

MASSACHUSETTS
40 main st, suite 301
florence, ma 01062
tel 413.585.1533
fax 413.585.8904

WASHINGTON
501 third street nw, suite 875
washington, dc 20001
tel 202.265.1490
fax 202.265.1489



Testimony of

**S. Derek Turner
Research Director
Free Press**

before the

**United States House of Representatives
Committee on Energy and Commerce
Subcommittee on Communications, Technology and the Internet**

Regarding

**Universal Service: Reforming the High-Cost Fund
March 12, 2009**

**Free Press
Massachusetts Office
40 Main St., Suite 301
Florence, MA 01061
(413) 585-1533**

**Free Press
Washington Office
501 3rd St, NW, Suite 875
Washington, DC 20001
(202) 265-1490**

SUMMARY OF TESTIMONY OF S. DEREK TURNER, RESEARCH DIRECTOR, FREE PRESS

When the current universal service regime was created in 1996, the Internet was an application that rode on top of the telephone infrastructure. Today, telephony is one of many applications that ride on top of broadband Internet infrastructure. This phenomenon of convergence has radically transformed the underpinnings of all telecommunications regulation. Whereas the carriers of last century were only able to earn \$20 per customer each month selling local telephone service, today's carrier using a single converged network can earn well over \$100 per customer every month by offering telephone, TV and Internet service.

With convergence comes tremendous opportunity: the opportunity to ensure universal affordable broadband access *and* the opportunity to significantly reduce the future burden on the Universal Service Fund. The former is of course a goal of the Fund's staunchest defenders, and the latter is a goal of its most ardent critics.

But critics and defenders of the High-Cost Fund all agree that broadband is *the* essential communications infrastructure of the 21st century. In this 21st century digital world it makes no sense to subsidize 19th century technology. The principle goal of the High-Cost program should no longer be the maintenance of basic telephone service in rural America; the principle goal should be achieving universal deployment of affordable broadband infrastructure. Achieving this goal however, will require the complete upending of the status quo and direct confrontation of difficult and politically challenging choices.

The \$7.2 billion in stimulus funds allocated for broadband presents an opportunity for policymakers to take bold and decisive action on USF reform. For the first time, the entire upfront deployment costs for rural networks will be completely financed by taxpayer dollars. The carriers operating these networks will have little to no capital investment costs to recover, and therefore little to no need for traditional ongoing high-cost fund support. But unless the FCC moves to modernize the regulatory structure, it will soon see carriers asking ratepayers to subsidize these networks -- networks already paid for with taxpayer dollars.

Meaningful and lasting USF reform may only be achievable through Congressional action. However, under existing law the Commission does have the authority to implement sweeping changes. We recommend that the FCC begin the process of transitioning to a support a system that embraces convergence. Specifically:

- The Commission should modernize the current regulatory support structure to reflect the lower cost and increased revenue opportunities brought by broadband infrastructure.
 - The need for ongoing high-cost support should be based on forward-looking infrastructure costs and total revenue earning potential. This modernized regulatory structure will reduce the need for ongoing support, as many current Fund-recipients will be able to recoup network costs from the higher per-customer revenues earned from "triple-play" phone, Internet and TV services.
- The Commission should implement a 10-year transition of the High-Cost Fund to a system that subsidizes the upfront deployment costs of broadband networks. Further ongoing support should only be provided on a limited disaggregated basis to extremely high-cost areas.
 - This transition should begin with a freeze of total High-Cost funding at 2009 levels.
 - This transition can be achieved via a gradual 5-year phasing down of support for those study areas with lines that receive less than \$20 per month per line. Nearly 60 percent of the total High-Cost Fund is used to subsidize lines that require less than \$20 per month in support, accounting for 97 percent of all lines receiving High-Cost Fund support.
 - After the 10-year transition, the total size of the High-Cost Fund could be reduced to less than \$1.5 billion annually.
- If the Commission makes changes to the current USF contributions assessment system, it should not subject residential broadband services to these assessments, even if broadband networks are supported by USF. Assessments on broadband could lead to a net decline in subscribership, undermining the goals of universal service.

INTRODUCTION: UNIVERSAL SERVICE POLICY IS AT A CROSSROADS

Though the debate surrounding the Federal Universal Service Fund (FUSF) is often contentious and seemingly intractable, we must not lose sight of a salient fact: the Fund is responsible for delivering essential communications services to low-income households, rural areas, schools, libraries, and rural health clinics -- services that would likely not exist or be prohibitively expensive absent support from the Fund. The goal of universal service is a cornerstone of our nation's communications policy dating back to the 1930's. Though the communications landscape has undergone a series of radical changes since then, the importance of achieving universal service has not. The challenge facing policymakers is determining the mechanisms and policies best suited to achieve this goal in the most efficient and equitable manner possible.

There is little doubt that the Fund is in trouble, facing a potential fiscal crisis of falling receipts and expanding expenses for services that are essential but perhaps technologically inferior. But while the Fund's present predicament poses a serious threat, it also presents an opportunity -- an opportunity to modernize the fund and close the digital divide.

In 1996 when the current universal service regime was created, there were not many who fully grasped how the phenomenon of convergence would radically transform the underpinnings of all telecommunications regulatory structures. But some in Congress did see change on the horizon, and had the foresight to establish in the law the principle that as communications technologies evolve, universal service must evolve with it.

At the time, Internet access was an application that used telephony as an infrastructure. Today, telephony is one of many applications that are supported by broadband infrastructure. Yet tens of millions of Americans cannot purchase a broadband connection at any price, and millions more are only offered third-rate broadband service at exorbitant prices. The staggering rural-urban digital divide, and the lack of affordable broadband offerings is the exact outcome that Congress intended the Act to prevent. This disparity has real world economic and social consequences for millions of American businesses and families.

Broadband is the essential communications infrastructure of the 21st century. In this 21st century digital world it makes no sense to support 19th century technology. The principle goal of the USF should be to support the deployment of, and consumer access to, next-generation, future-proof, high-speed Internet infrastructure. But to reach that goal requires the complete upending of the status quo and direct confrontation of difficult and politically challenging choices.

The development and administration of universal service policy in the United States is an interest group-driven, politically charged, path-dependent process. The Fund as currently administered inefficiently supports redundant legacy technologies and enables private companies to become wholly dependent on the continuance of the old model. This mix of disparate interests, entrenched business models, outdated legislative directives, arbitrage-creating artificial policy distinctions, and \$7 billion annually of funds makes it extremely difficult for legislators and regulators to enact even modest incremental changes, much less large sweeping reform.

But it is imperative that policymakers act to change this path-dependent model. The fact that the digital divide persists in the face of a \$4.6 billion annual high-cost fund to support telephony is a glaring testimony of the failures of the current universal service model and the need for modernization. However, when reforming the Fund policymakers must also recognize that these billions of dollars are collected for the most part from urban consumers who only realize indirect benefits from the Fund. It is therefore vital that these consumer's monies are spent in the most efficient manner possible, and that the gains in added rural subscribers not come at the expense of losses in urban subscribership.

In order to maximize the benefits of universal service policies for all Americans, the size of the Fund must be disciplined through careful oversight and accountability, market incentives, and strategic investment in infrastructure. Since the implementation of the Act we've learned that support for redundant infrastructures, which is intended to promote competition, may in some cases actually be a net harm to consumers. Viewed through this lens, the appropriate role for the Fund is to support a single infrastructure, while using open access policy to promote competition. This approach will ultimately benefit consumers in rural areas by

lowering service prices and enticing more customers to subscribe, and in turn will benefit all consumers by lowering the amount of support that is necessary to build and maintain the critical broadband infrastructure.

Congress and the FCC must maintain the remarkable and progressive commitment to universal service that is the foundation of U.S. communications policy. Transitioning the Fund to broadband is an essential step on the path to reforming the system by maximizing the return on public investment and regaining America's position as a global leader in technology and communications.

THE SCOPE AND NATURE OF THE UNIVERSAL SERVICE PROBLEM

In 1996 when the current USF was created, there were not many who fully grasped how the phenomenon of convergence would radically transform the underpinnings of all telecommunications regulatory structures. At the time, Internet access was an *application* that used telephony as an *infrastructure*. Today, telephony is one of many applications that are supported by broadband infrastructure. Yet the fundamental need for universal service remains. Millions of American homes cannot purchase a broadband connection at any price, and millions more are only offered third-rate broadband service at exorbitant prices. This is tragic, as broadband is the essential service of the 21st century. The fact that this digital divide persists in the face of a \$4.5 billion annual high-cost fund to support telephony is a glaring testimony of the failures of the current universal service model and the need for modernization.

Convergence is forcing policymakers to undertake a complete overhaul of our basic conceptions of, justifications for, and administering of universal service. Ultimately, we believe that broadband is the communications infrastructure of the 21st century, and that the principle goal of the USF should be to support the deployment of, and consumer access to, next-generation, future-proof high-speed Internet services. But to reach that goal, we must completely upend the status quo, and confront some difficult, political challenging choices. The Fund as currently administered inefficiently supports redundant legacy technologies and enables private companies to become wholly dependent on the continuance of the old system. It is imperative that Congress and the Commission act to change this path-dependent model.

But the upsetting of the status quo must be done in a realistic manner. It is not enough to simply say broadband should be a supported service. A method for reaching universal broadband service must be proposed that does not balloon the size of the Fund, which is already under great strain.

While the problems with the current USF are numerous and daunting, they are not insurmountable. Policymakers must take advantage of the window of opportunity created both by the consensus that USF reform is long overdue, and by the recent appropriation of over \$7 billion in broadband stimulus funds. Congress and the Commission should avoid the approach of balancing the interests of the various industry factions and instead focus on developing a policy framework that is guided by the principle of serving the public interest and has the best chance of achieving the core outcome goal of universal service: maximizing the availability, affordability, and adoption of communications technology in all regions of the nation.

But we must also recognize that these billions of USF dollars are collected for the most part from urban consumers, who only realize indirect benefits from the Fund. It is therefore vital that these consumer's monies are spent in the most efficient manner possible, and that the gains in added rural subscribers not come at the expense of losses in urban subscribership.

In this written testimony, we begin with an analysis of the principles underpinning universal service, and develop criteria for modernization based upon these principles. We then conduct a quantitative analysis of the current distributions of universal service funds, in order to better guide how to transition current funding away from support for plain old telephone service (POTS), towards support for broadband infrastructure.

PRINCIPLES THAT SHOULD GUIDE UNIVERSAL SERVICE POLICY

The criteria we use to evaluate USF High-Cost Fund reform alternatives are largely based on the “public interest” provisions contained within the 1934 Communications Act, which in its first sentence declares the Act’s intention to facilitate Universal Service in all communications technology by establishing the Commission “to make available, so far as possible... a rapid, efficient, Nationwide... wire and radio communication service with adequate facilities at reasonable charges”.¹

This overarching purpose of the Act is made explicit Section 254 of the Act, which specifies principles that the Joint Board and the Commission are to use to guide Universal Service policymaking. Therefore, in our development of criteria for the evaluation of USF reform proposals, these specific principles from Section 254 are given substantial weight.

The principles for USF policymaking in Section 254 of the Act state:²

- “Quality services should be available at just, reasonable, and affordable rates.
- “Access to advanced telecommunications and information services should be provided in all regions of the Nation.
- “Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.
- “All providers of telecommunications services should make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service.
- “There should be specific, predictable and sufficient Federal and State mechanisms to preserve and advance universal service.
- “Elementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services as described in subsection (h).”

