



Investing in Rural Broadband Infrastructure The Critical Need for Universal Service Contribution Reform

WTA - Advocates for Rural Broadband, April 2014

Overview

- The Communications Act of 1934, as amended, established the Universal Service Fund (USF) to ensure that consumers in rural, insular and high-cost areas have access to communications services that are comparable to those available in urban areas at comparable prices.
- The USF has been hugely successful in delivering voice services and high-speed broadband Internet access to consumers in rural areas of our nation where the necessary infrastructure would not otherwise be economically viable.
- The enabling and transformative powers of the Internet offer the promise of economic growth, high-quality and high-paying jobs, and an improved quality of life for residents of rural America.
- There is a problem, however, because the universal service funding mechanism that makes rural broadband infrastructure investments possible is today paid for primarily from assessments on dying voice-based services.
 - In the second quarter of 2014, the USF will be funded by a 16.6% assessment on interstate and international end-user telecommunications service revenues. This is not sustainable!
 - Unless a replacement funding mechanism based on the market realities of a broadband world is developed soon, the promise that broadband holds for rural America will be wasted, and worse, rural areas could see a serious out-migration of businesses and jobs and a decline in quality of life.
 - In addition to supporting rural communications infrastructure, the USF also supports the provision of advanced information and telecommunications services, including broadband, to low income consumers, schools and libraries, and rural health care providers. Unless the USF contribution mechanism is reformed promptly, these beneficiaries will also suffer serious economic harm.
- The nation's history with major infrastructure initiatives demonstrates that we have the vision and ability to design, build, and pay for the facilities and tools necessary to open new markets and drive economic growth and job creation.
- Programs that fund infrastructure investment through equitable assessments on those that will directly benefit from that infrastructure are not so much a "tax," as they are a "user fee."
- Unlike taxes that can cause a decline in economic growth, a properly structured infrastructure funding program, with a fair and equitable system of user fees, will lead to increased economic growth, job creation, and consumer benefits.
- A new USF funding mechanism is needed that equitably spreads the cost of needed broadband infrastructure across all service providers that stand to benefit from such investment and allows universal service funding to be sustainable for the long run.
- **(NEW)** On February 12, 2014, NARUC, representing state regulators across the United States, approved a resolution calling on the FCC to expand the USF contribution base so that providers of all communications services, including broadband, be required to contribute to the USF.

Infrastructure Development Has Been Critical to the Nation's Success

Infrastructure has played a key role in making the United States the exceptional nation that it is. In the 1820s, the Erie Canal connected the East Coast with the Great Lakes and the Upper Mid-West and helped lead to the western expansion of this country. This opened a path for the migration of agriculture and industry into the interior of our country creating jobs, opportunity, and growth for our expanding population. In the 1860s, the transcontinental railroad was built connecting the East and West Coasts and spurring economic development throughout the vast expanse of our land.

In the 1930s, the Rural Electrification Act enabled the delivery of electricity throughout rural America, allowing farmers to become more productive and allowing for the development of new businesses and industries in rural communities. The Communications Act of 1934 put policies in place for the universal delivery of telecommunications services to areas of the nation where it would not otherwise have been economically viable to do so. In the 1950s, the Interstate Highway System was established, which began by connecting many disconnected roadways and culminated in the construction of a national network of superhighways that put America on wheels and fueled job creation in transportation, manufacturing, travel, and countless other industries.

“Broadband is *the* great infrastructure challenge of the early 21st Century.”¹ The Federal Communications Commission (FCC) highlighted this point in the National Broadband Plan (NBP), which was prepared at the request of Congress and released in 2010. In the NBP, the FCC explains the importance of broadband infrastructure this way:

Today, high-speed Internet is transforming the landscape of America more rapidly and more pervasively than earlier infrastructure networks. Like railroads and highways, broadband accelerates the velocity of commerce, reducing the costs of distance. Like electricity, it creates a platform for America’s creativity to lead in developing better ways to solve old problems. Like telephony and broadcasting, it expands our ability to communicate, inform and entertain.²

The NBP also observes that 100 million Americans currently do not have broadband at home and many areas of our nation lack any access to broadband services.³ To remedy this situation, and to ensure that broadband achieves its full potential for our economy and nation, the FCC proposes to reform current universal service mechanisms “to support deployment of broadband and voice in high-cost areas; and ensure that low-income Americans can afford broadband.”⁴

The Universal Service Fund has been successful in deploying ubiquitous telecommunications infrastructure, but needs reform to remain successful in a broadband world

Telecommunications provides an excellent example of what it takes to deploy infrastructure and technology throughout this diverse nation and the constructive role that government can play in this process. In the early days of telephone deployment, the Bell System built its network in cities, towns and other areas where it would be profitable, but largely bypassed rural areas where distance between customers were long, density was low, and costs high. On the belief that networks become more valuable when everyone is connected (also known as the “network effect”), the Communications Act of 1934 formally established the goal of universal service.

¹ Federal Communications Commission, *Connecting America: The National Broadband Plan*, at 3 (Mar. 16, 2010), available at <http://www.broadband.gov/download-plan/> (“National Broadband Plan”) (emphasis in original).

² Id.

³ Id.

⁴ Id at page xi.

Congress codified this principle in the Telecommunications Act of 1996, and importantly, established the means by which universal service should be paid for:

- Consumers in all regions of the nation, including rural, insular and high-cost areas, should have access to telecommunications and information services that are reasonably comparable to those services provided in urban areas and that are available at comparable rates;
- All providers of telecommunications services should make an equitable and non-discriminatory contribution to the preservation and advancement of universal service; and
- There should be specific, predictable and sufficient federal and state mechanisms to preserve and advance universal service.⁵

The national model has been to have private capital extend communication networks as far as possible, with universal service funding supporting the build-out of networks in areas where they would not otherwise be economically viable. As a result of universal service, networks have been built across this country that have enabled nearly 98% of all Americans to access voice communications service.

The Telecommunications Act was signed into law in February of 1996, and a Joint Board composed of three federal regulators, four state regulators, and one consumer advocate was given the responsibility to develop the mechanisms by which universal service would be managed and paid for.

In 1996, very few people were even aware of what would eventually become today's Internet. At that time, the Internet was still essentially a plaything for technology wonks, academics, and defense planners. There was very little (if any) e-mail or e-commerce. There was no Facebook or Twitter. Streaming video and text messaging technologies were in their infancy. Useable Voice over Internet Protocol (VoIP) telephony services were over a decade away. Data speeds were measured as Kilobits (thousands of bits per second), not the Mega- (millions), Giga- (billions), or Tera- (trillions) bits per second that are referenced today.

