

Rural Broadband: The Roles of the Rural Utilities Service and the Universal Service Fund

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Summary

Since the initial deployment of broadband in the late 1990s, Congress has viewed broadband infrastructure deployment as a means towards improving regional economic development, and in the long term, to create jobs. According to the National Broadband Plan, the lack of adequate broadband infrastructure is most pressing in rural America, where the costs of serving large geographical areas, coupled with low population densities, often reduce economic incentives for telecommunications providers to invest in and maintain broadband infrastructure and service.

Historically, the federal government has provided financial assistance to give telecommunications providers the capital to invest in rural telecommunications infrastructure and to maintain an adequate return on their investment. Currently, there are two ongoing federal vehicles which direct money to fund broadband in rural areas: the broadband and telecommunications programs at the Rural Utilities Service (RUS) of the U.S. Department of Agriculture, and the Universal Service Fund (USF) programs under the Federal Communications Commission (FCC).

While both the RUS and USF programs share some of the same goals (e.g., improving broadband availability and adoption in rural areas), the two programs are different with respect to their funding mechanism, scope, and emphasis. For example, RUS grants and loans are used as up-front capital to invest in broadband infrastructure, while the USF provides ongoing subsidies to keep the operation of telecommunications and broadband networks in high cost areas economically viable for providers. Another key difference is that the RUS programs are funded through annual appropriations, while USF is funded through mandatory contributions from telecommunications carriers that provide interstate service, and is not subject to the annual congressional budget process.

Both programs are at a pivotal point in the 113th Congress. The statute authorizing the Rural Broadband Loan and Loan Guarantee program was significantly modified in the 2008 farm bill, and is being addressed once more in the 2013 farm bill. Meanwhile, the USF is undergoing a major and unprecedented transition through a series of reforms being developed by the FCC, and Congress has adopted an oversight role with respect to those reforms. In shaping and monitoring the future evolution of these programs, Congress is assessing how best to leverage these programs to ensure that the goals of the National Broadband Plan—including universal broadband service by 2020—are met to the greatest extent possible.

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Introduction

Broadband deployment is increasingly seen as providing a path towards increased regional economic development and, in the long term, creating jobs.[1] According to the 2010 National Broadband Plan,[2] the lack of adequate broadband infrastructure is most pressing in rural America, where the costs of serving large geographical areas, coupled with low population densities, often reduce economic incentives for telecommunications providers to invest in and maintain broadband service. Historically, the federal government has provided assistance to rural telecommunications providers, helping them obtain capital to invest in rural telecommunications infrastructure and to maintain an adequate return on their investment. The National Broadband Plan estimated that $24 billion of further federal investment is necessary to bring all of rural America up to an adequate level of broadband service.[3]

Currently, there are two ongoing federal vehicles which direct money to fund broadband in rural areas: the broadband and telecommunications programs at the Rural Utilities Service (RUS) of the U.S. Department of Agriculture and the Universal Service Fund (USF) programs under the Federal Communications Commission (FCC). While both the RUS and USF programs share some of the same goals (e.g., improving broadband availability and adoption in rural areas), the two programs differ in their funding mechanism, scope, and emphasis.

The 113th Congress may assess how best to shape the evolution of both the RUS and USF broadband programs. The statute that authorizes the RUS broadband loan program will likely be amended by the 2013 farm bill. Meanwhile, the FCC is considering significant reforms of the USF, and Congress is currently maintaining an oversight role with respect to those reforms. In the current climate of budget deficit reduction, Congress is examining the different pieces of federal investment in broadband and determining how they can best fit together in order to reach the goal of most efficiently and effectively deploying broadband in rural America.

RUS Broadband and Telecommunications Programs

The RUS has a portfolio of telecommunications and broadband programs offering loans, loan guarantees, grants, and loan/grant combinations.[4] As seen in **Table 1**, some programs are relatively recent, while others have been operating for over 60 years. Some are specifically and exclusively designed to support broadband infrastructure deployment (e.g., Rural Broadband Loans, Community Connect grants, Broadband Initiatives Program),[5] while others (e.g.,

[1] Federal Communications Commission, *Connecting America: The National Broadband Plan*, March 17, 2010, p. 291. Also see Crandall, Robert, William Lehr, and Robert Litan, *The Effects of Broadband Deployment on Output and Employment: A Cross-sectional Analysis of U.S. Data*, June 2007, 20 pp; and Gillett, Sharon E., Massachusetts Institute of Technology, *Measuring Broadband's Economic Impact*, report prepared for the Economic Development Administration, U.S. Department of Commerce, February 28, 2006 p. 4.

[2] A copy of this plan is available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-296935A1.pdf.

[3] Federal Communications Commission, *Connecting America: The National Broadband Plan*, March 17, 2010, p. 136.

[4] For more information on RUS broadband programs, see CRS Report RL33816, *Broadband Loan and Grant Programs in the USDA's Rural Utilities Service*, by Lennard G. Kruger.

[5] The Broadband Initiatives Program (BIP) was established by P.L. 111-5, the American Recovery and Reinvestment Act (ARRA). Although funded BIP projects are ongoing, all awards were announced as of September 30, 2010, and no new funding is available through the BIP program. The ARRA also funded the Broadband Technology Opportunities (continued...)