Section 254(b) also gives the Joint Board and the Commission further authority to establish additional principles that they “determine are necessary and appropriate for the protection of the public interest, convenience, and necessity” and are consistent with the Act.³ In the 1996 *Recommended Decision*⁴, the Joint Board proposed an additional principle of “competitive neutrality” which the Commission subsequently adopted.⁵ This principle was defined as meaning that “universal service support mechanisms and rules neither unfairly advantage nor disadvantage one provider over another, and neither unfairly favor nor disfavor one technology over another.”

Our analysis is guided by these seven principles and two additional principles that we feel are important to the promotion of the public interest. First, the burden placed on consumers for supporting the fund should be minimized to the extent needed to provide the most efficient universal service support possible. Second, consumers in all regions of the nation deserve the benefits of competition, and universal service support for that competition should be administered in the most efficient manner possible.

¹ 47 USC §151

² 47 USC §254 (b) (1)-(7)

³ 47 USC §254 (b) (7)

⁴ *In the Matter of Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Recommended Decision, 12 FCC Rcd 87 (released November 8, 1996) (*1996 Recommended Decision*).

⁵ *In the Matter of Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, FCC 97-157 (released May 8, 1997) (*1996 Universal Service Order*).

CRITERIA FOR EVALUATING UNIVERSAL SERVICE FUND REFORM PROPOSALS

Based on the overarching principle of the promotion of the public interest, the seven statutory universal service principles promulgated under Section 254, and the two additional pro-consumer principles we propose, we establish the following criteria criterion for evaluating USF reform alternatives:

- Universal Service:
 - Maximize the availability, affordability, and adoption of telecommunications services and advanced information services.
- Economic Efficiency:
 - Maximize consumer utility.
 - Maximize benefits and minimize costs.
 - Maximize the capturing of network externalities.
 - Minimize deadweight loss and surplus losses.
- Equity:
 - Allocate costs and benefits in an equitable manner.
 - Minimize contribution burden with a definition of “reasonably comparable rates” that reflects real-world use of telecommunications and advanced information services and accounts for the overall economic differences between high-cost and all other areas of the nation.
- Competitive Neutrality:
 - Minimize any market distortions caused by universal service subsidies.
 - Maximize incentives for market deployment of most advanced and efficient communications technologies.
- Planning for the Future:
 - Minimize the likelihood that supported networks will become obsolete in the foreseeable future.
 - Minimize the need for, and amount of future universal service support.
- Openness and Consumer Protection:
 - Minimize harms of vertical integration and market power by minimizing market concentration and minimizing control of access to content by any service provider.

Alternative USF reform proposals should be measured against these criteria, and those plans that strike the best balance among these factors will be well suited to achieve the goals of Section 254 in an efficient and equitable manner.

THE FREE PRESS USF REFORM DISCUSSION PROPOSAL

We approach our development of a reform proposal with the assumption that the size of the high cost fund will be fixed at the 2008 level (approximately \$4.6 billion).⁶ While we make no judgment on what the appropriate level of funding should be to achieve the goals of universal service, we do recognize the reality that continued fund growth is politically unfeasible. The Commission has acted on the Joint Board's recommendation⁷ to cap at the state-level the funds that are distributed to Competitive Eligible Communication Carriers (CETCs).⁸ For 2008, CETC support is projected to account for approximately \$1.52 billion of the \$4.62 billion spent on the high cost fund, or one-third of the entire program. Though this cap is only interim (for one year) and only applies to one-third of the total monies in the High Cost Fund, growth in the funds apportioned to incumbents has largely been stable since 2003 according to the Joint Board.⁹ Furthermore, the High Cost Loop program is subject to an annual index cap and the Interstate Access Support program has an annual target. Together these two programs account for \$1.52 billion of the total \$3.1 billion in projected 2008 support for incumbent carriers. There is no indication that this Commission or Congress are willing to let the high cost fund grow larger than the current level, which is nearly 170 percent higher than the level in 1999.¹⁰

THE CURRENT DISTRIBUTION OF HIGH COST FUNDS

Given a fixed amount of available funding and our desire to see the high cost program restructured to facilitate universal access to next-generation broadband networks, we must look at how funds are currently distributed in order to assess how best to reallocate the fixed pool of resources.

The High Cost Fund is divided into seven separate sub-funds or programs, distinctions drawn primarily for the purposes of distinguishing between the fiscal demands of small and large incumbent carriers (confusingly called "rural" and "non-rural" carriers; competitive carriers support is based not on their size but on the size of the incumbent in whose study area they offer service).¹¹ Funds are apportioned at the study area level. Carriers operating in "rural" study areas account for all of the monies apportioned to the High Cost Loop (HCL), Safety Net Additive (SNA), Safety Valve Support (SVS), and Local Switching Support (LSS) programs, and 83 percent of the Interstate Common Line Support (ICLS) program funding. The two remaining programs, Interstate Access Support (IAS) and High Cost Model (HCM), support carriers operating in "non-rural" study areas (though approximately 25% of IAS support goes to carriers in rural study areas). Figure 1 summarizes the distribution of High Cost Fund monies between programs and study areas.

⁶ All data herein are based on the Universal Service Administration Corporation's Second Quarter 2008 Filing Appendices, available at <http://www.universalservice.org/about/governance/fcc-filings/2008/quarter-2.aspx>.

⁷ 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, 22 FCC Rcd 8998 (Fed.-State Jt. Bd. 2007) (*2007 Recommended Decision*).

⁸ 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, Order, FCC 08-122, (released May 1, 2008).

⁹ *2007 Recommended Decision*

¹⁰ *Universal Service Monitoring Report 2007*, CC Docket 98-202, December 2007. Total High Cost Fund support in 1999 was \$1.718 billion, with CETC support accounting for only \$500,000 of the total. For 2008 the projected HCF amount is \$4.62 billion, with \$1.52 billion flowing to CETCs. Incumbent HCF support has thus increase 80 percent since 1999, while CETC support has increased some 300,000 percent.

¹¹ The Act defines "rural telephone company" as "a local exchange carrier operating entity to the extent such entity: Provides common carrier service to any local exchange carrier study area that does not include either any incorporated place of 10,000 inhabitants or more, or any part thereof, based on the most recently available population statistics of the Bureau of the Census; or any territory, incorporated or unincorporated, included in an urbanized area, as defined by the Bureau of the Census as of August 10, 1993; Provides telephone exchange service, including exchange access, to fewer than 50,000 access lines; Provides telephone exchange service to any local exchange carrier study area with fewer than 100,000 access lines; or Has less than 15 percent of its access lines in communities of more than 50,000 on the date of enactment of the Telecommunications Act of 1996. See 47 U.S.C. § 153(37).

**Figure 1: High Cost Fund Support by Program and Study Area Type
(Projected 2008)**

High Cost Program	Carriers in Rural Study Areas		Carriers in Non-Rural Study Areas		All Carriers	
	Annual Cost (est. 2008)	% of HCF	Annual Cost (est. 2008)	% of HCF	Annual Cost (est. 2008)	% of HCF
High Cost Loop (HCL)	\$1,477,563,492	32%	\$0	0%	\$1,477,563,492	32%
Safety Net Additive (SNA)	\$42,759,408	1%	\$0	0%	\$42,759,408	1%
Safety Valve Support (SVS)	\$1,021,668	0.02%	\$0	0%	\$1,021,668	0.02%
Local Switching Support (LSS)	\$475,096,980	10%	\$0	0%	\$475,096,980	10%
Interstate Common Line Support (ICLS)	\$1,323,918,276	29%	\$266,197,320	6%	\$1,590,115,596	34%
Interstate Access Support (IAS)	\$174,629,880	4%	\$511,944,624	11%	\$686,574,504	15%
High Cost Model Support (HCM)	\$0	0%	\$348,559,066	8%	\$348,559,066	8%
All High Cost Fund Support (HCF)	\$3,494,989,704	76%	\$1,126,701,017	24%	\$4,621,690,721	100%

Source: Author's Calculations based on USAC Second Quarter 2008 Filing Appendices

High Cost Fund support is available on a portable basis to any carrier designated by a state or the Commission to be an Eligible Telecommunications Carrier (ETC). As previously mentioned, much of the current impetus for USF reform stems from the rapid growth in support for competitive ETCs, who are primarily wireless carriers offering a service perceived by consumers to be a complementary, not a substitutable service. Thus, whereas Congress in 1996 likely envisioned a future market where incumbent and competitive ETCs compete for the same customer, the market has instead developed to where the typical household subscribes to a landline offered by an incumbent ETC while also subscribing to one or more mobile wireless lines offered by one or more competitive ETCs.

Because of the identical support rule, CETC support is based on the incumbents per line cost. This, as detailed by the Joint Board and many commenters in this proceeding, is problematic for numerous reasons, most importantly that it inflates the size of needed support in a manner completely divorced from cost. A prime example noted by the Joint Board¹² is the support CETCs receive from the Interstate Access Support and Interstate Common Line Support programs. These two programs are designed to offset revenue losses from the reduction in interstate access charges while also maintaining low subscriber line charges (SLCs). This is a sensible subsidy, but only if the subsidized carrier charges tariff-based access charges and only if they are not permitted to recover from the customer via increases in subscriber line charges the “lost” revenues resulting from a reduction in access charges. However, most CETCs are not subject to caps on subscriber line charges, and thus can recover any losses from access charge reduction from the end user.¹³ Furthermore, the Commission has determined that wireless carriers cannot impose tariff-based access charges,¹⁴ noting that many already operate in a bill and keep manner. Thus the need for competitive carriers to receive any support from IAS or ICLS is questionable at best.

In addition, wireless CETCs also receive Local Switching Support (LSS), which is based on the relatively high per line switching costs incurred by small rural LECs. But wireless networks are not designed in a similar manner and these carriers arguably have no demonstrated need for LSS support, certainly not at the same level as rural ILECs. In total, competitive carriers receive over \$900 million in annual IAS and ICLS support, which accounts for 60 percent of all CETC high cost funding and 20 percent of the entire High Cost Fund (see Figure 2).

¹² *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, (released January 9, 2008), paragraph 23, (*Identical Support NPRM*).

¹³ *Identical Support NPRM*, paragraph 23.

¹⁴ *In the Matter of Petitions of Sprint PCS and AT&T Corp for Declaratory Ruling Regarding CMRS Access Charges*, WT Docket No. 01-316, Declaratory Ruling, FCC 02-203, (release July 3, 2002).

**Figure 2: High Cost Fund Support by Program and Carrier Type
(Projected 2008)**

High Cost Program	Incumbent Carriers		Competitive Carriers		All Carriers	
	Annual Cost (est. 2008)	% of HCF	Annual Cost (est. 2008)	% of HCF	Annual Cost (est. 2008)	% of HCF
High Cost Loop (HCL)	\$1,033,675,776	22%	\$443,887,716	10%	\$1,477,563,492	32%
Safety Net Additive (SNA)	\$30,112,728	1%	\$12,646,680	0%	\$42,759,408	1%
Safety Valve Support (SVS)	\$681,780	0.01%	\$339,888	0%	\$1,021,668	0.02%
Local Switching Support (LSS)	\$340,104,000	7%	\$134,992,980	3%	\$475,096,980	10%
Interstate Common Line Support (ICLS)	\$1,015,043,136	22%	\$575,072,460	12%	\$1,590,115,596	34%
Interstate Access Support (IAS)	\$496,126,380	11%	\$190,448,124	4%	\$686,574,504	15%
High Cost Model Support (HCM)	\$184,685,242	4%	\$163,873,824	4%	\$348,559,066	8%
All High Cost Fund Support (HCF)	\$3,100,429,045	67%	\$1,521,261,675	33%	\$4,621,690,721	100%

Source: Author's Calculations based on USAC Second Quarter 2008 Filing Appendices

There are a total of 1,855 unique Study Areas participating in the High Cost Fund, with 1,798 receiving some amount of support in 2008. Approximately 150 million lines receive some type of HCF support, with nearly 100 million of these lines being those of non-rural carriers receiving Interstate Access Support.