The USF contribution rules developed in 1996 are still largely in use today, and they require that a contributing carrier's revenues be separated three ways. First, revenues must be separated between "telecommunications" services and "information" services. Next, telecommunications service revenues are separated between revenues from "end-users" (i.e., retail revenues) and "carrier's carrier" services (i.e., wholesale services). Finally, end-user telecommunications revenues must be separated between interstate, intrastate, and international services. Each carrier's contribution obligation to the federal universal service fund is based on its quarterly interstate and international end-user telecommunications revenues.

It should not be surprising that a funding mechanism designed for the largely analog, circuit-switched and voice-centric telecommunications world of the 1990s is having difficulty adapting to the digital, packet-switched, IP and broadband communications world of today. If the universal service fund is to support the ubiquitous deployment of broadband infrastructure, the USF Contribution Mechanism must be fundamentally reformed.

⁵ Telecommunications Act of 1996 § 254(b).

The current USF Contribution Mechanism is unsustainable and must be reformed quickly if serious economic consequences are to be avoided

The current \$8.3B⁶ federal USF is funded by an assessment on each contributing carriers’ interstate and international end-user telecommunications revenues. Each quarter, the Universal Service Administrative Company (USAC) determines the funding needs of each of the four federal universal service programs: High-Cost, Lifeline,⁷ Schools & Libraries, and Rural Health Care. It also determines the size of the assessment revenue base using revenue data provided by over 3,000 contributing carriers. Dividing the funding needs by the revenue base yields the “Contribution Factor” that will be used to determine how much each telecommunications carrier must contribute to the universal service fund that quarter. Chart I shows the growth of the USF Contribution Factor since 2000.

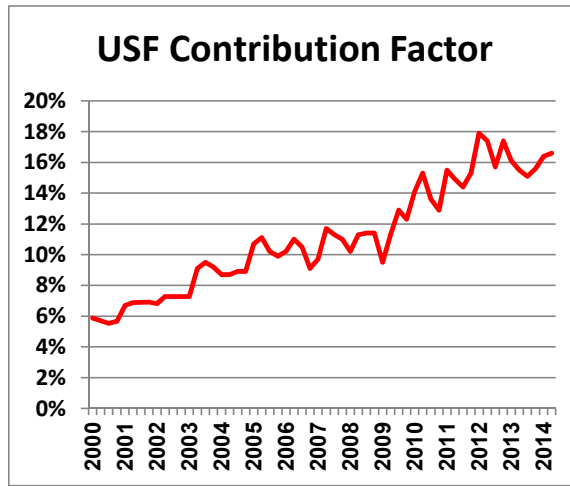


Chart I

The USF contribution factor for the second quarter of 2014 is 16.6%. The contribution factor is very high⁸ and has been growing over the past decade for two basic reasons. First, the overall size of the USF (the numerator in the contribution factor equation) has been growing. To put the overall Universal Service Fund in perspective, Table I shows the size for each program in calendar year 2013. Chart II shows the growth in the overall USF as well as each of the programs from 2000 to 2013.

Program	Size (\$Billions)
High-Cost	\$4.165
Lifeline	\$1.798
Schools & Libraries	\$2.204
Rural Health Care	\$0.159
	\$8.326

Table I – 2013 Fund Size

⁶ All data, charts and tables in the current release of this white paper have been updated to reflect actual 2013 data. The paper was initially released in February of 2013 and included 2011 data. It was subsequently updated in April of 2013 to include actual 2012 data.

⁷ Prior to 2013, the Lifeline Fund was called the Low-Income Fund.

⁸ As will be discussed in a later section of this paper, the contribution factor can and should be reduced dramatically by modernizing and expanding the base of USF contributors to include all telecommunications service providers that benefit from the availability of ubiquitous broadband infrastructure.

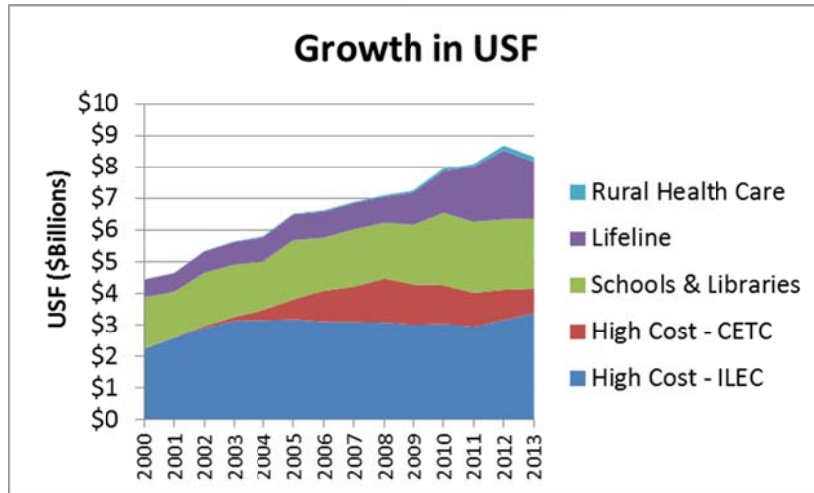


Chart II

While high-cost funding for incumbent local exchange carriers (ILECs) has been relatively constant, other components of universal service fund have been experiencing significant growth. Throughout most of the past decade, support to competitive eligible telecommunications carriers (CETCs) grew significantly. In recent years, there has been steady growth in Low-Income support for Lifeline service, due largely to prepaid wireless Lifeline services, however in the Lifeline Reform Order released in February of 2012 the FCC took actions to “eliminate waste and inefficiency, increase accountability, and transition the Fund from supporting stand-alone telephone service to broadband.”⁹

The FCC, in its USF and Intercarrier Compensation (ICC)¹⁰ Transformation Order, capped the overall size of the High-Cost program at \$4.5B per year.¹¹ The Schools & Libraries program is currently capped at roughly \$2.38B for fiscal year 2013, a level that is adjusted for inflation periodically.¹² Similarly, the Rural Health Care Program has operated since its inception with a cap of \$400M;¹³ however actual disbursements have never come close to this level.

