s unserved mileage along state and federal highways.”¹²⁸ Here again, absent granular information regarding signal strength, it will be impossible to determine whether signals can be received. The same logic that the Joint Board identifies for broadband, i.e., “availability can vary on a street-by-street basis, sometimes on a house-by-house basis,”¹²⁹ applies equally to wireless signals.

If support is to be provided to mobility services, the states must monitor the deployment of wireless telecommunications networks, and the Joint Board indicates that states should produce wireless coverage maps to assist with this monitoring.¹³⁰ To ensure that states are producing maps that generate the consistent information, the FCC should develop mapping standards, based on signal strength thresholds, using standardized and auditable characteristics, such as decibels relative to one milliwatt (*dBm*). The standards should be used by the states in producing the coverage maps for the purposes of Mobility Fund support. The maps produced by the states should provide a signal quality key, identified by wireless carrier, and clearly indicate areas where coverage gaps exist. The FCC should hold a proceeding to develop signal strength thresholds that identify levels of quality of service in coverage areas that are appropriate for the population characteristics and terrain conditions in coverage areas of the state. The coverage maps produced by the states should clearly convey information regarding the quality of service available to the public. The FCC must verify the accuracy of the coverage maps produced by the states and should develop methods to verify the accuracy of coverage maps. The states and FCC should make available to the public copies of verified accurate coverage maps for wireless services available in the state.

The creation of detailed signal strength maps is essential for the efficient distribution of

¹²⁸ *Recommended Decision*, ¶17.

¹²⁹ *Recommended Decision*, ¶13.

¹³⁰ *Recommended Decision*, ¶18.

Mobility Fund support. However, the creation of high-quality signal strength maps will also provide a substantial positive spillover for wireless consumers. As discussed earlier, competitive forces have not led wireless carriers to produce accurate and reliable coverage maps, and consumers who shop for wireless services are hamstrung in their ability to identify areas where coverage is reliable, and due to the lack of information may not be able to exert competitive pressure on wireless firms to upgrade their networks. Accurate information will enhance consumer decision making, and provide incentives for carriers to upgrade their networks to improve coverage and call quality.

E. Mobility Matching Funds

When discussing the Mobility Fund, the Joint Board points to the potential for state matching funds.¹³¹ As was the case with the Broadband Fund, Mobility Fund grants should definitely require matching from the carriers that will benefit from the subsidy monies. A matching approach will expand the level of investment, and require that the carriers that will benefit from the expansion or improvement of their networks share the cost.

F. Mobility Fund Summary

The general framework identified by the Joint Board for the Mobility Fund, which abandons the identical support rule and requires that supported carriers comply with cost reporting, will likely contribute to the stabilization of funding levels. This approach will better orient high-cost universal service funding toward the actual service-usage patterns of consumers, who continue to display a strong preference to consuming both wireless and wireline services. The Joint Board's reform proposal could provide additional benefits to consumers if accurate information describing wireless coverage is produced. This information is critical for targeting support to unserved areas, and will enable efficient subsidization. However, public availability of accurate coverage maps may also enable better consumer decision-making in the marketplace,

¹³¹ *Recommended Decision*, ¶18.

and inspire carriers to make the needed investments in their networks to improve service quality. The FCC should exercise restraint with regard to applying subsidy monies to support upgrades to wireless service quality.

X. The Joint Board’s POLR Fund

The Joint Board proposes that the POLR Fund consist of all existing ILEC legacy support mechanisms.¹³² Given the Joint Board’s approach, the POLR Fund is effectively the residual level of funding following the implementation of the Mobility Fund and Broadband Fund. Thus, the new POLR Fund appears to be about \$1.3 billion smaller than the existing fund.¹³³ Given the proposed cap, this would indicate that \$3.2 billion would continue to be available to the POLR fund to support basic voice service (and, given the lack of recommended action by the Joint Board on broadband support implicit in the fund, to continue to provide implicit support for broadband service deployment).