Telecommunications Infrastructure Loans) have historically supported infrastructure for telephone voice service, but have now evolved into support for broadband-capable service provided by traditional telephone borrowers.[6] Additionally, other programs (e.g., Distance Learning and Telemedicine, Delta Health Services grants) support specific broadband-based applications.

Table 1. RUS Broadband and Telecommunications Programs

Program	Type of Assistance	Funding	Initial Year	Eligible Service Area
Rural Broadband Access Loan and Loan Guarantee Program	loans and loan guarantees	$6 million subsidy supporting an estimated $63 million loan level (FY2013)	2000	any area not within a city or town with population exceeding 20,000 or an urbanized area adjacent to a city greater than 50,000
Community Connect Grant Program	grants	$10 million (FY2013)	2002	any area in which broadband service does not exist that is not within a city or town with population exceeding 20,000 or an urbanized area adjacent to a city greater than 50,000
Broadband Initiatives Program (ARRA)	grants, loans, and loan/grant combinations	$3.5 billion (ARRA stimulus funding awarded in FY2010)	2009	any area not within a city or town with population exceeding 20,000 or an urbanized area adjacent to a city greater than 50,000
Telecommunications Infrastructure Loan Program	loans and loan guarantees	$690 million loan level (FY2013)	1949	any area not within boundaries of any city, village, or borough with population exceeding 5,000
Distance Learning and Telemedicine Program	grants, loans, and loan/grant combinations	$21 million in grants (FY2013)	1994	any area not within boundaries of any city, village, or borough with population exceeding 20,000
Delta Health Care Services Grant Program	grants	$3 million (FY2013)	2010	any Delta region area not within a city or town with population exceeding 50,000 or an urbanized area adjacent to a city greater than 50,000

Source: Rural Utilities Service, http://www.rurdev.usda.gov/RUSTelecomPrograms.html.

(...continued)

Program (BTOP) at the National Telecommunications and Information Administration (NTIA) of the Department of Commerce (DOC).

[6] Since 1995, the Rural Telephone Loan and Loan Guarantee program has required that all telephone facilities receiving financing must be capable of providing broadband service at a rate of at least 1 megabyte per second.

Issues and Criticism of RUS Broadband Programs

There are several issues and criticisms that typically surface during congressional consideration (whether oversight, funding, or reauthorization) of the RUS telecommunications and broadband programs.

Definition of "Rural"

The rural nature of an area or community served by grant and loan projects is a key characteristic of RUS telecommunications programs. One of the primary strategic goals of the USDA is to "assist rural communities to create prosperity so they are self-sustaining, repopulating, and economically thriving."[7] While many rural telecommunications providers already have deployed broadband networks, studies, surveys, and data collections continue to show that broadband access, on average, is less adequate in rural areas than it is in suburban or urban communities.[8]

The comparatively lower population density of rural areas is likely the major reason why broadband is less deployed than in more highly populated suburban and urban areas. Particularly for wireline broadband technologies—such as cable modem and DSL[9]—the greater the geographical distances among customers, the larger the cost to serve those customers. Thus, there is often less incentive for companies to invest in broadband in rural areas than, for example, in an urban area where there is more demand (more customers with perhaps higher incomes) and less cost to wire the market area.

Given the RUS emphasis on "rural" broadband, the issue becomes: what level of "rurality" is necessary for an area to be eligible for RUS broadband grants or loans? Within the RUS telecommunications portfolio, there is no standard definition of "rural," with programs such as the Rural Broadband Access Loan and Loan Guarantee program defining eligible rural areas as populations less than 20,000 (plus areas not in an urbanized area adjacent to a city of not more than 50,000), while the Telecommunications Infrastructure Loan program defines eligible areas as populations of 5,000 or less (extremely rural areas). Among all the RUS telecommunications programs, the different definitions of eligible service areas (which correspond to definitions of rurality) are presented in **Table 1**.

Shifting definitions of "rural" have generated controversy. For example, during the first round of BIP awards, a separate category called "remote areas" was created, defined as an unserved rural area at least 50 miles from the limits of a non-rural area. For last mile projects,[10] only remote

[7] USDA Strategic Plan FY2010-2015, p. 1, available at http://www.ocfo.usda.gov/usdasp/sp2010/sp2010.pdf.

[8] See for example: Federal Communications Commission, *Seventh Broadband Deployment Report*, FCC 11-78, released May 20, 2011, p. 2, 4, available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2011/db0520/FCC-11-78A1.pdf; U.S. Department of Commerce, National Telecommunications and Information Administration, *Digital Nation: Expanding Internet Usage*, February 2011, p. 16, available at http://www.ntia.doc.gov/reports/2011/NTIA_Internet_Use_Report_February_2011.pdf; NTIA, National Broadband Map, *Broadband Statistics Report: Broadband Availability in Urban vs. Rural Areas*, p. 7, available at http://www.broadbandmap.gov/download/reports/national-broadband-map-broadband-availability-in-rural-vs-urban-areas.pdf; and Smith, Aaron, Pew Internet & American Life Project, *Home Broadband 2010*, August 11, 2010, p. 8, available at http://www.pewinternet.org/~/media//Files/Reports/2010/Home%20broadband%202010.pdf.

[9] Broadband over legacy copper wire deployed by the telephone companies.