Overall the average monthly cost per High Cost Fund supported line is just \$2.58. For those lines in non-rural carriers study areas the support is less than a dollar per month per line, while it is above \$12 per month per line in rural carrier study areas. In total, rural carrier study areas account for just 16 percent of all supported lines, but 76 percent of High Cost Fund support (see Figure 3).

**Figure 3: High Cost Fund Support by Study Area and Carrier Type
(Projected 2008)**

Study Area Carrier Type [^]	Study Area Carrier Cost Type	Number of Supported Study Areas#	Annual High Cost Fund Support (est. 2008)	Supported Lines*	Average Monthly Cost Per Supported Line+	Percent of All Supported Lines	Percent of High Cost Fund
Rural	Average Schedule Incumbent	455	\$242,455,248	2,023,684	\$9.98	1%	5%
Rural	Cost Incumbent	899	\$2,243,974,656	17,080,176	\$10.95	11%	49%
Rural	Competitive	283	\$1,008,559,800	4,696,739	\$17.89	3%	22%
Non-Rural	Average Schedule Incumbent	1	\$2,838,648	107,530	\$2.20	0.1%	0.1%
Non-Rural	Cost Incumbent	70	\$611,160,490	92,882,783	\$0.55	62%	13%
Non-Rural	Competitive	230	\$512,701,876	33,224,821	\$1.29	22%	11%
All Rural Carrier Areas		1,637	\$3,494,989,704	23,800,599	\$12.24	16%	76%
All Non-Rural Carrier Areas		301	\$1,126,701,017	126,215,134	\$0.74	84%	24%
All Average Schedule Incumbents		456	\$245,293,896	2,131,214	\$9.59	1%	5%
All Cost Incumbents		969	\$2,855,135,149	109,969,773	\$2.16	74%	62%
All Competitive Carriers		373	\$1,521,261,676	37,322,661	\$3.40	25%	33%
All High-Cost Fund		1,798	\$4,621,690,721	149,423,648	\$2.58	100%	100%

[^] 176 of the 1,855 study areas (which are served mostly by competitive carriers) have some lines classified as rural, and some as non-rural. Five of these 176 study areas receive no High Cost Fund support.

In total, 57 of the 1,855 study areas receive no support (mostly non-rural, cost carrier study areas). In total, 34,771,170 lines reported for these 57 study areas receive no high-cost fund support.

* For each study area and for each sub-high-cost-fund (except HCM) the number of supported "loops" (or "lines") is reported by USAC. For this table, the maximum number of loops for each study area + cost type combination is used as the "line" count.

+ Weighted average based on number of loops in each study area.

Source: Author's Calculations based on USAC Second Quarter 2008 Filing Appendices

Though the Interstate Common Line Support program receives the most funding of the seven HCF programs, the High Cost Loop program is the costliest on a per-line basis. However, half of all HCL supported lines receive less than \$7 support per month per line. In total half of all lines receive less than 31 cents per month in high cost fund support, while 95 percent of all High Cost Fund supported lines receive less than \$12 support per month per line (see Figure 4).

**Figure 4: Per Line Monthly High Cost Fund Support by Program
(Projected 2008)**

All Study Areas						
High Cost Program	Annual Cost (est. 2008)	Supported Lines*	Average Monthly Per Supported Line Cost+	Median Monthly Per Supported Line Cost+	95th Percentile Monthly Per Supported Line Cost+	99th Percentile Monthly Per Supported Line Cost+
High Cost Loop (HCL)	\$1,477,563,492	10,840,029	\$11.36	\$6.93	\$36.35	\$75.34
Safety Net Additive (SNA)	\$42,759,408	2,435,303	\$1.46	\$1.22	\$3.88	\$5.05
Safety Valve Support (SVS)	\$1,021,668	155,627	\$0.55	\$0.63	\$1.88	\$3.51
Local Switching Support (LSS)	\$475,096,980	10,669,574	\$3.71	\$2.58	\$9.14	\$18.32
Interstate Common Line Support (ICLS)	\$1,590,115,596	17,182,963	\$7.71	\$6.10	\$17.90	\$34.75
Interstate Access Support (IAS)	\$686,574,504	119,721,063	\$0.48	\$0.20	\$1.62	\$3.99
High Cost Model Support#	\$348,559,066	11,840,589	\$2.45	\$1.17	\$6.40	\$6.51
All High Cost Fund Support	\$4,621,690,721	149,423,648	\$2.58	\$0.31	\$11.49	\$34.52

* Supported Lines are those reported for study areas that received non-zero funding from each respective program. USAC reports some study areas with lines that receive zero funding for each respective program.

USAC reports High Cost Model Support by Study Area, but does not list the total number of supported loops. For this table, the number of HCM supported lines is the maximum total lines reported for a given study area receiving non-zero HCM support.

+ Weighted based on number of loops in each study area, reported for each program. For the monthly per line support values for the entire High Cost Fund, the maximum lines reported for each study area is used.

Source: Author's Calculations based on USAC Second Quarter 2008 Filing Appendices

For non-rural study areas the per line monthly support is quite low, with half of all lines receiving less than 17 cents per month and 95 percent of all lines receiving \$5.15 or less in per line support per month. For rural study areas, half of all supported lines receive less than \$5 per line per month in HCF support. However, there are some relatively expensive rural study areas that weight up the average cost. In total, 95 percent of rural study area lines receive less than \$44 per month in per line support (see Figure 5).

**Figure 5: Per Line Monthly High Cost Fund Support
by Program and Study Area Type
(Projected 2008)**

Rural Study Areas						
High Cost Program (Carriers Operating in Rural Study Areas)	Annual Cost (est. 2008)	Supported Lines*	Average Monthly Per Supported Line Cost+	Median Monthly Per Supported Line Cost+	95th Percentile Monthly Per Supported Line Cost+	99th Percentile Monthly Per Supported Line Cost+
High Cost Loop (HCL)	\$1,477,563,492	10,840,029	\$11.36	\$6.93	\$36.35	\$75.34
Safety Net Additive (SNA)	\$42,759,408	2,435,303	\$1.46	\$1.22	\$3.88	\$5.05
Safety Valve Support (SVS)	\$1,021,668	155,627	\$0.55	\$0.63	\$1.88	\$3.51
Local Switching Support (LSS)	\$475,096,980	10,669,574	\$3.71	\$2.58	\$9.14	\$18.32
Interstate Common Line Support (ICLS)	\$1,323,918,276	13,312,135	\$8.29	\$6.52	\$20.01	\$38.51
Interstate Access Support (IAS)	\$174,629,880	9,774,769	\$1.49	\$0.98	\$4.52	\$9.27
High Cost Model Support#	\$0	0	\$0.00	\$0.00	\$0.00	\$0.00
All High Cost Fund Support for Rural Only Study Areas	\$3,494,989,704	23,800,599	\$12.24	\$4.85	\$43.75	\$99.72

Non-Rural Study Areas						
High Cost Program (Carriers Operating in Non-Rural Study Areas)	Annual Cost (est. 2008)	Supported Lines*	Average Monthly Per Supported Line Cost+	Median Monthly Per Supported Line Cost+	95th Percentile Monthly Per Supported Line Cost+	99th Percentile Monthly Per Supported Line Cost+
High Cost Loop (HCL)	\$0	0	\$0.00	\$0.00	\$0.00	\$0.00
Safety Net Additive (SNA)	\$0	0	\$0.00	\$0.00	\$0.00	\$0.00
Safety Valve Support (SVS)	\$0	0	\$0.00	\$0.00	\$0.00	\$0.00
Local Switching Support (LSS)	\$0	0	\$0.00	\$0.00	\$0.00	\$0.00
Interstate Common Line Support (ICLS)	\$266,197,320	3,870,828	\$5.73	\$6.10	\$6.32	\$6.89
Interstate Access Support (IAS)	\$511,944,624	109,360,919	\$0.39	\$0.19	\$1.40	\$2.62
High Cost Model Support#	\$348,559,066	11,724,175	\$2.48	\$1.17	\$6.40	\$6.51
All High Cost Fund Support for Non-Rural Only Study Areas	\$1,126,701,017	126,215,134	\$0.74	\$0.17	\$5.15	\$7.04

* Supported Lines are those reported for study areas that received non-zero funding from each respective program. USAC reports some study areas with lines that receive zero funding for each respective program.

USAC reports High Cost Model Support by Study Area, but does not list the total number of supported loops. For this table, the number of HCM supported lines is the maximum total lines reported for a given study area receiving non-zero HCM support.

^ 172 of the 1,801 study areas that receive non-zero support have some lines supported by IAS classified as rural, and some as non-rural. 171 of these are served by Competitive carriers, accounting for 99.33% of all lines in these 172 Study Areas.

+ Weighted based on number of loops in each study area, reported for each program. For the monthly per line support values for the entire High Cost Fund, the maximum lines reported for each study area is used.

Source: Author's Calculations based on USAC Second Quarter 2008 Filing Appendices

Incumbent lines account for three-quarters of all High Cost Fund-subsidized lines, with the bulk being IAS program lines. Half of all Incumbent supported lines receive less than 26 cents per line per month of HCF support, while 95% of all incumbent lines are supported at a cost of less than \$10 per month per line. Competitive carriers receive a similar level of support, with a median per line monthly cost of 62 cents, and a 95th percentile per line monthly cost of \$13.59 (see Figure 6). Given that competitive support is based on the incumbent's costs, these similarities are not too surprising.

**Figure 6: Per Line Monthly High Cost Fund Support
by Program and Carrier Type
(Projected 2008)**

Incumbent Carrier Study Areas						
High Cost Program (Incumbent Carriers Only)	Annual Cost (est. 2008)	Supported Lines*	Average Monthly Per Supported Line Cost+	Median Monthly Per Supported Line Cost+	95th Percentile Monthly Per Supported Line Cost+	99th Percentile Monthly Per Supported Line Cost+
High Cost Loop (HCL)	\$1,033,675,776	7,113,957	\$12.11	\$6.60	\$38.83	\$84.68
Safety Net Additive (SNA)	\$30,112,728	1,406,065	\$1.78	\$1.41	\$3.88	\$6.86
Safety Valve Support (SVS)	\$681,780	64,005	\$0.89	\$0.63	\$2.96	\$3.51
Local Switching Support (LSS)	\$340,104,000	6,988,765	\$4.06	\$2.80	\$11.07	\$21.32
Interstate Common Line Support (ICLS)	\$1,015,043,136	11,335,267	\$7.46	\$5.67	\$19.51	\$39.19
Interstate Access Support (IAS)	\$496,126,380	86,687,624	\$0.48	\$0.20	\$1.67	\$3.99
High Cost Model Support#	\$184,685,242	7,349,411	\$2.09	\$1.17	\$6.06	\$6.06
All High Cost Fund Support for Incumbent Carriers	\$3,100,429,045	112,100,987	\$2.30	\$0.26	\$9.85	\$40.16

Competitive Carrier Study Areas						
High Cost Program (Competitive Carriers Only)	Annual Cost (est. 2008)	Supported Lines*	Average Monthly Per Supported Line Cost+	Median Monthly Per Supported Line Cost+	95th Percentile Monthly Per Supported Line Cost+	99th Percentile Monthly Per Supported Line Cost+
High Cost Loop (HCL)	\$443,887,716	3,726,072	\$9.93	\$7.68	\$25.93	\$59.80
Safety Net Additive (SNA)	\$12,646,680	1,029,238	\$1.02	\$0.94	\$2.83	\$2.83
Safety Valve Support (SVS)	\$339,888	91,622	\$0.31	\$0.11	\$0.69	\$0.72
Local Switching Support (LSS)	\$134,992,980	3,680,809	\$3.06	\$2.16	\$8.33	\$9.22
Interstate Common Line Support (ICLS)	\$575,072,460	5,847,696	\$8.20	\$6.30	\$15.35	\$29.96
Interstate Access Support (IAS)	\$190,448,124	33,033,439	\$0.48	\$0.31	\$1.60	\$2.06
High Cost Model Support#	\$163,873,824	4,491,178	\$3.04	\$1.83	\$6.40	\$8.68
All High Cost Fund Support for Competitive Carriers	\$1,521,261,675	37,322,661	\$3.40	\$0.62	\$13.59	\$23.11

* Supported Lines are those reported for study areas that received non-zero funding from each respective program. USAC reports some study areas with lines that receive zero funding for each respective program. There are 3 Study Areas (all served by Competitive carriers) that receive support, but report zero lines.