As discussed earlier in these Comments, the FCC must take action to leverage the synergy associated with the integrated deployment of voice and broadband services. The Joint Board’s POLR Fund does not make sense in an environment where supported carriers provide voice and broadband services on a combined basis. Continuing to allow federal support to flow to telephone companies without a thorough accounting of the impact of the joint provision of voice and broadband services is inefficient, and does little to ensure that policy objectives with regard to broadband deployment can be achieved. While wireline voice services continue to deserve substantial attention as a matter of universal service policy, it is also true that failure to recognize the transformation of the facilities over which those voice services are provided will undermine larger universal service objectives, including the deployment of broadband. While the Joint Board’s proposal indicates that its objective is to “support only one wireline, one

¹³² *Recommended Decision*, ¶19.

¹³³ According to the Joint Board, about \$1 billion in funding will ultimately flow to the Mobility Fund. *Recommended Decision*, ¶28.

wireless, and one broadband provider in any given area,”¹³⁴ the public interest will be well served if the “POLR” concept is defined broadly enough to recognize that it may be more efficient for high cost areas to be served by a single provider of both voice and broadband services. The creation of the Integrated POLR Fund discussed earlier will drive further efficiency into the universal service funding process. The Joint Board’s proposal maintains an artificial split between voice and broadband, even though the Joint Board recognizes that these services are likely to be provided by the same telephone company.¹³⁵

The Joint Board’s POLR Fund proposal also ignores the substantial questions that arise when subsidy recipients under the existing funding arrangement have not deployed broadband. If subsidy monies have flowed to some ILECs, and those ILECs have not deployed broadband, it is incumbent upon the FCC to determine why that is. It is clear that many carriers have successfully deployed broadband service given existing funding levels. Those carriers that have failed to deploy broadband, and that cannot show good reason why, may not deserve continuing funding at the current level. As discussed above, maintaining funding under the current arrangement for “voice only” providers may be appropriate on a transitional basis, but should be phased out over a short period.

Universal service reform will advance if the FCC develops costing methods for incumbent ETCs that reflects the integrated provision of voice and broadband services, and which are capable of producing forward-looking assessments of costs associated with extending service into unserved areas, or upgrading service in underserved areas. As discussed earlier, these Comments also recommend that the FCC undertake a thorough audit of supported carrier operations, and application of a cost basis for integrated POLRs will assist with that process. The audit will contribute to the FCC’s ability to make broadband support explicit, and to migrate

¹³⁴ *Recommended Decision*, ¶37.

¹³⁵ *Recommended Decision*, ¶30.

existing subsidies associated with the general High Cost Fund to the new Integrated POLR Fund. The audit will help the FCC to identify a “best practice” standard for evaluating carrier performance with regard to broadband deployment.

A. Other Issues Raised by the Joint Board Regarding the POLR Fund

The Joint Board raises transport costs for remote carriers.¹³⁶ This may be a legitimate concern; however, the scope and magnitude of the problem are not clear. The Joint Board indicates that competition has an impact on the ability of incumbent LECs to charge the same rates in both their low-cost densely populated areas and their higher cost, more remote areas.¹³⁷ The relevance of this discussion is not clear, nor is it consistent with practices in other industries, such as wireless, where wireless carriers are observed to offer pricing plans across wide areas (in some cases at the national level) in spite of differences in population density and rivalry among wireless firms. The Joint Board’s observations regarding inconsistencies in the impact of line loss on support levels of rural and non-rural carriers point to a legitimate concern across funding mechanisms; however, as is also noted by the Joint Board, the FCC is well aware of this and other problems of consistency across the rural and non-rural funds.¹³⁸ Also, in the context of its discussion of the POLR Fund, the Joint Board points out that the High Cost Loop program has experienced significant increases in loop costs qualifying for support, and that the impact has been to reduce support over time for some carriers whose costs have remained relatively constant.¹³⁹ However, the Joint Board points out elsewhere that one of the drivers for increases in High Cost Loop funding is the individual carrier’s decisions regarding network upgrades

¹³⁶ *Recommended Decision*, ¶21.

¹³⁷ *Recommended Decision*, ¶22.

¹³⁸ *Recommended Decision*, ¶¶33, 42.

¹³⁹ *Recommended Decision*, ¶22.

capable of delivering broadband.¹⁴⁰ This provides a good example of the problems of created by the presence of implicit broadband subsidies in the existing Universal Service Fund. The approach advocated in these Comments will make the subsidies associated with broadband explicit and will allow for a more transparent understanding of why some supported carriers have experienced increases in High Cost Loop support, while other supported carriers have experienced decreases. The Joint Board believes that the POLR fund is currently supporting the deployment of broadband services.¹⁴¹ This is clearly the case as broadband capable loops have received a share of funding, and the Joint Board notes that loop support has grown during this decade.¹⁴² Thus, it makes sense to reorient the fund toward the combined provision of high-quality voice and broadband services.