[10] Last mile project means any infrastructure project the predominant purpose of which is to provide broadband service to end users or end-user devices.

areas were eligible for BIP grants (as opposed to loans or grant/loan combinations). The remote area category was eliminated in the second round, due to criticism from many Members of Congress who argued that the remote rural definition excluded many areas of the country (primarily in the eastern half of the United States).

The definition of "rural" has also generated much controversy over the Rural Broadband Loan and Loan Guarantee program, particularly as Congress continues to refine the program through periodic consideration of the farm bill.[11] Over the life of the broadband loan program, the definition of a rural area eligible for the program has been changed three separate times by Congress.[12] Ultimately, the definition of what constitutes a rural community is always a difficult issue for congressional policymakers in determining how to target rural communities for broadband assistance. On the one hand, the narrower the definition the greater the possibility that deserving communities may be excluded. On the other hand, the broader the definition used, the greater the possibility that communities not typically considered "rural" or "underserved" may be eligible for financial assistance.

During the 113th Congress, the 2013 farm bill—which would amend the statute authorizing the rural broadband loan and loan guarantee program—explicitly addresses the rural definition issue. For example, S. 954, the Senate-passed version of the farm bill (the Agriculture Reform, Food, and Jobs Act of 2013), would adopt a uniform definition of "rural area" for *all* USDA rural development programs, including the broadband program. Under the Senate bill, a rural area would be defined as any area that is not a city or town with a population greater than 50,000, and that is not an urbanized area contiguous and adjacent to a city or town with a population over 50,000. Because the current definition of a rural area eligible for broadband loans is towns with populations under 20,000, this new definition would increase the number of larger communities eligible for broadband assistance.

Existing Providers

Because rural and sparsely populated areas typically offer providers less financial incentive to build broadband networks, it is generally the case that the more rural the area, the fewer the likely number of existing broadband providers. By contrast, urban and suburban areas are more likely to have a greater number of existing broadband providers offering service.

One of the ongoing concerns expressed by some Members of Congress is the extent to which RUS grants and loans have been awarded to projects serving areas that already have existing providers offering broadband service.[13] The issue of providing federal funding to areas and communities with existing providers is controversial, and has been previously raised with respect to the RUS Rural Broadband Access Loan and Loan Guarantee Program[14] and the Broadband

[11] See U.S. Department of Agriculture, Office of Inspector General, Southwest Region, *Audit Report: Rural Utilities Service Broadband Grant and Loan Programs*, Audit Report 09601-4-Te, September 2005; and U.S. Department of Agriculture, Office of Inspector General, Southwest Region, *Audit Report Rural Utilities Service Broadband Loan and Loan Guarantee Program*, Report No. 09601-8-Te, March 2009.

[12] Farm Security and Rural Investment Act (P.L. 107-171), FY2004 Consolidated Appropriations Act (P.L. 108-199), and Food, Conservation, and Energy Act of 2008 (P.L. 110-246). For a discussion of rural definition issues in the Rural Broadband Access Loan and Loan Guarantee program, see CRS Report RL33816, *Broadband Loan and Grant Programs in the USDA's Rural Utilities Service*, by Lennard G. Kruger.

[13] Grant Gross, "US Lawmakers Question Use of Broadband Stimulus Funds," *PC World*, March 4, 2010.

[14] See CRS Report RL33816, *Broadband Loan and Grant Programs in the USDA's Rural Utilities Service*, by Lennard (continued...)

Initiatives Program.[15] Broadband awards to areas with preexisting service—that is, areas where existing companies already provide some level of broadband—have sparked controversy because award recipients might compete to some extent with other companies already providing broadband service. On the one hand, one could argue that the federal government should not be subsidizing competitors for broadband service, particularly in sparsely populated rural markets which may be able only to support one provider. Furthermore, providing grants and loans for projects serving communities with preexisting broadband service may divert assistance from unserved areas that are most in need.

On the other hand, many suburban and urban areas currently receive the benefits of competition among broadband providers—competition which can potentially drive down prices while improving service and performance. It is therefore appropriate, others have argued, that rural areas also receive the benefits of competition, which in some areas may not be possible without federal financial assistance. It is also argued that it may not be economically feasible for applicants to serve sparsely populated unserved communities unless they are permitted to also serve more lucrative areas which may already have existing providers.

The existing provider issue was examined during congressional consideration of the 2012 farm bill. The 2008 farm bill (which is the current statute in force) set specific restrictions on the broadband loan eligibility of project areas with existing providers. However, RUS did not issue a rule reflecting those changes until March 2011. Organizations representing the cable industry have argued that existing provider restrictions should be strengthened to focus the loan program more exclusively on unserved areas with no existing providers. By contrast, organizations representing rural telecommunications providers (primarily the traditional rural telephone companies) counter that no changes should be made to the existing provider restrictions, given that RUS has had limited opportunity to award new loans under the new 2008 farm bill rules. In the 2013 farm bill, S. 954, as passed by the Senate, would change the existing provider restrictions currently in statute.[16] In the House, a hearing held on April 25, 2012, by the House Subcommittee on Rural Development, Research, Biotechnology, and Foreign Agriculture, Committee on Agriculture, debated whether or not the rural broadband loan program should be modified to prohibit loans to projects serving areas with incumbent broadband service providers.[17]

Loans vs. Grants

The ARRA broadband stimulus program—which is no longer offering awards—offered grants, loans, and grant/loan combinations. The Rural Broadband Access Loan and Loan Guarantee Program does not offer grants. Not surprisingly, those seeking federal broadband assistance typically prefer grants, given that loans must be paid back with interest. On the other hand, from a federal budgetary perspective, loans are more attractive than grants, not only because loans are paid back, but because loan programs are subsidized by a much smaller appropriation (called a

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[15] See CRS Report R41775, *Background and Issues for Congressional Oversight of ARRA Broadband Awards*, by Lennard G. Kruger.