USAC reports High Cost Model Support by Study Area, but does not list the total number of supported loops. For this table, the number of HCM supported lines is the maximum total lines reported for a given study area receiving non-zero HCM support.

+ Weighted based on number of loops in each study area, reported for each program. For the monthly per line support values for the entire High Cost Fund, the maximum lines reported for each study area is used.

Source: Author's Calculations based on USAC Second Quarter 2008 Filing Appendices

The per line monthly support data in Figures 3 through 6 seem to indicate that a substantial amount of lines that are supported by the Universal Service Fund receive relatively small amounts of per line support. This calls into question the need for such support for given the Act's requirement for "reasonably comparable" rates. Arguably, it does not seem unreasonable for rates in rural areas to be a few dollars higher than in urban areas (and in fact, many state regulators keep rural rates *below* the level in urban areas).

Furthermore, many of these supported lines are either located in markets with telephony service offered by multiple non-USF supported companies (such as VoIP over cable or non-USF supported mobile wireless carriers), or they are USF-supported lines offered by carriers whose rates are not regulated in any fashion (such as wireless CETCs).

Thus it is possible that some USF supported carriers are receiving small amounts of per line support without any associated reduction in consumer prices (i.e. mobile wireless providers, who are not rate-regulated). It is also possible that incumbent carriers are receiving USF support that enables them to hold their retail rates below cost in the face of competition from other unregulated technologies that offer a higher level of service (such as VoIP over broadband offered by cable companies or fixed terrestrial wireless companies). In the incumbent LEC case we of course recognize that their rates are often set at a fixed level by state authorities (and by the FCC in the case of the SLC). However, as we will discuss below, over a dozen states have completely or near completely deregulated retail rates charged by incumbent LECs. Furthermore, the majority of incumbent USF funds are distributed to price-cap regulated carriers, who arguably under the incentive-regulation scheme have the ability to operate profitably without universal service support.¹⁵

Given the nature of the converged marketplace that has emerged since the 1996 Act, and the essential nature of broadband infrastructure (which supports essential applications such as telephony and email), it is worth knowing what portion of the fund goes to funding telephony lines that require relatively minor amounts of per-line monthly support. Such funding could arguably be diverted towards supporting rural broadband infrastructure, without significantly impacting telephony subscribers and maintaining the principles of reasonably comparable rates and competitive neutrality.

It turns out that a *substantial* amount of the HCF is used to offer marginal per line support. Half of the \$4.6 billion High Cost Fund goes to supporting lines that require less than \$15 per month in per line support. A full 70 percent of the fund goes to supporting lines that require less than \$30 per month in per line support (see Figure 7). Stated another way, 94 percent of all HCF lines receive less than \$10 per month in support, while only 1.3 percent of all HCF lines receive more than \$30 per month in support. In total, \$1.9 billion annually goes to support lines requiring less than \$10 per month each, while \$3.3 billion annually goes to support lines requiring less than \$30 per month each in funding. If we accept the Joint Board's recommendation that broadband should be a universal supported service, and if the fund must be held at the current level, then the logical conclusion is that the funds going to lines with only marginal support needs would be better utilized for funding broadband infrastructure builds in unserved areas.

¹⁵ The Joint Board and the Commission of course rejected this notion when first establishing the High Cost Fund in 1996. See *1996 Recommended Decision*, paragraph 158; *1996 Universal Service Order*, paragraph 145. The Commission did so noting that "price cap regulation is an important tool for smoothing the transition to competition and that its use should not foreclose price cap companies from receiving universal service support." It seems that now 12 years later in marketplace of convergence with many price cap carriers offering non-rate regulated services (broadband and/or television) and some price cap carriers relieved by states from rate regulation, that is may be worth revisiting this decision.

**Figure 7: Per Line Monthly High Cost Fund Support by Cost - All Carriers
(Projected 2008)**

All Carriers				
Amount of High Cost Support Per Line is...	Number of Lines	Percent of All Supported Lines*	Total Annual High Cost Support	Percent of High Cost Fund
Less than \$10 Per Month	140,480,041	94.0%	\$1,851,907,533	40.1%
Less than \$20 Per Month	145,481,992	97.4%	\$2,678,263,068	57.9%
Less than \$30 Per Month	147,526,129	98.7%	\$3,275,332,660	70.9%
Less than \$40 Per Month	148,195,881	99.2%	\$3,549,867,485	76.8%
Less than \$50 Per Month	148,659,840	99.5%	\$3,797,848,493	82.2%
Less than \$60 Per Month	148,893,982	99.6%	\$3,952,949,669	85.5%
Less than \$75 Per Month	149,099,449	99.8%	\$4,118,967,737	89.1%
Less than \$100 Per Month	149,227,811	99.9%	\$4,252,282,001	92.0%
Less than \$500 Per Month	149,419,859	100.0%	\$4,565,940,761	98.8%
Less than \$1000 Per Month	149,420,550	100.0%	\$4,571,440,145	98.9%
Less than \$1433 Per Month	149,423,648	100.0%	\$4,621,690,721	100.0%

* Supported Lines are the maximum reported for study areas that received non-zero funding. There are 149,423,648 lines that received some type of high-cost funding.

Source: Author's Calculations based on USAC Second Quarter 2008 Filing Appendices

To put the above data into perspective, consider that the average per month cost of local exchange service is approximately \$36.¹⁶ Contrast that with the average per month cost of cable broadband Internet of \$41¹⁷ and the cost of unlimited-calling full-featured VoIP service at \$25 per month.¹⁸ Also consider that cable modem service is available to approximately 95 percent of all U.S. households, including many of those in USF-supported areas. Thus, for a total cost of \$66, a consumer who lived in a USF-supported study area that is also served by a cable modem provider could pay \$66 per month for unlimited broadband Internet access *and* unlimited local and long distance calling; or that same consumer could pay \$36 for local exchange service, subsidized by USF. Now assume that the per line USF support was \$30 per month, a reasonable assumption given that 70% of supported lines receive less than this amount. In that case, if USF funds were not available, the cost of local-calling-only telephone service would be *equal* to the cost of high-speed broadband plus unlimited local-and-long-distance VoIP services.

¹⁶ See Trends in Telephone Service, Industry Analysis and Technology Division Wireline Competition Bureau, February 2007, Table 3-2. In 2005 the average monthly household expenditure for local exchange service was \$36, with long distance wireline service accounting for an additional \$8, though this survey counted bundled wireline local and long distance service as purely local. Wireless service accounted for an average of \$53 in monthly expenditures per household.

¹⁷ See John B. Horrigan, "Home Broadband Adoption 2006," Pew Internet & American Life Project, May 28, 2006.

¹⁸ Vonage's Residential Premium Unlimited VoIP plan offers the following for \$24.99 a month: Unlimited local and long distance in the US, Canada, and Puerto Rico; free calls to landline phones in Italy, France, Spain, UK and Ireland; plus 25 additional calling features like call waiting, voicemail and caller ID.

This possible real-world example illustrates just exactly why the continued focus on telephony in a broadband era runs counter to the modernization principles of universal service as embodied in the 1996 Act, and counter to the principle of competitive neutrality adopted by the Commission in 1996. It could be argued that the continued support of lines that require less than \$20 per month in per line support (97 percent of all HCF-supported lines) sends the wrong economic signals to the market, and impedes the transition into broadband era. Also consider the fact that 26 percent of all high cost funding goes to support competitive carrier lines needing less than \$20 per month of per line support *based not on their own per line costs but on the ILEC's* (see Figure 8), and the fact that the subscribers of the vast majority of these lines do not benefit from rate regulation.

Figure 8: Per Line Monthly High Cost Fund Support by Cost and Carrier Type (Projected 2008)

Incumbent Carriers						
Amount of High Cost Support Per Line is...	Number of Lines	Percent of All Supported Lines*	Percent of All Supported Incumbent Lines	Total Annual High Cost Support	Percent of High Cost Fund	Percent of All Incumbent's Share of High Cost Fund
Less than \$10 Per Month	106,608,541	71.3%	95.1%	\$1,055,071,945	22.8%	34.0%
Less than \$20 Per Month	109,003,109	72.9%	97.2%	\$1,464,650,905	31.7%	47.2%
Less than \$30 Per Month	110,385,014	73.9%	98.5%	\$1,881,054,637	40.7%	60.7%
Less than \$40 Per Month	110,964,648	74.3%	99.0%	\$2,118,003,481	45.8%	68.3%
Less than \$50 Per Month	111,393,131	74.5%	99.4%	\$2,346,546,829	50.8%	75.7%
Less than \$60 Per Month	111,609,186	74.7%	99.6%	\$2,489,769,661	53.9%	80.3%
Less than \$75 Per Month	111,795,106	74.8%	99.7%	\$2,640,669,457	57.1%	85.2%
Less than \$100 Per Month	111,921,656	74.9%	99.8%	\$2,771,838,565	60.0%	89.4%
Less than \$500 Per Month	112,098,380	75.0%	100.0%	\$3,064,254,313	66.3%	98.8%
Less than \$1000 Per Month	112,099,071	75.0%	100.0%	\$3,069,753,697	66.4%	99.0%
Less than \$1433 Per Month	112,100,987	75.0%	100.0%	\$3,100,429,045	67.1%	100.0%

Competitive Carriers						
Amount of High Cost Support Per Line is...	Number of Lines	Percent of All Supported Lines*	Percent of All Supported Competitive Lines	Total Annual High Cost Support	Percent of High Cost Fund	Percent of All Competitive Carriers' Share of High Cost Fund
Less than \$10 Per Month	33,871,500	22.7%	90.8%	\$796,835,587	17.2%	52.4%
Less than \$20 Per Month	36,478,883	24.4%	97.7%	\$1,213,612,163	26.3%	79.8%
Less than \$30 Per Month	37,141,115	24.9%	99.5%	\$1,394,278,023	30.2%	91.7%
Less than \$40 Per Month	37,231,233	24.9%	99.8%	\$1,431,864,003	31.0%	94.1%
Less than \$50 Per Month	37,266,709	24.9%	99.9%	\$1,451,301,663	31.4%	95.4%
Less than \$60 Per Month	37,284,796	25.0%	99.9%	\$1,463,180,007	31.7%	96.2%
Less than \$75 Per Month	37,304,343	25.0%	100.0%	\$1,478,298,279	32.0%	97.2%
Less than \$100 Per Month	37,306,155	25.0%	100.0%	\$1,480,443,435	32.0%	97.3%
Less than \$500 Per Month	37,321,479	25.0%	100.0%	\$1,501,686,447	32.5%	98.7%
Less than \$1000 Per Month	37,321,479	25.0%	100.0%	\$1,501,686,447	32.5%	98.7%
Less than \$1381 Per Month	37,322,661	25.0%	100.0%	\$1,521,261,675	32.9%	100.0%

* Supported Lines are the maximum reported for study areas that received non-zero funding. There are 149,442,187 lines that received some type of high-cost funding. 112,100,987 of these are Incumbent lines. 37,322,661 of these are Competitive Carrier lines.