B. Transition Period

Funding for the new Mobility and Broadband Funds depends on the elimination of the identical support rule. The Joint Board recommends that the FCC seek further comment on the issue of how the transition will be made.¹⁴³ The process of implementing cost-based support should proceed as quickly as possible. The FCC also seeks comment on the proper approach to evaluating competitive ETC costs,¹⁴⁴ and finalizing the details of the new cost-based approach may take additional time (and may result in delays associated with appeals of FCC decisions). Once these details are worked out, the transition process will have the necessary framework to begin the transition. A transition period of five years, given the possibility of implementation delays is likely too long. Competitive ETCs are on notice that funding will reflect their own

¹⁴⁰ *Recommended Decision*, ¶57, footnote 55.

¹⁴¹ *Recommended Decision*, ¶30.

¹⁴² *Recommended Decision*, ¶22.

¹⁴³ *Recommended Decision*, ¶27.

¹⁴⁴ *In the Matter of High-Cost Universal Service Support; Federal-State Joint Board on Universal Service*; WC Docket No. 05-337; CC Docket No. 96-45, Notice of Proposed Rulemaking, FCC 08-4, January 29, 2008, ¶13.

costs, and the FCC should transition competitive ETCs to funding levels that reflect their own costs once those costs have been established. Similar logic applies should the FCC require an evaluation of the costs associated with the joint provision of voice and broadband services.

There is no reason to award carriers support in excess of their relevant costs for any extended period.

C. Avoiding Duplicate Support

The Joint Board indicates that funding for “duplicate networks” is no longer desirable.¹⁴⁵ As discussed above, a more efficient method to avoid duplicate support is to utilize an Integrated POLR Fund, that addresses the combined provision of voice and broadband services. Within the context of the Joint Board’s POLR Fund, the Joint Board states that there should be a transitional period in which both wireless and wireline CETCs will continue to receive support.¹⁴⁶ To the extent wireline CETCs have built their own facilities to provide service, the transition to a single provider raises more complex issues. Given the Joint Board’s recommendation that an individual carrier’s cost should determine its level of support, if a facilities-based non-mobility CETC has lower costs than the ILEC, it may be more efficient to fund the facilities-based CETC, and allow the ILEC’s support to be phased out. The FCC must thoroughly evaluate the impact of non-mobility CETCs on funding, and determine the most effective way to support a single carrier. As discussed earlier, should the FCC not apply cost analysis to make this determination, selecting a single Integrated POLR using a competitive tender, such as an RFP, will be more effective than administering an auction.¹⁴⁷

¹⁴⁵ *Recommended Decision*, ¶35.

¹⁴⁶ *Recommended Decision*, ¶43.

¹⁴⁷ Unless there are numerous wireline CETCs in an area, an auction would be unlikely to perform well due to a small number of bidders. See, for example, Klemperer, Paul, “Using and Abusing Economic Theory,” 2002 Alfred Marshall Lecture to the European Economic Association, 9–13. <http://www.nuff.ox.ac.uk/economics/papers/2003/W2/usingandabusing.pdf>.

XI. Impact of Reform Proposals on Lifeline and Link-Up

The Lifeline and Link-Up programs are currently focused on encouraging low-income consumers to adopt and maintain basic telephone service. Link-Up targets the initial connection charge, and Lifeline focuses on recurring charges associated with basic voice service. However, the FCC has adapted the programs to reflect evolving technology. For example, when previously considering the definition of services to be supported by universal service funding the FCC stated:

we agree with the Joint Board that Lifeline consumers should have access to the same services as those supported in rural, insular, and high cost areas: voice grade access to the public switched network, with the ability to place and receive calls; DTMF signaling or its functional equivalent; single-party service; access to emergency services, including in some circumstances, access to 911 and E911; access to operator services; access to interexchange services; and access to directory assistance. In determining the specific services to be provided to low-income consumers, we adopt the Joint Board's reasoning that section 254(b)(3) calls for access to services for low-income consumers in all regions of the nation, and that universal service principles may not be realized if low-income support is provided for service inferior to that supported for other subscribers.¹⁴⁸

It is reasonable to consider whether Lifeline and Link-Up should be expanded to cover services associated with the three new funds. The Joint Board's decision points to an expanding definition of "basic service," and these Comments recommend that basic service be redefined to reflect high-quality and affordable voice and broadband services, and that these services be funded through a new Integrated POLR Fund. Thus, it is appropriate to apply the tools associated with Lifeline and Link-Up to a broader set of services.