[16] For a description of these changes, see CRS Report RL33816, *Broadband Loan and Grant Programs in the USDA's Rural Utilities Service*, by Lennard G. Kruger.

[17] Hearing testimony is available at http://agriculture.house.gov/hearings/hearingDetails.aspx?NewsID=1567.

loan subsidy). Thus, for example, the Rural Broadband Access Loan and Loan Guarantee Program was appropriated a loan subsidy of $6 million in FY2013, which is estimated to support a loan level of approximately $64 million. The Telecommunications Infrastructure Loan program, which has been issuing loans since 1949, is funded at a loan level of $690 million, yet typically requires no loan subsidy or appropriation.

The issue of loans versus grants became part of the debate over the farm bill and the reauthorization of the Rural Broadband Access Loan and Loan Guarantee Program. Senate-passed S. 954 would add a new grant program to the rural broadband program, and would raise the authorization level from $25 million to $50 million per year. The Senate bill does not specify how much of the authorization would be targeted to grants versus loans. Given that financing loans costs the federal government significantly less than financing grants, the proportion of grants to loans would likely be of interest to the Appropriations Committees, which remain under pressure to reduce overall federal discretionary spending. In recent years, the Appropriations Committees in the House and Senate have approved lower levels for the RUS broadband loan program than the authorization level.

Universal Service

The Universal Service Concept: Background

Since its creation in 1934 the Federal Communications Commission (FCC, or Commission) has been tasked with "mak[ing] available, so far as possible, to all the people of the United States ... a rapid, efficient, Nation-wide, and world-wide wire and radio communications service with adequate facilities at reasonable charges."[18] This mandate led to the development of what has come to be known as the universal service concept.

The universal service concept, as originally designed, called for the establishment of policies to ensure that telecommunications services are available to all Americans, including those in rural, insular, and high cost areas, by ensuring that rates remain affordable. During the 20th century, government and industry efforts to expand telephone service led to the development of a complex system of cross subsidies to expand the network and address universal service goals. For example, profits from more densely populated, lower cost urbanized areas helped to subsidize wiring and operation costs for the less populous, higher cost rural areas.

With the advent of competition and the breakup of the Bell System, the complex system of cross subsidies that evolved to support universal service goals was no longer tenable. The Telecommunications Act of 1996 (P.L. 104-104; 47 U.S.C., 1996 act) codified the long-standing commitment by U.S. policymakers to ensure universal service in the provision of telecommunications services (§254), and the FCC established a universal service fund (USF or Fund) to meet the objectives and principles contained in the act. The 1996 act enumerated specific universal service principles including that "access to advanced telecommunications and information services should be provided to all regions of the Nation" (§254 [b] [2]) and "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,

[18] Communications Act of 1934, as amended, Title I §1[47 U.S.C. 151].

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" (§254 [b] [3]). The concept of universal service was also expanded to include, among other principles, that elementary and secondary schools and classrooms, libraries, and rural health care providers have access to telecommunications services for specific purposes at discounted rates (§254[b][6] and 254[h]).

One of the major policy debates surrounding universal service in the last decade was whether access to advanced telecommunications services (i.e., broadband) should be incorporated into universal service objectives. With the growing importance and acceptance of broadband and Internet access, gaps in access to such services, particularly in rural areas, generated concern. A growing number of policymakers felt that the USF should play a role in helping to alleviate this availability gap. They pointed to the provisions, cited above, contained in the Universal Service section of the 1996 act to support their position. However, with the exception of funding for schools and libraries and rural health care providers, the USF was not designed to directly support broadband.

Provisions contained in the American Recovery and Reinvestment Act of 2009 (ARRA) called for the FCC to develop, and submit to Congress, a national broadband plan (NBP) to ensure that every American has "access to broadband capability."[19] This plan, *Connecting America: The National Broadband Plan*, submitted to Congress on March 16, 2010, called for the USF to play a major role in achieving this goal.

The Federal Universal Service Fund—A Fund in Transition

The federal Universal Service Fund (USF or Fund) was established in 1997 to meet the specific objectives and principles contained in the 1996 act. The USF is administered by the Universal Service Administrative Company (USAC), an independent not-for-profit organization, under the direction of the FCC. The FCC, through the USF, provides universal service support through a number of direct mechanisms that target both providers of and subscribers to telecommunications services.[20] The USF was designed to provide subsidies for voice telecommunications services for eligible high-cost (typically rural or insular) telecommunications carriers (High Cost Program) and economically needy individuals (Low Income Program); access for telecommunications services and broadband access for schools and libraries (Schools and Libraries Program); and access to telecommunications, advanced telecommunications, and information services for public and non-profit rural health care providers (Rural Health Care Program). The USF disbursed $8.7 billion in 2012 with all 50 states, the District of Columbia, and all territories receiving some benefit.[21]

The FCC, in an October 2011 decision, adopted an order (USF Order, or Order) that calls for the USF to be transformed, in stages, over a multi-year period, from a mechanism to support voice telephone service to one that supports the deployment, adoption, and utilization of both fixed and

[19] American Recovery and Reinvestment Act of 2009, P.L. 111-5, §6001 (k)(2)(D).