A second, and more serious reason why the contribution factor will grow will be a decline in interstate and international end-user telecommunications revenues (the denominator in the contribution factor equation). The total amount of interstate and international telecommunications revenues has been declining since 2002. These revenues have dropped from \$19.5B in the first quarter of 2002 to \$16.0B in the second quarter of 2014.¹⁴

⁹ *Lifeline and Link Up Reform and Modernization et al.*, WC Docket No. 11-42 et al., Report and Order and Further Notice of Proposed Rulemaking, 27 FCC Rcd 6656 ¶12 (Feb. 6 2012)

(“Lifeline Reform Order”). It is notable that the Lifeline fund decreased from \$2.2B in 2012 to \$1.8B in 2013.

¹⁰ Intercarrier Compensation is the payments that carriers pay to one another for the origination and termination of calls.

¹¹ *Connect America Fund et al.*, WC Docket No. 10-90 et al., Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663 ¶ 18 (2011) (“USF/ICC Transformation Order”) pets. for review pending sub nom. In re: FCC 11-161, No. 11-9900 (10th Cir. filed Dec. 8, 2011) The Transformation Order also included significant changes on the distribution side of the USF, a number of which WTA disagrees with. The focus of this paper, however, is solely on the need for USF contribution reform.

¹² *Wireline Competition Bureau Announces E-rate Inflation-Based Cap for Funding Year 2013*, CC Docket No. 02-6, 28 FCC Rcd 2318 (Wireline Comp. Bur. 2013).

¹³ *In re Rural Health Care Support Mechanism*, WC Docket No. 02-60, Report and Order, 27 FCC Rcd 168175, ¶ 347 (2012) (Healthcare Connect Fund Order).

¹⁴ Universal Service Administrative Company quarterly reports 1Q2000 and 2Q2014.

One reason that these revenues will continue to decline is the sheer size of the contribution factor itself. At a 16.6% assessment, carriers have a powerful incentive to make their traffic look like some other type of traffic or service that is not currently assessed for universal service. This is not particularly hard to do. For example, long-distance calls pay into the federal USF but local calls do not. There was a time when consumers paid separately for local and long-distance services, but in today's marketplace consumers, wireline and wireless, are showing a strong preference for "bundles" of local and long-distance minutes and services. Some plans even offer unlimited long-distance calling. This all makes it difficult to tell what revenue is interstate or intrastate. Also, consumers have found other ways around traditional long-distance calling by using Internet-based substitute services such as email, text messaging, Facebook, Skype and Twitter. Use of service bundles and alternative Internet-based communication services will continue to grow, lowering interstate long-distance revenues, and putting further upward pressure on the USF contribution factor as it is currently structured.

Absent fundamental changes in how universal service is paid for, a continually increasing contribution factor will, sooner or later (more likely sooner), lead to a death-spiral that will make it impossible to collect the \$8.3B necessary to fund current USF programs, including the continued deployment and improvement of affordable broadband service in high-cost rural areas. This will have disastrous consequences for businesses and consumers in rural America. It will also harm low-income consumers and broadband access in schools and libraries and rural health care facilities.

Rural rate-of-return carriers serving the highest-cost areas of our country recover 70% or more of their operating costs from a combination of sources including the Universal Service Fund's High-Cost Program and revenues from intercarrier compensation (ICC).¹⁵ Both USF and ICC would be threatened if the USF contribution mechanism were to fail. If no money is coming into the High Cost Fund, USAC will be unable to reimburse rural carriers for building out networks in high-cost areas. This would violate the provisions of the Communications Act, which calls for specific, predictable and sufficient universal service support mechanisms to support high-cost rural telecommunications infrastructure investment and services.

Complicating this situation, in its USF/ICC Transformation Order the FCC implemented a nine-year transition to from the preexisting ICC system to a bill-and-keep system, effectively zeroing out rural carriers' support from the ICC mechanism.¹⁶ The FCC has provided some opportunity for carriers to recover a portion of their lost ICC revenues from the Connect America Fund (CAF),¹⁷ however the CAF would be unavailable if the USF funding mechanism were to fail. With the loss of both USF and ICC revenue, end-user rates would need to rise to unaffordable levels, and many carriers would cease operations due to an inability to cover their operating costs and meet debt service obligations on their current plant and equipment. It is doubtful that other carriers would be willing or able to take over operations in the most rural and costly areas and consumers would face the loss of basic voice service, let alone high-speed broadband.¹⁸

¹⁵ The remaining 30% of cost recovery for the highest-cost rural carriers typically comes from rates paid by end-users.

¹⁶ USF Transformation Order at ¶34.

¹⁷ The FCC created the Connect America Fund to support the provision of broadband services within the overall USF framework (USF/ICC Transformation order at ¶20). Circumstances where a carrier can request CAF recovery for partial replacement for lost ICC revenues are provided in the USF/ICC Transformation Order beginning at ¶853.

¹⁸ The FCC's Fifth Order on Reconsideration, released November 16, 2012, at ¶20, does provide limited relief in circumstances where a petitioner can demonstrate that a reduction in high-cost support would put consumers at risk of losing voice services. However, if the loss of such support were due to a failure of the USF contribution mechanism, then this "relief" would not be possible either.

Even if rural carriers could remain economically viable, it is unlikely that they would be able to make the new broadband infrastructure investments that will be necessary to maintain parity with ever-faster broadband speeds offered by carriers in urban areas.¹⁹ Should this “digital divide” materialize and grow, it would inflict serious harm on rural consumers, rural jobs, and rural economic development. The NBP speaks to the enabling opportunities that broadband offers:

- Citizens can have better visibility into and involvement in policymaking;
- A patient can be monitored at home 24 hours a day, seven days a week;
- A brilliant physics teacher can engage students in classrooms across the country;
- A working parent can advance his or her career by taking job training courses at his or her convenience;
- A small business in rural America can transact efficiently with customers and suppliers worldwide at any time.²⁰

Should urban (and worldwide) broadband speeds advance to where slower rural networks prevent effective Internet communication then the opposite would become true. Businesses and jobs would gravitate back to urban areas, rural residents would become more isolated, and the promise that broadband once held for rural economic development and quality of life would have become wasted.