Source: Author's Calculations based on USAC Second Quarter 2008 Filing Appendices

This latter point is very important, as the continued need for USF support should be tied in some manner to both actual costs *and* a tangible consumer benefit in the form of a proportional lowering of the retail service cost. In the case of non-rate regulated carriers, it is not at all clear that this consumer benefit exists.

Questioning the need for USF support to maintain “reasonably comparable” rates is certainly justified for those carriers whose rates are not regulated and whose own costs are likely far lower than the subsidy received. But the data seem to indicate that the need for continued high cost funding to keep non-rural carrier’s rates “reasonably comparable” is also questionable. Non-rural carrier lines requiring less than \$10 per month in per line support account for nearly 100 percent of all non-rural supported lines, and nearly 100 percent of the \$1.13 billion in high cost funding going to non-rural carriers (see Figure 9).

**Figure 9: Per Line Monthly High Cost Fund Support
by Cost and Study Area Type
(Projected 2008)**

Carriers Operating in Rural Study Areas						
Amount of High Cost Support Per Line is...	Number of Lines	Percent of All Supported Lines*	Percent of All Supported Rural SA Lines	Total Annual High Cost Support	Percent of High Cost Fund	Percent of All Rural SA's Share of High Cost Fund
Less than \$10 Per Month	15,584,230	10.4%	65.5%	\$563,663,232	12.2%	16.1%
Less than \$20 Per Month	19,123,572	12.8%	80.3%	\$1,181,434,656	25.6%	33.8%
Less than \$30 Per Month	21,384,629	14.3%	89.8%	\$1,850,241,984	40.0%	52.9%
Less than \$40 Per Month	22,394,598	15.0%	94.1%	\$2,272,717,632	49.2%	65.0%
Less than \$50 Per Month	22,971,304	15.4%	96.5%	\$2,581,050,228	55.8%	73.9%
Less than \$60 Per Month	23,206,815	15.5%	97.5%	\$2,737,086,528	59.2%	78.3%
Less than \$75 Per Month	23,415,457	15.7%	98.4%	\$2,905,751,796	62.9%	83.1%
Less than \$100 Per Month	23,603,208	15.8%	99.2%	\$3,107,320,956	67.2%	88.9%
Less than \$500 Per Month	23,795,928	15.9%	100.0%	\$3,424,639,944	74.1%	98.0%
Less than \$1000 Per Month	23,796,619	15.9%	100.0%	\$3,430,139,328	74.2%	98.1%
Less than \$1433 Per Month	23,800,599	15.9%	100.0%	\$3,494,989,704	75.6%	100.0%

Carriers Operating in Non-Rural Study Areas						
Amount of High Cost Support Per Line is...	Number of Lines	Percent of All Supported Lines*	Percent of All Supported Non-Rural SA Lines	Total Annual High Cost Support	Percent of High Cost Fund	Percent of All Non-Rural SA's Share of High Cost Fund
Less than \$1 Per Month	105,397,072	70.5%	83.5%	\$279,337,987	6.0%	24.8%
Less than \$5 Per Month	119,700,529	80.1%	94.8%	\$625,255,977	13.5%	55.5%
Less than \$10 Per Month	126,205,575	84.5%	100.0%	\$1,124,833,040	24.3%	99.8%
Less than \$15 Per Month	126,210,574	84.5%	100.0%	\$1,125,546,490	24.4%	99.9%
Less than \$20 Per Month	126,210,574	84.5%	100.0%	\$1,125,546,490	24.4%	99.9%
Less than \$25 Per Month	126,215,134	84.5%	100.0%	\$1,126,701,017	24.4%	100.0%

* Supported Lines are the maximum reported for study areas that received non-zero funding. There are 149,423,648 lines that received some type of high-cost funding. 23,800,599 of these are lines in Rural Study Areas. 126,215,134 of these are lines in Non-Rural Study Areas.

Source: Author's Calculations based on USAC Second Quarter 2008 Filing Appendices

Figure 9 shows that the monthly per line cost burden is much higher for carriers operating in rural study areas as compared to those operating in non-rural study areas. But even here the relative support burden is still relatively small for the vast majority of lines. Over 65 percent of the lines in rural study areas receive less than \$10 per month in per line high cost support. Over 80 percent of the lines in rural study areas receive less than \$20 per month in per line high cost support, accounting for one-third of all funding going to carriers in rural study areas. The data in Figure 9 also indicates where the focus of the High Cost Fund could be directed -- on the lines with monthly per line support needs above \$20, or the 4.7 million lines in rural study areas that currently receive \$2.3 billion in annual high cost fund support.

Figure 10 details the distribution of per line monthly costs for each of the seven High Cost Fund programs. The Interstate Access Support and High Cost Model programs all have very low per line monthly support costs accounting for virtually all of the lines supported by these programs. The amount of per line support for the Safety Net Additive and Safety Valve Support programs are also low, with the most expensive lines requiring less than \$7 per month in per line support. The High Cost Loop, Local Switching Support and Interstate Common Line Support programs have lines with substantially higher monthly support needs. But even here a large amount of the funding goes to support lines at a level of less than \$20 per month per line.

**Figure 10: Per Line Monthly High Cost Fund Support
by Program
(Projected 2008)**

High Cost Loop Program - All Study Areas

Amount of High Cost Loop Support Per Line is...	Number of Lines	Percent of All Supported Lines*	Percent of All Supported HCL Program Lines	Total Annual High Cost Support	Percent of High Cost Fund	Percent of All HCL Program's Share of High Cost Fund
Less than \$10 Per Month	6,866,115	4.6%	63.3%	\$345,622,956	7.5%	23.4%
Less than \$20 Per Month	9,336,877	6.2%	86.1%	\$758,525,436	16.4%	51.3%
Less than \$30 Per Month	10,174,586	6.8%	93.9%	\$1,002,935,784	21.7%	67.9%
Less than \$40 Per Month	10,407,680	7.0%	96.0%	\$1,101,375,348	23.8%	74.5%
Less than \$50 Per Month	10,540,593	7.1%	97.2%	\$1,172,585,832	25.4%	79.4%
Less than \$60 Per Month	10,687,302	7.2%	98.6%	\$1,272,924,540	27.5%	86.2%
Less than \$75 Per Month	10,730,965	7.2%	99.0%	\$1,308,146,760	28.3%	88.5%
Less than \$100 Per Month	10,805,607	7.2%	99.7%	\$1,386,819,276	30.0%	93.9%
Less than \$500 Per Month	10,836,049	7.3%	100.0%	\$1,436,086,524	31.1%	97.2%
Less than \$876 Per Month	10,840,029	7.3%	100.0%	\$1,477,563,492	32.0%	100.0%

* Supported Lines are the maximum reported for the HCL program in study areas that received non-zero HCL funding. There are 149,423,648 lines that received some type of high-cost funding. 10,840,029 of these are lines receive High Cost Fund Program support.

Safety Net Additive Program - All Study Areas

Amount of Safety Net Additive Support Per Line is...	Number of Lines	Percent of All Supported Lines*	Percent of All Supported SNA Program Lines	Total Annual High Cost Support	Percent of High Cost Fund	Percent of All SNA Program's Share of High Cost Fund
Less than \$1 Per Month	792,314	0.5%	32.5%	\$6,047,976	0.1%	14.1%
Less than \$2 Per Month	1,934,999	1.3%	79.5%	\$24,505,704	0.5%	57.3%
Less than \$3 Per Month	2,290,954	1.5%	94.1%	\$35,302,956	0.8%	82.6%
Less than \$4 Per Month	2,398,493	1.6%	98.5%	\$40,213,056	0.9%	94.0%
Less than \$5 Per Month	2,409,883	1.6%	99.0%	\$40,793,160	0.9%	95.4%
Less than \$6 Per Month	2,415,673	1.6%	99.2%	\$41,168,844	0.9%	96.3%
Less than \$7 Per Month	2,435,303	1.6%	100.0%	\$42,759,408	0.9%	100.0%

* Supported Lines are the maximum reported for the SNA program in study areas that received non-zero SNA funding. There are 149,423,648 lines that received some type of high-cost funding. 2,434,303 of these are lines receive Safety Net Additive Program support.

Safety Valve Support Program - All Study Areas

Amount of Safety Valve Support Per Line is...	Number of Lines	Percent of All Supported Lines*	Percent of All Supported SVS Program Lines	Total Annual High Cost Support	Percent of High Cost Fund	Percent of All SVS Program's Share of High Cost Fund
Less than \$1 Per Month	147,842	0.1%	95.0%	\$749,556	0.0%	73.4%
Less than \$2 Per Month	149,577	0.1%	96.1%	\$788,652	0.0%	77.2%
Less than \$3 Per Month	152,881	0.1%	98.2%	\$901,272	0.0%	88.2%
Less than \$4 Per Month	155,505	0.1%	99.9%	\$1,011,708	0.0%	99.0%
Less than \$5 Per Month	155,505	0.1%	99.9%	\$1,011,708	0.0%	99.0%
Less than \$6 Per Month	155,505	0.1%	99.9%	\$1,011,708	0.0%	99.0%
Less than \$7 Per Month	155,627	0.1%	100.0%	\$1,021,668	0.0%	100.0%

* Supported Lines are the maximum reported for the SVS program in study areas that received non-zero SVS funding. There are 149,423,648 lines that received some type of high-cost funding. 155,627 of these are lines receive Safety Valve Support Program support.

Source: Author's Calculations based on USAC Second Quarter 2008 Filing Appendices

**Figure 10 (continued): Per Line Monthly High Cost Fund Support
by Program
(Projected 2008)**

Local Switching Support Program - All Study Areas

Amount of Local Switching Support Per Line is...	Number of Lines	Percent of All Supported Lines*	Percent of All Supported LSS Program Lines	Total Annual High Cost Support	Percent of High Cost Fund	Percent of All LSS Program's Share of High Cost Fund
Less than \$1 Per Month	1,227,551	0.8%	11.5%	\$9,813,372	0.2%	2.1%
Less than \$5 Per Month	8,273,924	5.5%	77.5%	\$225,055,536	4.9%	47.4%
Less than \$10 Per Month	10,229,400	6.8%	95.9%	\$384,705,216	8.3%	81.0%
Less than \$25 Per Month	10,624,552	7.1%	99.6%	\$452,561,388	9.8%	95.3%
Less than \$50 Per Month	10,656,518	7.1%	99.9%	\$464,846,436	10.1%	97.8%
Less than \$75 Per Month	10,668,330	7.1%	100.0%	\$473,387,076	10.2%	99.6%
Less than \$100 Per Month	10,668,830	7.1%	100.0%	\$473,871,960	10.3%	99.7%
Less than \$240 Per Month	10,669,574	7.1%	100.0%	\$475,096,980	10.3%	100.0%

* Supported Lines are the maximum reported for the LSS program in study areas that received non-zero LSS funding. There are 149,423,648 lines that received some type of high-cost funding. 10,669,574 of these are lines receive Local Switching Support Program support.