[20] Many states participate in or have programs that mirror FCC universal service mechanisms to help promote universal service goals within their individual states.

[21] *2012 USAC Annual Report*, p.47. Available at http://www.usac.org/about/governance/annual-reports/2012/index.html.

mobile broadband. More specifically, the High Cost Program is to be phased out and a new fund, the Connect America Fund (CAF), which includes the targeted Mobility Fund and new Remote Areas Fund, is to be created to replace it; and the Low Income, Schools and Libraries, and Rural Health Care programs are to be modified and given wider responsibilities.[22]

High Cost Program

High-cost support, provided through the High Cost Program, is an example of provider-targeted support. Under the High Cost Program, eligible telecommunications carriers, usually those serving rural, insular, and other high-cost areas, are able to obtain funds to help offset the higher-than-average costs of providing telephone service. This mechanism, which has always been the largest USF program based on disbursements, has been particularly important to rural America, where the lack of subscriber density leads to significantly higher costs. The goal of the USF Order is to restructure and transition the High Cost Program from one that primarily supports voice communications to one that supports a broadband platform that enables multiple applications, including voice. Although some carriers that received high-cost funding over the years have used high-cost funds to deploy broadband capable infrastructure, there was no requirement that recipients of high-cost funding provide any households in their service areas with broadband.

The Order requires that the High Cost Program be phased out and replaced in stages, to directly support high-capacity broadband networks (fixed and mobile) through a newly created Connect America Fund which includes the targeted components Mobility Fund and Remote Areas Fund. The "identical support rule" is phased out. For the first time universal service support provided to carriers serving high-cost areas (which is defined to include all current high-cost support mechanisms as well as the Connect America Fund) is subject to a budget; the budget is frozen at 2011 levels at $4.5 billion (plus administrative costs) per year for the next six years (2012-2017), subject to FCC review.[23]

Connect America Fund

The Order created the Connect America Fund to support the provision of affordable voice and broadband services, both fixed and mobile, of at least 4 Mbps actual download speed and 1 Mbps actual upload speed. The CAF will eventually replace all the existing support mechanisms in the High Cost Program for eligible carriers. The path to this transition differs depending on whether a provider is a price cap carrier (i.e., a company whose interstate rates are subject to the price cap form of regulation) or a rate-of-return carrier (a company whose interstate rates are subject to rate-of-return regulation).[24]

Price Cap Carriers. Price cap incumbent local exchange carriers,[25] which tend to be the large and mid-sized carriers, will transition to the CAF in two phases. Under Phase I, which commenced on

[22] *In the Matter of Connect America Fund, et al*., WC Docket No. 10-90 et al., Report and Order and Further Notice of Proposed Rulemaking, FCC 11-161, adopted October 27, 2011, and released November 18, 2011. Available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-11-161A1.pdf.

[23] *In the Matter of Connect America Fund, et. al*., WC Docket No. 10-90 et al.

[24] For a more detailed explanation of price cap carrier and rate-of-return carrier see footnotes 25 and 32, below.

[25] Price-cap carriers are incumbent exchange carriers that may only raise interstate rates based on a formula, defined by the FCC, that caps the price level that can be charged to subscribers. Rate-of-return companies that are affiliated with (continued...)

January 1, 2012, legacy high-cost funding is frozen at December 31, 2011, levels (estimated at no more than $ 1.8 billion annually) for price cap carriers and is required to be used to achieve universal availability of both voice and broadband. Frozen high-cost support will equal the amount of support each carrier received in 2011 in a given study area (i.e., the defined geographic service area of an incumbent local exchange carrier's telephone operations). An additional $300 million in "incremental support" to stimulate broadband deployment in unserved areas is also established. This Phase I incremental support is available to those price-cap carriers that choose to deploy fixed broadband to areas not currently served, or targeted to be served, by a fixed broadband provider within their service territory. Access to Phase I incremental support is dependent on meeting specific criteria and build-out requirements, and is offered to jump-start the deployment of broadband to unserved areas within price-cap carrier service areas. Any price-cap carrier electing to receive Phase I incremental support will receive $775 in incremental support for each unserved location it provides broadband with actual speeds of at least 4 Mbps actual download speed and 1 Mbps of actual upload speed.[26] Once the funds are accepted, carriers must meet deployment schedules to no fewer than two-thirds of the required locations within two years and complete all deployments within three years. Of the $300 million made available for Phase I incremental support, only $115 million was taken with $185 million remaining unclaimed.[27] A second round of Phase I support will be offered in 2013.[28] The FCC, in May 2013, released a Report and Order detailing the rules for the second round of Phase I incremental support.[29] Provisions call for a disbursement of $485 million ($300 million plus the unclaimed $185 million from the previous round of incremental support) and expands eligibility to cover areas that are underserved as well as unserved.[30] Support for unserved areas remains at $775 per location and support for underserved areas is set at $550 per location. The FCC anticipates that this will be the last "incremental support" round before the transition to Phase II Price Cap annual support and any unused funds will be given to the Phase II Fund.