Rural rate-of-return carriers and their customers would not be the only victims if policymakers fail to address the USF contribution mechanism in a timely manner. Failure would also impact recipients of Schools & Libraries (S&L), Low Income, and Rural Health Care funding. Nor would the impact be limited to western high-cost states. Appendix A provides a listing of the amount of funding received by each State and US Territory from the four universal service programs. It also shows the ranking of each State/Territory in terms of its receipts from each program as well as total USF. Table II shows the funding profile for the top 10 States/Territories in terms of overall annual USF receipts.

State	Total USF	Ranking by Fund			
		High Cost	Lifeline	S&L	Rural Health
Texas	\$588,729	1	5	2	8
California	\$577,921	21	2	1	4
Oklahoma	\$395,058	9	1	10	20
Georgia	\$294,990	11	8	6	11
New York	\$282,169	38	3	3	12
Alaska	\$278,670	4	29	16	1
Mississippi	\$261,049	2	28	23	26
Florida	\$256,265	34	4	5	43
Alabama	\$255,080	3	22	19	28
Illinois	\$241,481	33	9	4	5

Source: 2013 USAC Annual Report

Table II – Top 10 USF Recipients

Notice that California, which ranks 21st in receipt of High-Cost funding, is the second highest overall USF recipient, receiving well over one-half a billion dollars annually, because it ranks number one in S&L and number two in Lifeline funding. It is also notable that three of the top-ten States – New York, Florida and Illinois – rank in the bottom half for High-Cost funding, yet make the top-ten due to their Lifeline and S&L receipts.

¹⁹ In addition to the other serious problems that this would cause, it would violate Section 254(b)(3) of the Act, as amended, since it provides that rural consumers should have access to services “reasonably comparable” to those available in urban areas.

²⁰ National Broadband Plan at 193.

Appendix B provides similar data, but with support from each of the funds stated in terms of annual funding per person. This more accurately indicates the harm that individual consumers will experience should the USF contribution mechanism fail.²¹ Table III shows the funding profile for the top 10 States/Territories in terms of per person USF receipts.

State	USF Per Person	Per Person Ranking by Fund			
		High Cost	Lifeline	S&L	Rural Health
Alaska	\$392.37	1	2	2	1
Virgin Islands	\$223.12	2	45	1	56
North Dakota	\$151.72	3	44	31	7
Oklahoma	\$105.31	17	1	4	19
South Dakota	\$97.99	4	52	35	10
Montana	\$96.95	5	43	38	17
Wyoming	\$92.29	6	56	21	13
Mississippi	\$87.98	8	17	8	23
Guam	\$87.68	7	49	49	20
American Samoa	\$84.91	10	51	3	28

Sources: 2013 USAC Annual Report, 2010 Census

Table III – Top 10 USF per Person

Not surprisingly, High-Cost funding is a major factor in driving high USF per person receipts. While Oklahoma ranks only 17th in High Cost funding, it makes the top 10 in per-person funding due to its high per-person Low-Income and S&L receipts. With the exception of Mississippi, all of the top 10 per-person recipients are either west of the Mississippi River or insular Territories. The data from Table III, particularly when adjusted to reflect average household size, clearly shows the serious consumer impact and pain that would accompany a failure to quickly remedy the USF collection mechanism.

The manner in which the United States has funded prior infrastructure initiatives provides useful guidance for current efforts to support ubiquitous broadband deployment

Bonds sold by the State of New York financed the Erie Canal, and the costs of its construction and maintenance were recovered through tolls paid by canal users. As authorized in the Pacific Railroad Act of 1862, the transcontinental railroad was financed by a combination of 30-year bonds to be repaid from railroad operations and generous land grants along the railroad’s route. The Rural Electrification Act (REA) of 1936 created a federal agency to make and/or guarantee low-cost loans to locally-owned cooperatives for the extension of electric service to unserved rural areas. In 1949, the REA was further authorized to make loans for the extension of telephone service.

The history of the Interstate Highway System is more recent and offers interesting parallels to the issues that will be faced in reforming the funding for rural broadband infrastructure.²² Similar to the broadband network, a rapid and efficient road network promised to serve as a powerful engine for commerce, economic growth, community development, and quality of life. Thomas H. McDonald, a transportation visionary who headed the Bureau of Public Roads (BPR) from 1918 to 1953, observed:

²¹ Since this data is stated in terms of funding per person, the data would need to be adjusted for average household size to analyze individual household impact.

²² Richard F. Weingroff, *Federal-Aid Highway Act of 1956: Creating the Interstate System*, PUBLIC ROADS Vol. 60 No. 1, U.S. Department of Transportation, Federal Highway Administration (Summer 1996); Richard F. Weingroff, *Moving the Goods: As the Interstate Era Begin*, U.S. Department of Transportation, Federal Highway Administration (Updated Oct. 15, 2013), <https://www.fhwa.dot.gov/infrastructure/freight.cfm>.

We were not a wealthy Nation when we began improving our highways ... But the roads themselves helped us create a new wealth in business and industry and land values ... So it was not our wealth that made our highways possible ... Rather, it was our highways that made our wealth possible.

In the Federal-Aid Highway Act of 1938, Congress directed the BPR to study the feasibility of building a network of “superhighways,” including the feasibility of a toll system to pay for such roads. The BPR responded with a two-part report. In the first part, BPR concluded that while some routes (primarily those in and around major urban areas) could be self-supporting as toll roads, most highways in a national network would not. Part II included a “Master Plan for Free Highway Development” including a plan for a 27,000 mile non-toll, limited-access interregional highway network. Subsequently, the Federal-Aid Highway Act of 1944 proposed a 40,000 mile “National System of Interstate Highways” with routing to be selected by joint action of the state highway departments. The plan provided that roads would be designed based upon traffic expected 20 years from the date of construction. However, the 1944 Act included no specific funding for construction of the Interstate Highway System. While token funding was provided in Federal-Aid Highway Acts of 1952 and 1954, the vision for a national Interstate Highway System still remained elusive.

President Dwight Eisenhower was a major supporter of an improved national road network. Eisenhower had his initial experience with the poor state of America’s roads when he participated in the U.S. Army’s first transcontinental motorcade from Washington, D.C. to San Francisco in 1919. Later, his experience during WWII with Germany’s Autobahn network convinced him that what was needed in America was not just a good network of two-lane highways, but a system of “broader ribbons [of road] across the land.” At a meeting with state governors in 1954, Eisenhower proposed a “grand plan” for a “properly articulated national system of highways.” He called for a self-liquidating method of financing that would avoid debt. He also called for a cooperative alliance between state and federal officials to develop and accomplish such a plan.