Interstate Common Line Support Program - All Study Areas

Amount of Interstate Common Line Support Per Line is...	Number of Lines	Percent of All Supported Lines*	Percent of All Supported ICLS Program Lines	Total Annual High Cost Support	Percent of High Cost Fund	Percent of All ICLS Program's Share of High Cost Fund
Less than \$10 Per Month	13,653,981	9.1%	79.5%	\$859,830,024	18.6%	54.1%
Less than \$20 Per Month	16,515,781	11.1%	96.1%	\$1,319,352,816	28.5%	83.0%
Less than \$30 Per Month	16,944,175	11.3%	98.6%	\$1,446,262,944	31.3%	91.0%
Less than \$40 Per Month	17,075,073	11.4%	99.4%	\$1,501,361,304	32.5%	94.4%
Less than \$50 Per Month	17,130,412	11.5%	99.7%	\$1,531,387,584	33.1%	96.3%
Less than \$60 Per Month	17,154,940	11.5%	99.8%	\$1,547,120,232	33.5%	97.3%
Less than \$75 Per Month	17,175,437	11.5%	100.0%	\$1,562,713,368	33.8%	98.3%
Less than \$100 Per Month	17,176,156	11.5%	100.0%	\$1,563,462,384	33.8%	98.3%
Less than \$500 Per Month	17,182,941	11.5%	100.0%	\$1,589,896,872	34.4%	100.0%
Less than \$829 Per Month	17,182,963	11.5%	100.0%	\$1,590,115,596	34.4%	100.0%

* Supported Lines are the maximum reported for the ICLS program in study areas that received non-zero ICLS funding. There are 149,423,648 lines that received some type of high-cost funding. 17,182,963 of these are lines receive Interstate Common Line Support Program support.

Source: Author's Calculations based on USAC Second Quarter 2008 Filing Appendices

**Figure 10 (continued): Per Line Monthly High Cost Fund Support
by Program
(Projected 2008)**

Interstate Access Support Program - All Study Areas

Amount of Interstate Access Support Per Line is...	Number of Lines	Percent of All Supported Lines*	Percent of All Supported IAS Program Lines	Total Annual High Cost Support	Percent of High Cost Fund	Percent of All IAS Program's Share of High Cost Fund
Less than \$1 Per Month	106,098,392	71.0%	88.6%	\$361,278,924	7.8%	52.6%
Less than \$2 Per Month	115,589,506	77.4%	96.5%	\$518,840,124	11.2%	75.6%
Less than \$3 Per Month	118,003,107	79.0%	98.6%	\$589,203,648	12.7%	85.8%
Less than \$4 Per Month	119,025,558	79.7%	99.4%	\$633,369,528	13.7%	92.3%
Less than \$5 Per Month	119,268,600	79.8%	99.6%	\$646,393,788	14.0%	94.1%
Less than \$10 Per Month	119,710,146	80.1%	100.0%	\$684,834,408	14.8%	99.7%
Less than \$15 Per Month	119,719,921	80.1%	100.0%	\$686,227,548	14.8%	99.9%
Less than \$20 Per Month	119,719,921	80.1%	100.0%	\$686,227,548	14.8%	99.9%
Less than \$26 Per Month	119,721,063	80.1%	100.0%	\$686,574,504	14.9%	100.0%

* Supported Lines are the maximum reported for the IAS program in study areas that received non-zero IAS funding. There are 149,423,648 lines that received some type of high-cost funding. 119,721,063 of these are lines receive Interstate Access Support Program support.

High Cost Model Program - All Study Areas

Amount of High Cost Model Per Line is...	Number of Lines	Percent of All Supported Lines*	Percent of All Supported HCM Program Lines	Total Annual High Cost Support	Percent of High Cost Fund	Percent of All HCM Program's Share of High Cost Fund
Less than \$1 Per Month	4,795,472	3.2%	40.5%	\$33,608,609	0.7%	9.6%
Less than \$2 Per Month	7,289,303	4.9%	61.6%	\$74,859,030	1.6%	21.5%
Less than \$3 Per Month	8,243,844	5.5%	69.6%	\$102,547,816	2.2%	29.4%
Less than \$4 Per Month	9,005,655	6.0%	76.1%	\$134,930,277	2.9%	38.7%
Less than \$5 Per Month	9,033,791	6.0%	76.3%	\$136,383,018	3.0%	39.1%
Less than \$10 Per Month	11,836,029	7.9%	100.0%	\$347,504,167	7.5%	99.7%
Less than \$15 Per Month	11,836,029	7.9%	100.0%	\$347,504,167	7.5%	99.7%
Less than \$20 Per Month	11,839,664	7.9%	100.0%	\$348,283,958	7.5%	99.9%
Less than \$25 Per Month	11,840,589	7.9%	100.0%	\$348,559,066	7.5%	100.0%

* Supported Lines are the maximum reported for study areas that received non-zero funding. There are 149,423,648 lines that received some type of high-cost funding. 11,840,589 of these are lines are in study areas that receive High Cost Model Program support.

Source: Author's Calculations based on USAC Second Quarter 2008 Filing Appendices

These data are very informative, for if policymakers are serious about implementing a USF reform plan that is truly modernizing, then funds will have to be shifted and short-term sacrifices will have to be made to achieve long-term benefits. However, we should make it very clear that we are not very comfortable with the notion of consumer rates for basic telephone service rising -- indeed, because of convergence and joint/common cost we'd fully expect such rates to be *declining* precipitously. This is why it is so important for the rate regulatory accounting models to also be reformed to account for convergence. If this is done (as discussed below), we believe that regulated telephone rates will not need to be adjusted upwards, even as support for marginal-need lines is phased down.

Meaningful USF reform requires upsetting the status quo, leading to short-term discomfort all around. We recognize that the utility consumers derive from broadband services are far greater than that of telephony, and that given the choice between slightly higher telephony rates or new broadband service in unserved areas, most consumers would choose the latter. Though millions of Americans currently benefit from subsidized telephony, those subsidies are paid by millions more who reap very small indirect benefits from the fund. A shifting of funds towards broadband would greatly increase the direct benefits to those receiving the new services, and it would also vastly improve the indirect benefits to those paying for the bulk of the subsidy.

The path of universal service policy has reached a fork in the road, where there are difficult choices to be made. We feel that in the long run, the greatest level of social and consumer benefits can only be achieved by transitioning away from telephony support and increasing support for broadband infrastructure deployment.

MODERNIZING THE FUND TO SUPPORT BROADBAND IN A COST-EFFICIENT MANNER: REDIRECTING SUPPORT TO BROADBAND

We now move to constructing the architecture for a new modernized universal service High Cost Fund. We begin by answering some key questions in order to define the scope of the problem and the funding needs:

- How many U.S. homes have no access to broadband service?
- What quality level constitutes a reasonably comparable and potentially future-proof definition of broadband service?
- How much will it cost to deploy this service to all unserved areas?
- And what will be the expected level of ongoing support needed to ensure that the new HCF-supported infrastructure can be maintained at an end-user cost that is reasonably comparable to the national average?

While there is no definitive inventory of U.S. premises that lack the ability to subscribe to broadband service, there are a few data points that allow us to formulate a reasonable estimate of the true number of unserved households. First, the National Cable and Telecommunications Association estimates that 99 percent of U.S. households are passed by cable television service.¹⁹ FCC Form 477 data indicates that 96 percent of homes where cable service is available have access to cable modem service.²⁰ From this we conclude that as many as 95 percent of all U.S. homes can purchase cable modem broadband service; though it is likely somewhat lower than this, perhaps 92 percent (based on estimate from NCTA). That is, approximately 9 million of the nearly 118 million U.S. households lack the ability to subscribe to cable modem broadband.²¹ Of course it is possible that some of these homes that lack cable modem access can purchase DSL service. Form 477 data indicates that 79 percent of ILEC lines are DSL capable. But Form 477 provides no estimate of how the cable modem and DSL availability figures overlap. So while there may be DSL service available in areas without cable modem service (and of course vice versa), we feel that an estimate of between 7 and 9 million homes unserved by broadband is reasonable.²²

To answer the question of what constitutes a minimal level of service quality to merit the definition of “broadband”, we will rely on the statutory guidance laid out in Section 706 of the 1996 Act. The act defined the term “advanced telecommunications capability” as “high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.”²³ Currently, the best available compression technology requires approximately 5 Mbps (5 million bits per second) in bandwidth to transmit reasonably high quality high-

¹⁹ *In the Matter of Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, MB Docket No. 05-255, Twelfth Annual Report, (released March 3, 2006), paragraph 30.

²⁰ *High-Speed Services for Internet Access: Status as of December 31, 2006*, Industry Analysis and Technology Division, Wireline Competition Bureau, Table 14.

²¹ The figure for the total number of U.S. households varies depending on the particular U.S. Census Bureau source used. The October 2007 Current Population Survey puts the total number of U.S. households at 117,840,000. The 2006 American Community Survey estimated 111,617,402 U.S. households, while the 2005 ACS estimated 111,090,617 U.S. households. Thus it is unclear if the 2007 CPS number is accurate, as it seems high based on the 2005 and 2006 data.

²² We are explicitly excluding satellite broadband from this estimate, as the high latency and slow speed (particularly on the upload side) of this service render it arguably substandard for the purposes of facilitating VoIP service. We also exclude fixed wireless service, which constitutes a very small percentage of all U.S. broadband lines (0.75% of all residential advanced service lines). And we specifically exclude mobile wireless broadband service, as the carrier’s deployment of 3G capable services has been almost exclusively limited to urban and suburban areas. Furthermore, 3G speeds are still slow enough (especially on the upload side) to arguably not meet a reasonable definition of true broadband.

²³ See § 706(c) of the 1996 Act.

definition video content.²⁴ Thus, we will define the minimum level of broadband service quality for future USF support to be 5Mbps symmetrical, with latencies no lower than that needed to enable real-time VoIP calls of superior quality. However, while a 5Mbps symmetrical definition is adequate for the 2008 world, it may not be for the 2018 world. Thus, we will also define the quality level to include scalability: supported infrastructure should meet the 5Mbps symmetrical threshold, and be capable of scaling much higher with minimal additional cost.

Finally, we must estimate the initial and ongoing costs of providing the above-defined level of broadband service to the 6 to 8 million households that will be served under the reformed HCF. This is no easy task, as estimates depend completely on the particulars of each service area, as well as the type of technology used. While we *do not* propose the type of technology that the broadband High Cost Fund should support (see more below), for the purposes of estimation we will choose fiber-optic-to-the-home (FTTH) technology. We do this for two reasons. First, FTTH currently is the only consumer technology deployed that is capable of offering dedicated symmetrical bandwidths approaching (or exceeding) 100Mbps -- a bandwidth that is arguably "future-proof". Second, for the purposes of cost-estimations we feel it is prudent to be conservative -- i.e. to overestimate when possible. FTTH being a wireline technology is likely to have initial deployment costs that exceed fixed wireless or 4G mobile wireless (or any other wireless) technologies. FTTH is also likely to have higher initial costs than copper-based solutions like VDSL, but lower ongoing and maintenance costs.

Using FTTH as the proxy technology for cost estimates, we suggest that the 7-9 million unserved homes can be connected at an average cost ranging between \$2,000 and \$5,000 per home (see footnote for details).²⁵ Thus the total funding needed to serve all currently unserved homes could be as little as \$14 billion or as much as \$45 billion, with the likely cost falling somewhere between \$25 and \$30 billion. We further assume that the ongoing maintenance and operation (M&O) costs to be approximately 10 percent of the initial capital costs, or between \$17 and \$42 per month per home, with the likely M&O cost falling around \$30 per month per home.²⁶ Obviously all or a portion of this will be offset by user subscription fees, meaning for some study areas the M&O needs from the HCF will be minimal or non-existent.

Thus, the move to a modernized USF under our model will require approximately \$30 billion for infrastructure deployment and a substantially smaller amount for ongoing operation and maintenance costs not recouped by end-user charges. This price tag may be lower, given the \$7 billion allocated for broadband deployment and adoption in the American Recovery and Re-investment Act.