Under CAF Phase II Price Cap annual funds (estimated at no more than $1.8 billion annually) will be distributed through an FCC-developed cost model and through competitive bidding (e.g., reverse auctions)[31] for a period ending year-end 2017. CAF support will be available only in areas

(...continued)

holding companies for which the majority of access lines are regulated under price caps will, for the purposes of CAF Phase I, be treated as price-cap carriers.

[26] The FCC will calculate how much incremental support a carrier is eligible to receive, and the carrier may choose to accept all, some, or none of that support. For example, if a carrier is projected to receive $7,750,000 and it accepts the full amount, it will be required to deploy broadband to at least 10,000 unserved locations within its service territory; if it accepts half ($3,875,000) it will be required to deploy broadband to 5,000 locations. Unused incremental support may be used by the FCC, pursuant to its statutory authority, to advance broadband objectives. (USF Order para.138)

[27] *In the Matter of Connect America Fund*, Further Notice of Proposed rulemaking, WC Docket No. 10-90. Released November 19, 2012. Available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db1119/FCC-12-138A1.pdf.

[28] Under FCC rules, a second round of Phase I support will be offered since Connect America Phase II Price Cap support was not implemented as of January 1, 2013.

[29] In the Matter of Connect America Fund, WC Docket No. 10-90. Released May 22, 2013. Available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2013/db0522/FCC-13-73A1.pdf.

[30] Unserved areas are defined as those where access is only available at speeds below 768 kilobits per second (kpbs) downstream/200 kpbs upstream, which according to the FCC covers areas that have "only dial-up Internet access." Underserved areas include areas that have service available at speeds faster than dial-up but slower than 3 megabits per second downstream/768 kbps upstream.

[31] Under a reverse auction the provider that submits the lowest bid, all else equal, to serve a designated geographic area would be awarded the funds.

where a federal subsidy is needed to ensure the build-out and continued operation of broadband networks. By the end of the third year, carriers that accept support must offer broadband speeds of at least 4 Mbps download speed and 1Mbps of upload speed. In addition, usage capacity must be reasonably comparable to urban residential terrestrial fixed broadband to at least 85% of their high-cost locations and to all supported locations by the end of the fifth year (2017). The incumbent carrier is given the right of first refusal, until the end-of- 2017, to receive the model-derived support, after which a shift to competitive bidding will be implemented. If an incumbent carrier declines Phase II funding the FCC will implement a competitive bidding process. CAF Phase II price cap is not expected to be implemented until sometime in 2014.

Rate-of-Return Carriers. Rate-of-return carriers,[32] which tend to be smaller carriers that solely provide service in rural areas, will continue to receive support, with some modifications, from current support mechanisms pending full transition to the CAF (through 2017). During this transition, rate-of-return carriers' legacy high-cost support is frozen at December 31, 2011, levels (estimated at no more than $2 billion annually). Unlike in the case of price-cap carriers, no additional "incremental support" is provided specifically targeted for broadband deployment in unserved areas. Modifications are made to the operations of the High Cost Program, as they impact rate-of-return carriers, during this transition period to improve "the efficiency and effectiveness" of USF support.[33] For example, the Order phases out support over three years in study areas that overlap completely with an unsubsidized fixed, terrestrial broadband/voice competitor, and gradually phases down over three years (commencing July 1, 2012) per-line support to a cap of $250/per month ($3,000 annually).

Rate-of-return carriers that continue to receive legacy support or begin accepting CAF support are given more flexibility than price-cap carriers when deploying broadband. Rate-of-return carriers are required to offer actual broadband service of at least 4 Mbps download speed and 1 Mbps of upload speed, with usage capacity reasonably comparable to urban residential terrestrial fixed broadband, **but only upon their customers' reasonable request and within a reasonable amount of time**. Furthermore, rate-of-return carriers are not, at this time, subject to specific build-out requirements or increased speed requirements and will not necessarily be required to build out and serve the most expensive locations within their service territories. Many of the details and mechanics of how the transition of rate-of-return carriers from legacy high-cost support to the CAF have yet to be determined. These details will be announced pending the completion of an extensive Further Notice of Proposed Rulemaking issued as part of the USF Order.[34]

Mobility Fund

The CAF Mobility Fund (MF) is a new fund created within the Connect America Fund to provide targeted funding to wireless providers, to support the deployment of 4G (fourth generation) wireless networks. Recipients of funds will be subject to public interest obligations. Phase I provides $300 million in one-time support to provide wireless broadband in unserved areas (excluding areas already targeted for support) and was awarded through a reverse auction. The

[32] Rate-of-return carriers are incumbent local exchange carriers that are allowed to earn a specific percentage of net profit (rate-of-return), currently set at 11.25 %, on their interstate services. The FCC sets the rate and defines the rate base upon which the carrier is allowed to earn a return.

[33] USF Order para. 194.

[34] USF Order para. 1031.

auction (auction 901), which was held on September 27, 2012, resulted in awards to 33 bidders with new deployment in 31 states and one territory covering 83,000 road miles.[35] Winners will be required to deploy 4G service within three years, or 3G service within two years and make their networks available to others for roaming. The FCC is currently in the process of authorizing winning applications. A separate and complementary one-time Tribal Mobility Fund Phase I was also established to award up to $50 million in additional funds to Tribal Lands. The Tribal Mobility Fund Phase I auction (number 902) is anticipated to be held in October 2013 and will be used to support deployment of mobile voice and broadband to tribal areas lacking 3G or better service.