In 1955, a bill was introduced in the House of Representatives that sought to implement Eisenhower’s vision. The bill proposed a 12-year build-out of the Interstate Highway System paid for on a pay-as-you-go basis as funding came in. The bill proposed a penny per gallon hike in the federal gas tax, as well as graduated tax increases on automobiles, trucks, and tires with revenue informally committed to the program. The federal government would cover 90% of the cost, with the states covering the remainder. The House defeated the bill by a significant margin, despite prior expectations that it would be approved. This prompted House Majority Leader John McCormack (D-MA) to observe, “Everyone wants a highway program, but no one wants to pay for it.”

An intense lobbying effort led by the trucking industry and including rubber manufacturers, tire dealers and farm groups helped to doom the legislation. At the time, the President of the American Trucking Association argued that the bill would increase taxes to “confiscatory, ruinous and unjustified levels,” and that the proposed taxes would result in heavy trucks and buses paying about 45% of the cost of the system.

The reality, however, was that the trucking and other road-related industries badly needed the new highway program and the expanded business opportunities that it would provide. What the truckers and other parties were really concerned about was that they were being asked to pay a disproportionate share of the cost, and that they would be put at a competitive disadvantage vis-à-vis other freight hauling providers (e.g., railroads). In late 1955, Secretary of Commerce Sinclair Weeks formed a committee including the Secretaries of Treasury, Defense, Agriculture and Labor to work with the various stakeholders to develop a plan to equitably fund the new highway infrastructure. By early 1956, the major parties had agreed to a new schedule of taxes and fees to fund construction of the Interstate Highway System. The Federal-Aid Highway Act of 1956, (also known as the

National Interstate and Defense Highways Act) also created the Highway Trust Fund to ensure that all highway user tax revenue would be used only for its intended purposes. The revised proposal was passed by a vote of 388 to 19. On June 29, 1956, President Eisenhower signed the Act into law formally creating the Interstate Highway System.

Over 50 years later, our nation’s investment in the Interstate Highway System stands as a shining example of how our federal government can work at its best. The modest increases in fuel taxes and other fees needed to fund the enabling infrastructure did not kill the trucking industry – instead they allowed the trucking industry to grow and prosper. In 1956, the trucking industry carried 20% of the nation’s freight; by 2006 that had increased to 70%. In 1956, there were only 120,000 tractor-trailers operating in the United States; by 2006 there were over 2 million. Trucks carried 500,000 tons of freight in 1956; by 2006 freight tonnage had increased to over 10 billion.²³ Similar success stories can be found in the motor fuels, automobile, travel and lodging, and countless other industries.

Major takeaways from the Interstate Highway process that can be useful in guiding the design of a forward-looking contribution mechanism for broadband infrastructure funding can be summarized as follows:

1. Begin with a vision of the network that will be needed 20 years from now – not just present needs;
2. Incorporate the states early-on in the planning, design, and funding of a national infrastructure network;
3. Structure the funding mechanism so that *all* stakeholder groups that stand to benefit from the infrastructure contribute to its construction and maintenance on a fair and equitable basis;
4. To the greatest extent possible, involve the stakeholders that will benefit from the new infrastructure in the debate over how the infrastructure should be paid for; and
5. Ensure that all funds collected actually go to the construction and maintenance of the promised infrastructure.

Contributions to support needed infrastructure investment are not so much a “tax” as they are a “user fee”

Traditional taxes are collected by the government from a broad cross-section of individuals or businesses and are spent on a wide variety of programs of the government’s choosing. Any given individual has no idea what government programs his or her tax payments are being spent on, and it is possible that his or her money is being spent on programs that may not directly benefit him or her.

Infrastructure assessments such as highway user fees or Universal Service Fund contributions are different. A single rural telecommunications provider does not have the resources to build a ubiquitous communications network, particularly in sparsely populated rural areas where the realities of low density and long distances make it impossible to cover network infrastructure costs from revenues that would be generated by network users. Similarly, the 1938 Bureau of Public Roads study found that toll roads would not work in many regions of an interstate highway system since lower traffic volumes could never support the high costs of rural segments of the road network. In both cases, the solution has been the creation of a nationwide infrastructure funding process – in the case of telecommunications, the Universal Service Fund, in the case of roads, the Highway Trust Fund.

Three important features distinguish successful infrastructure funding initiatives:

1. Only those who use or benefit from the supported infrastructure are required to make contributions;
2. The funds are segregated and used only for their intended purpose; and
3. A “network effect,” exists, where the infrastructure network becomes more valuable to all users as additional users are connected.

²³ American Trucking Associations, *Trucking and the Economy*, www.truckline.com.

Traditional economic theory suggests that as taxes are increased, consumption will decrease.²⁴ Successful infrastructure initiatives have exactly the opposite impact. The cost of the modest transaction fees is exceeded many fold by the economic opportunity enabled by the new infrastructure. The Highway Trust Fund and the Universal Service Fund are both examples of infrastructure funding initiatives that have directly led to significant economic growth, new jobs and industries, and an improved quality of life.

From time-to-time there have been calls of “don’t tax the Internet!”²⁵ Usually this is in the context of whether or not online retailers should have to collect state and local sales taxes, similar to those brick-and-mortar retailers are required to do, a subject well beyond the scope of this paper. While there may be a case for giving an advantage to new technology in its early stages so as to encourage its growth, there comes a time when all technologies must play by the same rules. In the 1980s, well before anyone had even heard the word “Internet,” it was decided that “enhanced services” should not have to pay access charges, as the imposition of such “legacy fees” would slow the growth of these nascent services – even though no one quite knew at that time exactly what enhanced services were, or would become. Those services laid the foundation for what eventually became the Internet and the panoply of services, applications and industries that it has enabled. Now is not the time to reexamine the “ESP Exemption.” As mentioned earlier, the FCC is now in the process of eliminating access charges as the Internet and other IP-enabled applications have come to dominate the entire telecommunications ecosystem.

It is important, however, to distinguish two essential components of this new telecommunications ecosystem. The first is the Internet itself. The second is the “Internet Connection.” For all of the great things that the Internet can do, they mean nothing to a potential user if they are not connected to it in an efficient and useable (i.e., high enough speed) manner. Broadband Internet access is the last-mile infrastructure that connects a user to the Internet. The Internet becomes more valuable as additional users are connected to it. Broadband access becomes more costly in rural areas where distances are long and density is low. The FCC has decided that the USF High-Cost Program— now called the Connect America Fund (CAF) – should support broadband infrastructure in high-cost areas. The FCC is also exploring ways to use the Lifeline fund to help more people connect to the Internet, participate in the digital economy, and experience its many benefits.