Lifeline and Link-Up can be more efficiently adapted to support basic voice and broadband if the service-initiation synergy of voice and broadband services is recognized. These Comments support the Joint Board's recommendation that broadband become a component of supported universal service offerings. Thus, it makes sense to expand Lifeline and Link-Up support for broadband service. These Comments also propose to explicitly recognize the

¹⁴⁸ *In the Matter of Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, FCC 97-157, May 8, 1997, ¶28.

technical interrelationship of basic voice and broadband services and the joint provisioning and marketing of these services by many ETCs. ETCs providing both supported voice and broadband services will enjoy economies associated with unified billing, customer support operations, marketing, and repair and maintenance. Thus, the need for duplicate service initiation fees, and duplicate recurring support will be lessened. This should have a positive impact on the magnitude of subsidy needed for Lifeline and Link-Up. The same synergy that carriers strive to achieve through their bundling of voice and broadband services can be leveraged to encourage subscription to both voice and broadband services by low-income consumers.

However, broadband adoption barriers include the need for a computer and sufficient understanding of broadband-related technologies. The FCC must consider means to expand the scope of Link-Up support to address these impediments to adopting broadband. The FCC should conduct a proceeding that will seek comment on how to incorporate Lifeline and Link-Up into the new set of supported services. This proceeding should address expanded access to computers and training for low-income consumers, to encourage broadband subscription among these consumers. One area of potential synergy that the FCC could consider leveraging is the Schools and Libraries Program. While funding under the Schools and Libraries Program for schools has excluded the provision of computer equipment,¹⁴⁹ the ability of schools to apply information technology to the learning process is increasingly dependant on the ability of students to access the Internet from home, both to use learning resources provided by school systems, and to conduct general research.¹⁵⁰ A needs-based program that enables schools to provide computer equipment to disadvantaged students would target the broadband adoption

¹⁴⁹ <http://www.usac.org/sl/about/overview-program.aspx> .

¹⁵⁰ For example, educational Web sites such as “Study Island” allow school districts to provide students with web-based state assessment preparation programs that students can use to prepare for standardized tests while at home.

impediment associated with the need for computer equipment to access broadband networks. It would also be useful to seek input from the computer industry on this issue. Recent reports of \$150 laptops¹⁵¹ being supplied for educational purposes in developing nations begs the question of why similar technology offerings cannot be applied to encourage educational excellence through broadband usage among disadvantaged students in the United States.

Wireless services, as they are marketed as “personal” communications services, present a more complex challenge than do fixed voice and broadband services (as fixed services are marketed to the household level). Several studies have shown that low-income consumers are more likely to adopt wireless service, to the exclusion of wireline services.¹⁵² Extending Lifeline and Link-Up to wireless services may be a less pressing issue. More study is appropriate to determine how Lifeline and Link-Up should be adapted to address the Mobility Fund, and this issue should be explored further in the Lifeline/Link-Up proceeding recommended above.

XII. The Relationship of the ETC Subsidy and Rates in a Deregulated Environment

The 1996 Act lays out universal service principles that require that “quality services should be available at just, reasonable, and affordable rates.”¹⁵³ This mandate also has an impact on ETC subsidy, as it implies that services supported by the Universal Service Fund should have rates that are not allowed to rise without limit. With regard to basic voice services, many states continue to maintain some control over rates and charges, and this will provide a reasonable

¹⁵¹ “Developing nations to test \$150 laptops,” *The Economic Times*, February 15, 2007, http://economictimes.indiatimes.com/News/International__Business/Developing_nations_to_test_150_laptops/articleshow/1614520.cms .

¹⁵² For example, “The Cell Phone Challenge to Survey Research,” *The Pew Research Center*, May 15, 2006, 3. Available at: <http://people-press.org/reports/display.php3?ReportID=276> .