Phase II of the Mobility Fund will provide up to $500 million per year in ongoing support to expand and sustain mobile voice and broadband services in areas where service would not be available absent federal support. Funding of $100 million per year, within the $500 million budget, will be set aside for ongoing support for Tribal Lands. The FCC sought further comment on specifics relating to the implementation of the Phase II of the Mobility Fund with comment and reply comment dates now closed. It is anticipated that the auction will be held in the third quarter of 2013 with support to commence in 2014.

Remote Areas Fund

The Order creates a new CAF Remote Areas Fund to provide support in the most remote high-cost areas representing less than 1% of households. The budget for this Fund is set at a minimum of $100 million per year. While open to all technologies, it is anticipated that alternative technology platforms, such as satellite and unlicensed wireless services, will be among the major providers participating in this Fund. The FCC sought additional comment related to its implementation with operation anticipated in 2014.

Identical Support Rule

The identical support rule requires that competitive eligible telecommunications carriers (CETCs), typically (but not exclusively) wireless carriers, be given the same per-line level of high-cost support as incumbent local telecommunications carriers, typically wireline carriers, serving the same area. This rule, although not designed specifically to support mobility, in 2010 distributed an estimated $1.2 billion of high-cost support, largely to wireless carriers providing mobile services in areas that may already have such services. New support mechanisms, adopted in the USF Order (CAF Mobility Fund), are designed specifically for mobility to better target unserved areas and, according to the FCC, make the identical support rule no longer necessary or in the public interest.[36] Therefore, effective January 1, 2012, the rule was eliminated. For those carriers currently receiving such support, funding levels are frozen at year-end 2011 levels (or an amount equal to $3,000 times the number of lines reported as of year-end 2011, whichever is lower) for six months and then phased out. This phase-out will occur, with some limited exceptions, in 20% yearly intervals over a five-year period commencing on July 1, 2012; all identical cost support will be eliminated as of July 1, 2016. Wireless carriers will have access to

[35] This auction was designated as Auction 901. For details on the procedures, terms, and conditions governing this auction, the list of winners, and the post-auction application process, see *Mobility Fund Phase I Auction Closes Winning Bidders Announced for Auction 901, DA* 12-1566. Available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db1003/DA-12-1566A1.pdf.

[36] USF Order at para. 502.

support from the Mobility Fund as well as this phased-down legacy support. The phase-down of identical support funding will stop if the Mobility Fund Phase II and Mobility Fund Phase II for Tribal Lands are not operational by June 30, 2014.

Waiver Process

The Order establishes a waiver process to be used by any carrier that can clearly demonstrate that, absent exemption from some or all of the reforms, its funding level would put consumers at risk of losing voice service, where there is no terrestrial alternative and in cases where it can be demonstrated that "consumers ... face a significant risk of losing access to a broadband-capable network that provides both voice as well broadband, at reasonably comparable rates, in areas where there are no alternative providers of voice or broadband."[37] Consideration will also be given to whether specific reforms would result in default on existing loans and/or insolvency. This process entails the provision of detailed financial and market-specific data submitted for a rigorous case-by-case review. Waivers are not anticipated to be granted routinely. The Order also provides for prioritized review of waiver requests filed by providers serving Tribal Lands and insular areas (e.g., Alaska, island territories), and requires that review of such petitions be completed within 45 days.

Low Income Program

In the mid-1980s, FCC universal service policies were expanded to target low-income subscribers. Two income-based programs, Lifeline and Link Up, were established to assist economically needy individuals. The Link Up program, established in 1987, assists eligible low-income subscribers to pay the costs associated with the initiation of telephone service, and the Lifeline program, established in 1984, assists eligible low-income subscribers to pay the recurring monthly service charges incurred by telephone subscribers.[38] Discounts are eligible for one connection, either wired or wireless, per household. The expansion of the USF to directly target low-income individuals is of particular significance to those in rural areas. According to the United States Department of Agriculture (USDA), the nonmetro poverty rate was 17.0 % in 2011 and has remained consistently higher than the metro poverty rate over time.[39]

An FCC-conducted broadband consumer survey found that 36% of non-adopters of broadband cited a financial reason as the main reason they do not have broadband service at home.[40] To address this barrier, the FCC adopted an order[41] on January 31, 2012, to modify the goals and

[37] "Connect America Fund: A National Broadband Plan for Our Future," *Federal Register*, Vol.78, No. 12, January 17, 2013, pp.3837-3843.

[38] Support is not given directly to the subscriber but to their designated telecommunications service provider, who in turn charges these subscribers lower rates, or in the case of some wireless options, no charge for a the basic package. For further information on the Federal lifeline program see CRS Report R42846, *Lifeline Telephone Program: Frequently Asked Questions*, by Angele A. Gilroy and Mark Gurevitz.

[39] *Rural America At A Glance*, 2012 Edition. United States Department of Agriculture, Economic Research Service. Economic Brief Number 21, December 2012. Available at http://www.ers.usda.gov/media/965908/eb-21_single_pages.pdf.

[40] NBP, Chapter 9, *Adoption and Utilization*, 9.1, Understanding Broadband Adoption.