²⁴ The MPEG-4 codec, version h.264 (used notably by IP video service provider Apple) transmits HD video with an approximate average bitrate of 4.5Mbps. DBS providers also use MPEG-4 with a similar bit rate. The older MPEG-2 codec still in use by cable operators requires between 12 and 20 Mbps. In general, the more "action" or motion in the video, the higher the bitrate needed to maintain a constant level of quality.

²⁵ This estimate is arrived at by synthesizing several sources and then making a good-faith guess. A 2001 study estimated an average cost of \$1000 per home to wire every U.S. home with fiber (see "Broadband: Bringing Home the Bits," U.S. Computer Science and Telecommunications Board, November 2001). The Fiber to The Home Council now puts this at \$800 per home (see www.ftthcouncil.org/UserFiles/File/ftthprimer_feb.pdf). Telecom consultant John Widhausen Jr. puts the figure at \$1,000 per home (see net.educause.edu/ir/library/pdf/EPO0801.pdf). These estimates of course included the 21 percent of U.S. homes that are rural, as well as the 79 percent that are urban and suburban. The latter is where the country's largest provider of FTTH service, Verizon, has focused their deployment efforts. According to Verizon, their FTTH deployment costs continue to decline. In 2006 it cost Verizon \$850 per home to deploy FTTH, down from \$1,400 in 2004. By 2010 Verizon expects the FTTH deployment costs to decline to \$700 per home (see <http://newscenter.verizon.com/kit/nxtcomm/Product-sheet-FiOS-1Q07.pdf>). Certainly the costs per home will be higher in rural areas because of the lower densities. A recent estimate by a rural Vermont FTTH company put the cost per rural home for FTTH at \$2,900 (\$1,100 to pass each rural home and \$1,800 for the actual "hook up" of the home; see "Rural FTTH 'perfectly economical,' says Muni Fiber Veteran", *Telephony Online*, April 29, 2008). Of course some rural homes are more "rural" than others, while some unserved homes lie in urbanized clusters inside rural areas. It is possible that some of the most extreme rural homes will not see FTTH, instead being served by a high-capacity wireless solution such as LTE. Considering all of these factors, we feel that a cost estimate range of \$2,000-\$5,000 per unserved home is a reasonable and conservative value.

²⁶ This is a very rough estimate based on various financial details of other publicly funded FTTH deployments. See for example, Uptown Services, LLC, "Network Planning Study", (Greenwood, Colorado, 2002).

The question is then, how do we pay for this? Where will the \$20-\$30 billion come from? We suggest based on the analysis presented above that new broadband construction could be immediately funded via a redirection of the telephony funds that provide only “marginal” monthly support. We feel that a value of \$20 per month is a reasonable approximation of “marginal” monthly support that falls within the Act’s requirement for “reasonably comparable” rates. Thus, we propose a “phasedown” schedule of \$20 per line per month in high cost support, phased in over a 5-year period. So for lines that receive less than \$20 per month in per line support, the phasedown will be 100 percent, or 20 percent per year for 5 years. For all other lines, the final phasedown level is equal to the percentage that decreases the support by \$20 per month per line.

During the 5-year phasedown period a larger and larger pool of money will be directed to the new Broadband High Cost Fund (“BB HCF”). After the 5-year phasedown there will be approximately \$3 billion in annual funds for the BB HCF. Also, after the 5-year phasedown period, there will be approximately \$1.6 billion in annual support remaining for the “old” High Cost Fund (to provide ongoing support in the “very high cost” areas whose per line monthly support needs are above \$20).

We propose that the length of the Broadband High Cost Fund be 10 years total -- the initial 5-year phasedown followed by a 5-year further construction period. During this time, approximately \$25 billion in total funds will be reallocated from the old telephony High Cost Fund to the Broadband High Cost Fund. This amount is roughly equal to the amount we estimate it will cost to deploy next-generation broadband service to the 6 to 8 million unserved homes (given that perhaps as much as \$5 billion of the Stimulus Act funds could be used to bring broadband to unserved areas, this \$25 billion could close the gap on the unserved problem at the end of the 10-year transition period).

MODERNIZATION REQUIRES CHANGING THE REGULATORY MODEL TO RECOGNIZE THE REVENUE OPPORTUNITIES BROUGHT BY A TRIPLE-PLAY-CAPABLE BROADBAND INFRASTRUCTURE

The phasing down of support will of course lead to some carriers wanting or needing to raise end-user rates. Those carriers not subject to rate-regulation (such as most wireless carriers) are already free to set rates at any level, and can freely incorporate any losses in funding from the phasedown into their retail charges. However, it is likely since many of these carriers already receive above-need subsidies based on ILEC’s costs, they might simply absorb these losses and maintain rates at current levels. Similarly, the incumbents operating in the more than dozen states with no intrastate rate regulation are also already free to set rates at any level. Because these state’s decisions to end rate regulation were based on the conclusion that markets are competitive, these carriers are also unlikely to raise end-user rates.

For rate-regulated carriers (either price cap, or rate of return), there will have to be changes made to the regulated rates -- or preferably -- changes made to the entire rate regulatory model. We suggest that the old system of Part 32 accounting and Part 64 cost and revenue separations is anachronistic in a world of convergence. In fact, it is possible that the accounting system perpetuates the cross-subsidization of competitive non-rate regulated services by uncompetitive rate-regulated services -- in direct violation of Section 254(k) of the Act. We suggest that as a part of the USF modernization and transition reform, that the old accounting and regulatory structure be set aside, and replaced with a system that recognizes the total cost of an infrastructure, and the revenue earning potential of that infrastructure. In such a regulatory system, the need for future ongoing support would be reduced, as the streams of unregulated and regulated revenues more than offset the forward looking infrastructure costs.

However, if the rate regulatory and support structure is not modernized, our phasedown plan will then require some adjustment of rate schedules. For price cap incumbent carriers, either the FCC or state regulators may consider adjusting the price caps upwards proportional to the per line phasedown amounts. However, we reiterate the argument that under price cap regulation these carriers already have incentives to keep costs down to earn a healthy return absent USF support. Also, considering that the average monthly per line HCF support for incumbent price cap carriers is just \$2.16 per line (see Figure 3), there may not be a

need for regulators to make any adjustments to price caps for the majority of these supported lines. For rate-of-return carriers the Commission or state regulators will need to adjust retail rates based on the level of phasedown.

MODERNIZING THE FUND TO SUPPORT BROADBAND IN A COST-EFFICIENT MANNER: THE DISTRIBUTION OF HIGH COST FUNDS FOR BROADBAND

We now turn to the question of how to distribute the monies from the Broadband High Cost Fund. We start with the basic premise that it is not efficient to fund multiple infrastructures in high-cost areas, but that consumers in these areas must be able to enjoy the benefits of competition. Thus any infrastructure supported by the Broadband High Cost Fund must be operated under Title II open access obligations. This should not be a point of controversy, as it is unreasonable to expend taxpayer resources on establishing monopolies. Open Access is the best policy tool for creating competition in markets with high fixed costs that cannot economically support multiple facilities-based competitors. The use of open access in the rural broadband context is a vital component of ensuring that citizens in these unserved areas enjoy the same benefits of competition that are available to those who live in more competitive markets.

As a matter of policy, the use of open access in the universal service context is well established globally. For example, the Organization for Economic Cooperation and Development (OECD) recently stated in a recommendation to member states that "[g]overnments providing money to fund broadband rollouts should avoid creating new monopolies," further recommending that any publicly-funded broadband infrastructure "should be open access, meaning that access to that network is provided on non-discriminatory terms to other market participants."²⁷ The National Telecommunications Cooperative Association (NTCA) made it explicit in their April USF comments that they felt USF broadband funding should come with Title II obligations.²⁸

In addition to mandatory open access obligations, all projects supported by the Broadband High Cost Fund must adhere to the FCC's *Broadband Policy Statement*²⁹, and also agree to not discriminate against any type of Internet content based on its source or destination.³⁰ These fundamental consumer protections are needed to ensure that consumers of the BB HCF networks are protected from the potential abuses of last-mile market power and vertical integration in content markets. Consumers in rural America should have access to the same "open" Internet that is available to consumers in all free nations of the world.

We previously mentioned (in our cost estimate discussion) that the Broadband High Cost Fund will be technology neutral, so long as the funded service is capable of the minimum level of broadband service

²⁷ <http://www.oecd.org/dataoecd/32/58/40629032.pdf>

²⁸ "However, given that broadband should be included in the future definition of universal service... it is appropriate to reclassify and regulate broadband/high-speed Internet access service under Title II of the Act." See Comments of National Telecommunications Cooperative Association *In the Matter of High-Cost Universal Service Support and the Federal-State Joint Board on Universal Service*, Notices of Proposed Rulemakings (NPRMs), WC Docket No. 05-337, CC Docket No. 96-45, FCC 08-4 (Identical Support Rule NPRM), FCC 08-5 (Reverse Auctions NPRM), and FCC 08-22 (Federal-State Joint Board NPRM), (submitted April 17, 2008), (April 2008 NTCA Comments).

²⁹ In the Matters of *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities* (CC Docket No. 02-33); *Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services* (CC Docket No. 01-337); *Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services; 1998 Biennial Regulatory Review – Review of Computer III and ONA Safeguards and Requirements* (CC Docket Nos. 95-20, 98-10); *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities – Internet Over Cable Declaratory Ruling* (GN Docket No. 00-185); *Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable* (CS Docket No. 02-52); FCC 05-151, Released September 23, 2005 ("Broadband Policy Statement").

³⁰ Specifically, this principle was detailed in the AT&T-Bell South Merger Conditions, which stated: "This commitment shall be satisfied by AT&T/BellSouth's agreement not to provide or to sell to Internet content, application, or service providers, including those affiliated with AT&T/BellSouth, any service that privileges, degrades or prioritizes any packet transmitted over AT&T/BellSouth's wireline broadband Internet access service based on its source, ownership or destination." See *AT&T Inc. and BellSouth Corporation Application for Transfer of Control*, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189, (released Mar. 26, 2007) (*AT&T-BellSouth Merger Order*).

quality defined as 5Mbps symmetrical, capable of scaling much higher with minimal additional cost, and with latencies no lower than that needed to enable real-time VoIP calls of superior quality. For our cost estimates we used fiber-to-the-home as our projected support technology. However, the Broadband High Cost Fund should not be limited to FTTH. All services capable of meeting the minimum quality definition -- be they wireline, fixed or mobile wireless, or any other technology -- should be considered for funding.

As to the issue of retail rates for the new USF-supported broadband services, we must recognize that currently, broadband rates are not regulated in any fashion. However, in the selection process for granting of funds (described below) we suggest that funds be awarded to those carriers willing to offer services at rates reasonable comparable to those available in urban areas. If ongoing support is needed to achieve this outcome, then that will be considered in the awarding of funds. This structure will maintain adherence to the language of Section 254(b)(3) of the Act.

We have no strong opinion as to the issue of geographic designation of service areas. We do however suggest that Census geographies such as Blocks, Block Groups or Tracts may be the appropriate geographic designation for service areas. These Census geographies are small in size, but not so small as to raise transaction costs in program design and implementation. The use of Census geographies will also enable better targeting of support, as the FCC's Form 477 data collection efforts have now transitioned to a Census-based system.³¹

Given that each study area should see the funding of a single infrastructure via the BB HCF, the key question is how to best determine who receives the subsidy to construct and operate that infrastructure as a common carrier. We suggest that the best method for awarding support would be via a Request For Proposal (RFP) process, and not a reverse auction. RFPs allow the funding entity to weigh alternative proposals on more dimensions than just cost (such as a FTTH proposal that also includes WiFi zones). RFPs are superior to reverse auctions, avoiding pitfalls such as collusion, setting reserve prices, and other difficult aspects of auction design. We feel that RFPs are especially superior to the reverse auction process outlined by the FCC, which seems to have a bias towards incumbent carriers. We suggest that the Commission (and not the states) is best suited to solicit and evaluate Request for Proposals (RFP) in order to determine "winning" BB HCF recipients.