Therefore, it is totally appropriate and, more importantly, in the public interest that broadband Internet connections, regardless of technology or provider, are included in the assessment base for USF funding. This is not “taxing the Internet.” It is reforming the communication system user fee system to take into account changes in technology and future infrastructure needs. It is making the Internet more valuable by enabling new users to join and allowing it to continue to be an engine of economic growth, job creation, etc. Doing so will ensure that all those that benefit from ubiquitous, affordable broadband access to the Internet help to pay for the infrastructure investments in the highest-cost areas of our Nation that will be necessary to make that possible for all Americans. The current 16.6% USF contribution factor is not sustainable and must be reformed. By broadening the base of contributors this factor will be dramatically reduced, USF/CAF funding will be placed on a sound and sustainable basis, and all those who benefit from the supported infrastructure will be contributing on a fair and equitable basis.

²⁴ Indeed, the federal government and many states impose taxes on alcohol and tobacco products so as to reduce consumption of these substances.

²⁵ See e.g., John D. Dvorak, *Don’t Tax the Internet*, P.C. MAGAZINE (Aug. 10, 2010), <http://www.pcmag.com/article2/0,2817,2367551,00.asp>.

The FCC has all of the tools and information that it needs to reform the antiquated USF Collection Mechanism – Now is the time for action

The problems with the current USF collection mechanism have existed for some time and are well known and documented. Chart I shows the relentless upward trajectory of the assessment factor on shrinking elements of traditional telecommunications services. If the contribution methodology is not fixed soon there is the real possibility of a collapse of the USF funding system, with the serious implications for rural America and other USF beneficiaries noted earlier.

In recent years, the FCC has had several initiatives to “refresh the record” on USF contributions issues, the most recent being a *Further Notice of Proposed Rulemaking (FNPRM)* in Docket WC 06-122 released April 30, 2012. The FCC states: “Since the adoption of the current contribution system after the Telecommunications Act of 1996, the communications ecosystem has undergone extensive changes that have brought great benefits to consumers.” The FCC further notes that this evolution “has led to a series of stresses on the contribution mechanism,” including “competitive distortions because different contribution obligations may apply to similar services depending on how a service is provided.”²⁶ The Notice asks a number of questions in four specific areas:

1. Who should contribute?
2. How should contributions be assessed?
3. How could the administration of the contribution system be improved?
4. How should carriers recover their contributions to the USF from their end-user consumers?

On July 9, 2012, the FCC received comments from 84 parties reflecting a wide variety of communications interests. There was a wide variety of opinions given by the parties based upon their particular position in the ecosystem. The one thing that all parties agreed on, however, was that the current system is in need of modernization to function effectively in a broadband world.

On February 12, 2014, NARUC, representing state regulatory bodies across the United States, adopted a Resolution²⁷ calling on the FCC to:

- Complete the Docket No. 06-122 rulemaking that was initiated in 2012;
- Expand the contribution base so that all communications services, including services such as broadband that are required to be offered in order to receive federal support, contribute to the USF;
- Move forward on contribution methodology reform and ensure the fairest allocation of the contribution burden between residential and business consumers throughout the country and do so with dispatch since expanding the contribution base is a desirable option that has been set to the side for too long.

Now is the time for the FCC to make a decision. There is no absolute perfect answer to the USF contribution puzzle. There is a wrong answer, however, and that is to do nothing, or to further delay essential reforms to this important infrastructure funding process. Perhaps policymakers could borrow a best practice from the Interstate Highway experience and bring the various stakeholder groups together to help find a solution.

²⁶ Contributions FNPRM at ¶s 3 and 4.

²⁷ See National Association of Regulatory Utility Commissioners, *Resolution Supporting Reform of the Federal Universal Service Fund Contribution System* (Feb. 12, 2014), <http://naruc.org/Resolutions/Resolution%20Supporting%20Reform%20of%20the%20Federal%20Universal%20Service%20Fund%20Contribution%20System.pdf>.

As noted earlier, the perception of equity among all of those that will pay for an infrastructure funding initiative is a critical and necessary component for success. Time is of the essence, however. The promise of ubiquitous, high-speed broadband Internet access is too important an economic opportunity for our nation to squander. It would be a failure to not promptly fix the antiquated, unfair, and increasingly dysfunctional USF collection mechanism.

WTA represents over 250 rural telecommunications companies providing quality voice, data and video services in rural areas in the United States. On average, WTA members serve fewer than 3000 access lines with fewer than 500 customers per exchange. WTA's members serve some of the most rural and hard-to-serve communities in the country and are on the forefront of bringing 21st Century telecommunications services to rural America. For more information about WTA visit www.w-t-a.org.

This paper was prepared for WTA by McLean & Brown, a telecommunications consulting company specializing in universal service, intercarrier compensation and rural broadband issues. For more information about McLean & Brown visit www.mcleanbrown.com.

Appendix A - USF by Fund
(\$ Thousands)