In addition, a December 2007 Center for Disease Control study on wireless usage that reports: (1) the highest prevalence of cord cutting is among subgroups studied in households with adults living with unrelated roommates; (2) renters are more likely than homeowners to be wireless only; (3) cord cutting decreases with age; and finally, (4) adults living in poverty are more likely than higher income adults to be cord cutters, <http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless200712.pdf> .

¹⁵³ 47 U.S.C. §254(b)(1).

basis for ensuring that subsidy dollars are supporting affordable services.

However, the FCC should be aware that the deregulation of basic voice service rates appears to be a growing trend. Basic voice service rates have been deregulated in jurisdictions such as South Dakota, Nebraska, and California. Other states have rate caps in place for basic service, but these rate caps may be expiring in the coming years. Providing subsidy to carriers that are free to set rates at “what the market will bear” is inappropriate. ETC rates for basic service must be affordable, and establishing permissible upper limits on basic rates is an important component of universal service funding. If basic service rates are no longer affordable and reflect “what the market will bear,” providing support will simply enrich the shareholders of the ETC. Affordability of basic voice services supported by the fund must be protected. Supported carriers that raise rates above affordable levels should face reductions in universal service support.

Broadband services present a more complex scenario, as the FCC has preempted state authority over rates. However, broadband services in high-cost areas are likely to be provided by firms that possess significant market power, if not outright monopoly over the provision of broadband services. If federal support is provided for broadband (and the Joint Board acknowledges that this is already the case on an implicit basis),¹⁵⁴ then supported broadband providers should be required to commit to making broadband services available that are both high quality and affordable. Establishing a definition of basic broadband that delivers state-of-the-art data speeds on a network neutral basis, and requiring that carriers “opt-in” to affordability standards for the supported service is a reasonable approach to ensuring that subsidy dollars will not result in the enrichment of service providers who fail to offer affordable broadband service. Auditing of supported broadband provider practices is also important on this point.

¹⁵⁴ *Recommended Decision*, ¶30.

XIII. Response to Tentative Conclusions Relevant to Proposals in These Comments

These Comments have emphasized the need for cost analysis to reform the High Cost Fund. The FCC offers the following tentative conclusions that have some bearing on this proposal:

We tentatively conclude that we should eliminate the Commission's current identical support rule for competitive ETCs, which bears no relationship to the amount of money such competitive ETCs have invested in rural and other high-cost areas of the country.¹⁵⁵

We further tentatively conclude that a competitive ETC should receive high-cost support based on its own costs, which better reflect real investment in rural and other high-cost areas of the country, and which creates greater incentives for investment in such areas.¹⁵⁶

Adjusting the identical support rule will better match the costs of providing universal service to the specific technologies used by carriers, however, whether that application of an embedded cost approach will generate the best results for all of the cost questions facing the FCC is doubtful. As discussed above, some of the cost questions the FCC is attempting to answer are forward-looking questions. Embedded cost analysis does not provide a reasonable basis for addressing forward-looking cost issues, such as the level of subsidy needed to enable network expansion or upgrade.

Also, as discussed above, the scope of the cost assessment must extend beyond the evaluation of CETC costs, and also examine the services provided and associated costs of service for all subsidy recipients. Some ETCs are providing a broad set of services to their customers. If subsidy dollars have supported network upgrades that enable new services, given the shared characteristic of telephone company plant, there is an impact on the supported carriers' costs of providing basic voice service. The cost synergies arising from an expanding set of services provided over shared facilities must be recognized. This is true even if the FCC

¹⁵⁵ *In the Matter of High-Cost Universal Service Support; Federal-State Joint Board on Universal Service*; WC Docket No. 05-337; CC Docket No. 96-45, Notice of Proposed Rulemaking, FCC 08-4, January 29, 2008, ¶5.

¹⁵⁶ *Ibid.*

decides to apply embedded cost methodology. The expansion of services offered to include both voice and broadband results in lower unit costs and higher revenues. This may result in a reduced need for universal service funding. The FCC must recognize the presence of shared facilities, and the cost-reducing impact that shared facilities produce. The Joint Board's recommendation appears to be limited to competitive ETCs. The FCC must apply an effective cost-based funding approach to all ETCs.