In the RFP process, the Commission can deal with the issue of need for ongoing support costs. In many cases the additional revenue streams from services other than VoIP that can be offered via broadband infrastructure will generate enough revenue to cover ongoing costs (as well as a reasonable rate of return). However, an entity submitting a RFP can indicate the level of ongoing support needed -- if any -- and the Commission can take that under consideration.

In order to hold consumers harmless, we suggest that each carrier supported by the new BB HCF be required or off a basic VoIP (or other comparable technology) local service package to those who request it (and no other service such as broadband or video service), at a cost in line with a state-wide average price benchmark for POTS. This is similar to the current "carrier of last resort" (COLR) requirements. The key here is ensuring that those consumers who do not wish to (or cannot afford to) transition to broadband are held harmless in the face of fund modernization.

Our proposal is conducted under a 10-year timeframe. In the 10th year of the BB HCF, we suggest that the Commission undertake a complete forward-looking assessment of the continued need of the program. Ideally, the fund will be phased down, with monies used just to upgrade infrastructures to provide the best quality service, or to provide ongoing support to the "very high cost" areas. We would recommend that at this stage if the goal of universal availability of affordable next-generation broadband infrastructure has been met, then the fund should be phased down to a \$1.5 billion or lower annual level.

³¹ *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 No. 07-38, Report and Order, (adopted March 19, 2008) ("Data Order").

OPEN QUESTION: THE ROLE OF MOBILE WIRELESS TELEPHONY

Our Discussion Proposal is centered on the funding of broadband infrastructure, making no preference for fixed or mobile technologies, so long as the minimum level of service definition is met. But there is a strong argument that consumers value “mobility” in addition to basic connectivity, and that this functionality should be supported by the Fund.

There is certainly no question that American consumers look at mobile voice services as an integral part of their lives, but the question remains is the Universal Service Fund the appropriate vehicle (from a legal and practical standpoint) to fund mobile service *explicitly*. In its 2008 *Recommended Decision*, the Federal-State Joint Board on Universal Service specifically recommended the Commission establish a \$1 billion annual “mobility fund” to support construction of infrastructure for voice-grade mobile wireless service. But there are several problems with the Joint Board’s proposal. First, there was no adequate definition of “mobility” in the Joint Board’s decision. This is problematic because without an explicit understanding of the meaning of “mobility” it remains unclear how to define “unserved” areas (e.g. there are “drop zones” in many areas that are considered “served” already -- should USF be used to fund the construction of a tower in front of those homes that get spotty interior service)?

Second, there is no strong evidence that mobile wireless carriers would not maintain or deploy service in current high-cost areas absent subsidy. It is possible that some carriers may choose to deploy simply to have nationwide footprint (certainly in highway corridors in rural areas).

Third, mobile rates are not regulated, and carriers are not subsidized based on their own costs. Thus it remains quite unclear that currently deployed USF-supported mobile carriers would either raise rates or abandon service areas in the absence of subsidies. Also, the question remains that under a mobility fund do we use price benchmarks based on mobile rates, and how would those be set?

Forth, it is clear from the plain language of the Act that Congress did not intend to fund duplicate infrastructures for complementary services; instead envisioning the use of portable subsidies to fund substitutable services. Currently, though perhaps 10 or more percent of households are mobile-only, the vast majority of mobile customers maintain their subscriptions to either POTS or VoIP services.

Finally, the mobility fund envisioned by the Joint Board is for the construction of *new* mobile telephony infrastructure in unserved areas. Because of the lack of an adequate definition, it is hard for us to assess the scale of such a fund. The only guidance is the statement that grants could be awarded prioritized based on “the number of residents of each state who cannot receive a strong and reliable wireless signal at their residence.”³² But we do know from recent FCC data that just 0.2 percent of the total U.S. population lives in Census Blocks where mobile voice service is available from one or more providers.³³ In other words, only approximately 250 thousand households are located on blocks without mobile voice service availability. Also according to the same data Approximately 99.3 percent of the U.S. population living in rural counties, or 60.6 million people [of the 61 million total], have one or more different operators offering mobile telephone service in the census blocks within the rural counties in which they live.” Furthermore, according to an industry-funded study, 98 percent of the customers who living in study areas served by a subsidized wireless carrier also have service available from one or more unsubsidized wireless carriers.³⁴ Therefore the scope of the mobility problem is small.

³² *Recommended Decision*, paragraph 17.

³³ *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services*, Twelfth Report, WT Docket No. 07-71, FCC 08-28, paragraph 5 (released Feb. 4, 2008) (Twelfth Report).

³⁴ Nicholas Vantzelfde, *The Availability of Unsubscribed Wireless and Wireline Competition in Areas Receiving Universal Service Funds*, Criterion Economics, (June 13, 2007).

We suggest given these above considerations that Congress must act if it desires a mobility fund on top of a POLR fund. It is not clear that the USF is the best vehicle to achieve universal mobility. Other options like D-Block spectrum (e.g. “Frontline”³⁵) or AWS-3 spectrum (e.g. “M2Z”³⁶) proposals may be better suited towards achieving the goals of universal mobility.

We however want to reiterate that we do not object to supporting mobile infrastructures under the framework of our proposed broadband-only High-Cost Fund. If technologies such as WiMax, WiFi, or Long-Term-Evolution (“LTE”) can achieve the basic benchmark speeds and latencies set by the reformed broadband-only High-Cost program, then they can be awarded funds. In fact, the Commission when soliciting and awarding funds can make the ability to deliver mobility a considered factor under the RFP process.

THE 2008 FEDERAL-STATE JOINT BOARD USF REFORM PROPOSAL: NOT BOLD ENOUGH

In January of 2008 the Federal State Joint Board on Universal Service (“Joint Board”) released its *Recommended Decision* on how to reform the High-Cost Fund. We believe the Joint Board was correct in its determination that broadband meets the statutory definition of a supported service under Section 254. However, the Joint Board’s proposal for the creation of three separate High-Cost Funds (“Provider of Last Resort” (telephony), “Mobility”, and “Broadband” funds) does not logically square with the conclusion that broadband should be a supported service. As stated above, broadband is an infrastructure that supports telephony as an application. To support telephony in *addition* to broadband is redundant and goes against the principle of universal service as “evolving.”

The Joint Board recommended that the “Broadband Fund” receive \$300 million in annual support -- \$300 million out of a total of nearly \$4.5 billion in annual High-Cost Fund support. The notion that broadband should only receive 6.7% of the total High-Cost fund, and that this would be adequate enough to serve the goals of Section 254 is plainly absurd. The structure of the Joint Board proposal was too timid. “Bolting on” broadband support on top of the existing High-Cost Fund is the wrong way to approach USF reform.

REVERSE AUCTIONS: RIGHT CONCEPT, WRONG POLICY

The concept underlying reverse auctions -- only supporting a single infrastructure -- is correct and should be pursued. But in the various reverse auction proposals presented to the Commission, the emphasis on per-line ongoing support and lack of an explicit discussion of open access are major shortcomings that perpetuate many of the “broken” features of the current USF.

We have some specific concerns with several of the tentative conclusions in the Reverse Auction Notice of Proposed Rulemaking released by the Commission in 2008. First, the requirement that bidders must already be a certified ETC shuts out any new entrants -- most notably cable companies. Second, the conclusion that wireline LEC study area should be geographic base of study area for reverse auctions is not most efficient or competitively neutral. Third, while it is encouraging that the Commission concluded that winners of a reverse auction must be capable of providing 1.5Mbps service, broadband should not be thought of as a service -- it is infrastructure. Here the Commission has it exactly backwards. Fourth, the Commission concluded reserve prices should be based on current per-line support. This is bizarre, as it may unjustly enrich wireless carriers (who receive above cost subsidies); or it could be biased against wireless carriers, depending on current cost allocation methodology (forward looking versus historical). It is also bizarre, as current per-line support is for POTS only; yet as mentioned above, reverse auction terms are for a 1.5Mbps level of Internet-capable service. Fifth, the unanswered questions in the NPRM about frequency of auction illustrate the need to focus on support on infrastructure builds, and less so on the need for ongoing support.

³⁵ *In the Matter of Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, WT Docket No. 06-150; *Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band*, PS Docket No. 06-229, Second Further Notice of Proposed Rulemaking, (released May 21, 2008).

³⁶ *In the Matter of Service Rules for Advanced Wireless Services in the 2155-2175 MHz Band*, WT 07-195, Notice of Proposed Rulemaking, (released November 14, 2007).

There is good reason to think that while reverse auctions sound good in theory, they will likely fail in practice. We are fundamentally agnostic about this issue, but feel that a more flexible approach to awarding support, such as a Request For Proposal (RFP) might be a better approach.

THE COMMISSION AND CONGRESS SHOULD AVOID IMPOSING USF CONTRIBUTION BURDENS ON RESIDENTIAL BROADBAND CONNECTIONS

We would like to strongly urge policymakers to avoid making broadband services subject to USF contributions for the foreseeable future, even if broadband services are the main recipient of USF funding. This may seem counterintuitive or unfair, but it is based on the fundamental need to further the goals of universal service. But it is important that policymakers recognize that broadband service is currently what economists call an “elastic” service, meaning that a one percent increase in price will result in a greater than one percent decrease in subscribership. Contrast this with telephony, which is an inelastic service (extremely so in the case of basic connection service; less so in the case of long distance, though in today’s era of service bundles this distinction is disappearing). Thus, because broadband is a developing market, any USF assessment, no matter how small, could likely result in a net decrease in total broadband subscribership nationwide.

Some, including former FCC Chairman Kevin Martin, have recommended a shift to a numbers-based or capacity-based USF contributions assessment (or a hybrid of the two) as opposed to the current system based on interstate revenues. We do not oppose a move to such a system, so long as basic consumer broadband service is exempt, and so long as there are exemptions for those qualifying for Lifeline/Linkup service. We would prefer a methodology that maintained the current relative burdens between businesses and consumers (such as a numbers-capacity methodology). Studies seem to indicate that a shift towards this type of assessment would not result in a substantial change in distributional burden.³⁷

CONGRESSIONAL ACTION WILL END THE STALEMATE AT THE COMMISSION

Ultimately, enacting USF reform under the constraints of the 13-year old Section 254 and 214 is a challenging endeavor that need not be. The FCC’s willingness to move forward with bold reform may be tempered by the perceived inflexibility of the Act.

Congress has the ability and the duty to step in and remedy this problem. But the need for Congressional action does not preclude the FCC from acting, and should not be an excuse for enacting only moderate changes to the Fund.

CONCLUSION

It is plainly obvious that there are no easy solutions to correcting to the problems of the Universal Service Fund. But policymakers must act judiciously, boldly and in a manner that adheres to the Act’s commitment to ensuring universal, affordable access to the most important technologies of the era -- whatever and whenever that may be.

Broadband is the dominant communications service of the 21st century. There is little doubt that the benefits of transitioning the USF to a broadband infrastructure-based system far outweigh the costs. America’s place atop the global economy for the remainder of this century requires a comprehensive policy commitment to closing our digital divide. We strongly encourage Congress and the Commission to move expeditiously to enact reforms that make open access broadband networks the centerpiece of universal service policy.

³⁷ “Financing Universal Telephone Service”, Congressional Budget Office, March 2005.