State	High Cost		Lifeline		Schools & Libraries		Rural Health Care		Total USF	
	Rank	HC USF	Rank	LI USF	Rank	S&L USF	Rank	RHC USF	Rank	Total USF
Alabama	3	\$189,882	22	\$26,960	19	\$36,812	28	\$1,426	9	\$255,080
Alaska	4	\$181,147	29	\$18,450	16	\$42,235	1	\$36,838	6	\$278,670
American Samoa	49	\$3,204	56	\$85	54	\$1,404	48	\$21	55	\$4,714
Arizona	24	\$80,954	12	\$43,274	11	\$58,642	15	\$3,784	17	\$186,654
Arkansas	22	\$86,349	27	\$20,079	27	\$27,814	14	\$3,857	29	\$138,099
California	21	\$86,780	2	\$141,420	1	\$342,723	4	\$6,998	2	\$577,921
Colorado	28	\$75,757	40	\$5,630	28	\$24,664	9	\$4,840	32	\$110,891
Connecticut	53	\$464	32	\$12,517	36	\$17,079	50	\$8	47	\$30,068
Delaware	54	\$228	43	\$3,658	53	\$1,810	51	\$0	54	\$5,696
District of Columbia	56	\$0	41	\$5,535	41	\$8,719	52	\$0	51	\$14,254
Florida	34	\$65,341	4	\$101,373	5	\$89,269	43	\$282	8	\$256,265
Georgia	11	\$130,877	8	\$78,646	6	\$81,153	11	\$4,314	4	\$294,990
Guam	46	\$12,916	52	\$253	55	\$686	44	\$118	52	\$13,973
Hawaii	42	\$24,614	51	\$552	48	\$4,319	36	\$706	46	\$30,191
Idaho	36	\$46,061	44	\$2,411	40	\$9,342	40	\$495	41	\$58,309
Illinois	33	\$68,986	9	\$75,516	4	\$90,616	5	\$6,363	10	\$241,481
Indiana	25	\$80,872	21	\$27,566	20	\$35,970	7	\$5,299	25	\$149,707
Iowa	8	\$134,220	37	\$8,123	38	\$15,069	30	\$1,260	23	\$158,672
Kansas	6	\$158,653	33	\$11,067	32	\$21,772	38	\$642	16	\$192,134
Kentucky	10	\$130,883	20	\$27,812	18	\$38,900	27	\$1,573	15	\$199,168
Louisiana	18	\$94,624	13	\$42,433	13	\$48,299	41	\$489	19	\$185,845
Maine	41	\$25,352	39	\$7,185	42	\$8,657	6	\$5,851	45	\$47,045
Maryland	48	\$3,401	16	\$37,612	30	\$23,448	47	\$87	39	\$64,548
Massachusetts	50	\$2,074	19	\$32,561	29	\$23,694	46	\$110	40	\$58,439
Michigan	39	\$34,028	7	\$81,166	14	\$47,153	2	\$11,362	21	\$173,709
Minnesota	15	\$102,213	34	\$10,338	25	\$29,938	16	\$3,652	26	\$146,141
Mississippi	2	\$208,310	28	\$19,135	23	\$31,887	26	\$1,717	7	\$261,049
Missouri	13	\$106,537	25	\$24,765	22	\$35,437	25	\$1,719	22	\$168,458
Montana	20	\$87,762	46	\$2,092	46	\$5,119	35	\$948	35	\$95,921
Nebraska	31	\$72,934	48	\$1,495	39	\$10,640	17	\$3,642	37	\$88,711
Nevada	40	\$30,159	30	\$17,542	45	\$5,960	45	\$113	42	\$53,774
New Hampshire	47	\$9,043	45	\$2,392	52	\$2,476	22	\$2,210	50	\$16,121
New Jersey	52	\$702	18	\$33,169	12	\$56,426	53	\$0	36	\$90,297
New Mexico	26	\$77,386	31	\$14,752	24	\$30,990	13	\$3,945	31	\$127,073
New York	38	\$42,762	3	\$132,506	3	\$102,920	12	\$3,981	5	\$282,169
North Carolina	14	\$105,249	11	\$49,525	7	\$77,255	18	\$3,521	11	\$235,550
North Dakota	17	\$95,751	49	\$1,332	50	\$4,006	34	\$955	34	\$102,044
Northern Mariana Isl	51	\$1,787	54	\$200	56	\$478	49	\$9	56	\$2,474
Ohio	37	\$43,663	6	\$89,830	8	\$70,641	29	\$1,343	14	\$205,477
Oklahoma	9	\$131,927	1	\$199,185	10	\$61,016	20	\$2,930	3	\$395,058
Oregon	29	\$74,590	36	\$8,833	37	\$16,941	10	\$4,526	33	\$104,890
Pennsylvania	19	\$91,658	10	\$70,539	9	\$64,782	32	\$1,096	12	\$228,075
Puerto Rico	5	\$160,005	17	\$34,960	31	\$23,095	54	\$0	13	\$218,060
Rhode Island	55	\$30	38	\$7,222	44	\$6,678	55	\$0	53	\$13,930
South Carolina	16	\$101,968	15	\$39,615	17	\$40,598	31	\$1,127	20	\$183,308
South Dakota	30	\$73,281	50	\$928	47	\$4,574	33	\$1,002	38	\$79,785
Tennessee	32	\$71,542	14	\$39,784	15	\$45,167	39	\$532	24	\$157,025
Texas	1	\$248,154	5	\$95,010	2	\$240,658	8	\$4,907	1	\$588,729
Utah	43	\$21,952	42	\$4,537	34	\$19,187	21	\$2,842	44	\$48,518
Vermont	44	\$19,293	47	\$1,808	51	\$2,694	19	\$3,183	48	\$26,978
Virgin Islands	45	\$16,564	53	\$210	43	\$6,967	56	\$0	49	\$23,741
Virginia	23	\$81,898	26	\$23,850	21	\$35,445	24	\$1,980	27	\$143,173
Washington	27	\$77,021	23	\$25,768	26	\$29,101	42	\$301	30	\$132,191
West Virginia	12	\$111,269	35	\$9,325	33	\$20,293	23	\$2,164	28	\$143,051
Wisconsin	7	\$135,076	24	\$25,011	35	\$18,524	3	\$7,249	18	\$185,860
Wyoming	35	\$47,083	55	\$166	49	\$4,117	37	\$651	43	\$52,017
Total		\$4,165,236		\$1,797,708		\$2,204,259		\$158,968		\$8,326,171

Appendix B - USF Per-Person by Fund

State	Population	High Cost		Lifeline		Schools & Libraries		Rural Health Care		Total USF	
		Rank	Per Person	Rank	Per Person	Rank	Per Person	Rank	Per Person	Rank	Per Person
Alabama	4,779,736	15	\$39.73	21	\$5.64	19	\$7.70	32	\$0.30	15	\$53.37
Alaska	710,231	1	\$255.05	2	\$25.98	2	\$59.47	1	\$51.87	1	\$392.37
American Samoa	55,519	10	\$57.71	51	\$1.53	3	\$25.29	28	\$0.38	10	\$84.91
Arizona	6,392,017	33	\$12.66	14	\$6.77	13	\$9.17	22	\$0.59	28	\$29.20
Arkansas	2,915,918	21	\$29.61	11	\$6.89	11	\$9.54	8	\$1.32	18	\$47.36
California	37,253,956	48	\$2.33	34	\$3.80	12	\$9.20	39	\$0.19	47	\$15.51
Colorado	5,029,196	31	\$15.06	53	\$1.12	41	\$4.90	16	\$0.96	38	\$22.05
Connecticut	3,574,097	53	\$0.13	38	\$3.50	42	\$4.78	50	\$0.00	55	\$8.41
Delaware	897,934	52	\$0.25	31	\$4.07	55	\$2.02	51	\$0.00	56	\$6.34
District of Columbia	601,723	56	\$0.00	5	\$9.20	6	\$14.49	52	\$0.00	34	\$23.69
Florida	18,801,310	46	\$3.48	24	\$5.39	44	\$4.75	49	\$0.01	49	\$13.63
Georgia	9,687,653	32	\$13.51	8	\$8.12	17	\$8.38	26	\$0.45	27	\$30.45
Guam	159,358	7	\$81.05	49	\$1.59	49	\$4.30	20	\$0.74	9	\$87.68
Hawaii	1,360,301	29	\$18.09	55	\$0.41	53	\$3.18	24	\$0.52	37	\$22.19
Idaho	1,567,582	22	\$29.38	50	\$1.54	30	\$5.96	31	\$0.32	24	\$37.20
Illinois	12,830,632	44	\$5.38	20	\$5.89	23	\$7.06	25	\$0.50	41	\$18.82
Indiana	6,483,802	34	\$12.47	29	\$4.25	36	\$5.55	18	\$0.82	36	\$23.09
Iowa	3,046,355	12	\$44.06	41	\$2.67	40	\$4.95	27	\$0.41	16	\$52.09
Kansas	2,853,118	11	\$55.61	32	\$3.88	20	\$7.63	36	\$0.23	12	\$67.34
Kentucky	4,339,367	20	\$30.16	18	\$6.41	14	\$8.96	30	\$0.36	20	\$45.90
Louisiana	4,533,372	25	\$20.87	4	\$9.36	9	\$10.65	42	\$0.11	22	\$40.99
Maine	1,328,361	28	\$19.09	23	\$5.41	25	\$6.52	3	\$4.40	25	\$35.42
Maryland	5,773,552	50	\$0.59	15	\$6.51	50	\$4.06	48	\$0.02	52	\$11.18
Massachusetts	6,547,629	51	\$0.32	27	\$4.97	51	\$3.62	47	\$0.02	54	\$8.93
Michigan	9,883,640	47	\$3.44	7	\$8.21	43	\$4.77	14	\$1.15	45	\$17.58
Minnesota	5,303,925	27	\$19.27	46	\$1.95	34	\$5.64	21	\$0.69	30	\$27.55
Mississippi	2,967,297	8	\$70.20	17	\$6.45	8	\$10.75	23	\$0.58	8	\$87.98
Missouri	5,988,927	30	\$17.79	30	\$4.14	32	\$5.92	33	\$0.29	29	\$28.13
Montana	989,415	5	\$88.70	43	\$2.11	38	\$5.17	17	\$0.96	6	\$96.95
Nebraska	1,826,341	14	\$39.93	54	\$0.82	33	\$5.83	4	\$1.99	17	\$48.57
Nevada	2,700,551	37	\$11.17	16	\$6.50	54	\$2.21	46	\$0.04	39	\$19.91
New Hampshire	1,316,470	43	\$6.87	47	\$1.82	56	\$1.88	6	\$1.68	51	\$12.25
New Jersey	8,791,894	54	\$0.08	36	\$3.77	26	\$6.42	53	\$0.00	53	\$10.27
New Mexico	2,059,179	16	\$37.58	10	\$7.16	5	\$15.05	5	\$1.92	13	\$61.71
New York	19,378,102	49	\$2.21	13	\$6.84	37	\$5.31	37	\$0.21	48	\$14.56
North Carolina	9,535,483	38	\$11.04	25	\$5.19	18	\$8.10	29	\$0.37	33	\$24.70
North Dakota	672,591	3	\$142.36	44	\$1.98	31	\$5.96	7	\$1.42	3	\$151.72
Northern Mariana Isl	53,883	18	\$33.16	37	\$3.71	15	\$8.87	40	\$0.17	19	\$45.91
Ohio	11,536,504	45	\$3.78	9	\$7.79	29	\$6.12	41	\$0.12	44	\$17.81
Oklahoma	3,751,351	17	\$35.17	1	\$53.10	4	\$16.27	19	\$0.78	4	\$105.31
Oregon	3,831,074	26	\$19.47	42	\$2.31	46	\$4.42	11	\$1.18	31	\$27.38
Pennsylvania	12,702,379	42	\$7.22	22	\$5.55	39	\$5.10	43	\$0.09	42	\$17.96
Puerto Rico	3,725,789	13	\$42.95	3	\$9.38	28	\$6.20	54	\$0.00	14	\$58.53
Rhode Island	1,052,567	55	\$0.03	12	\$6.86	27	\$6.34	55	\$0.00	50	\$13.23
South Carolina	4,625,364	24	\$22.05	6	\$8.56	16	\$8.78	35	\$0.24	23	\$39.63
South Dakota	814,180	4	\$90.01	52	\$1.14	35	\$5.62	10	\$1.23	5	\$97.99
Tennessee	6,346,105	36	\$11.27	19	\$6.27	22	\$7.12	44	\$0.08	32	\$24.74
Texas	25,145,561	40	\$9.87	35	\$3.78	10	\$9.57	38	\$0.20	35	\$23.41
Utah	2,763,885	41	\$7.94	48	\$1.64	24	\$6.94	15	\$1.03	46	\$17.55
Vermont	625,741	19	\$30.83	40	\$2.89	48	\$4.31	2	\$5.09	21	\$43.11
Virgin Islands	106,405	2	\$155.67	45	\$1.97	1	\$65.48	56	\$0.00	2	\$223.12
Virginia	8,001,024	39	\$10.24	39	\$2.98	45	\$4.43	34	\$0.25	43	\$17.89
Washington	6,724,540	35	\$11.45	33	\$3.83	47	\$4.33	45	\$0.04	40	\$19.66
West Virginia	1,852,994	9	\$60.05	26	\$5.03	7	\$10.95	12	\$1.17	11	\$77.20
Wisconsin	5,686,986	23	\$23.75	28	\$4.40	52	\$3.26	9	\$1.27	26	\$32.68
Wyoming	563,626	6	\$83.54	56	\$0.29	21	\$7.30	13	\$1.16	7	\$92.29