[41] Lifeline and Link Up Reform and Modernization, Advancing Broadband Availability Through Digital Literacy Training (Final rule). *Federal Register*, Vol. 77, No. 42. March 2, 2012, p. 12952. Also see Lifeline and Link Up Reform and Modernization, Advancing Broadband Availability Through Digital Literacy Training (Proposed rule). *Federal Register*, Vol. 77, No. 42. March 2, 2012, p. 12784.

operations of the Low Income Program. The Link Up program is eliminated on non-Tribal Lands, but the role of the Lifeline Program is expanded to increase broadband adoption levels for low-income households; a $9.25 flat per-line monthly reimbursement rate is established on an interim basis;[42] and safeguards to combat waste, fraud, and abuse are also established.[43] Actions pertinent to broadband include those which modernize the Lifeline Program as a vehicle to ensure the availability of broadband for all low-income Americans. This is to be achieved by allowing Lifeline support for bundled service plans that combine voice and broadband and establishing a Broadband Adoption Pilot Program to explore how to best use the Lifeline Program to increase broadband adoption among Lifeline eligible subscribers.[44] In a December 19, 2012, decision the FCC selected 14 projects to participate in the Lifeline pilot program. The projects cover rural, suburban, and urban areas in 21 states and Puerto Rico. The FCC authorized approximately $13.8 million in funding, which comes from savings resulting from Low Income Program reforms. The Pilot Program will run for 18 months, beginning on February 1, 2013.[45]

Schools and Libraries (E-Rate) Program

Under universal service provisions contained in the 1996 act, elementary and secondary schools and classrooms, and libraries, are designated as beneficiaries of universal service discounts. Universal service principles detailed in Section 254(b)(6) state that "Elementary and secondary schools and classrooms ... and libraries should have access to advanced telecommunications services." The act further requires in Section 254(h)(1)(B) that services within the definition of universal service be provided to elementary and secondary schools and libraries for education purposes at discounts, that is at "rates less than the amounts charged for similar services to other parties."

The FCC established the Schools and Libraries Division within the Universal Service Administrative Company (USAC) to administer the schools and libraries or "E (education)-Rate" program to comply with these provisions. The E-Rate Program supports connectivity, and funding is available under four categories of services: telecommunications and dedicated services; internal connections (e.g., wiring, routers, and servers); Internet access; and basic maintenance of internal connections, with the first category receiving funding priority. The applicant is responsible for providing additional resources such as end-user equipment (e.g., computers, telephones), software, and training. Under this program, which became effective January 1, 1998, eligible schools and libraries receive discounts ranging from 20% to 90% for eligible services depending on the poverty level of the school's (or school district's) population and its location in a high-cost telecommunications area (urban/rural status).[46] Eligible schools, school districts, and libraries

[42] Additional support of up to $25 per month is available to providers of Lifeline service to a qualifying consumer residing on Tribal lands.

[43] These actions include creating a National Lifeline Accountability Database to prevent eligible subscribers from receiving duplicative Lifeline-supported services, creating eligibility databases, and eliminating Link Up support except for recipients on tribal lands.

[44] Selection criteria and additional details are contained in Public Notice DA 12-*683 Wireline Competition Bureau Announces Application Procedures and Deadline for Applications to Participate in the Broadband Adoption Lifeline Pilot Program*, released April 30, 2012, available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0430/DA-12-683A1.pdf.

[45] For additional information on this decision, including a listing and summary of the projects selected, see *In the Matter of Lifeline and Link Up Reform and Modernization,* WC Docket No. 11-42, adopted December 19, 2012. Available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db1219/DA-12-2045A1.pdf.

[46] The primary measure for determining support discounts is the percentage of students eligible for free or reduced (continued...)

may apply on an individual or a consortium basis. The FCC established a yearly ceiling, or cap, of $2.25 billion, adjusted for inflation prospectively, beginning with funding year 2010, for this program.[47] Since its inception this program has been over-subscribed, leaving requests by otherwise qualified applicants unfulfilled.

Areas that do not have ready access to broadband are likely to depend on anchor institutions, such as schools and libraries, to meet growing broadband needs. The FCC has acknowledged the importance of anchor institutions in achieving broadband access goals, and has taken steps to upgrade the E-Rate Program by, among other actions, permitting schools to allow community use of E-Rate funded services outside of school hours; supporting eligible services to the residential portion of schools that serve students in special circumstances (e.g., schools on tribal lands); and committing $9 million to a pilot program, "Learning On-The-Go," to support off-campus connectivity in 20 schools and libraries, for K-12 students and library patrons, for portable (wireless) learning devices outside of regular school or library hours.[48]

Rural Health Care Program

Section 254(h) of the 1996 act requires that public and non-profit rural health care providers have access to telecommunications services necessary for the provision of health care services at rates comparable to those paid for similar services in urban areas. Subsection 254(h)(1) further specifies that "to the extent technically feasible and economically reasonable," health care providers should have access to advanced telecommunications and information services. The FCC established the Rural Health Care Division (RHCD) within the USAC to administer the universal support program to comply with these provisions.

Under FCC-established rules only public or non-profit health care providers are eligible to receive funding. Eligible health care providers, with the exception of those requesting only access to the Internet, must also be located in a rural area.[49] Like the Schools and Libraries program, this support program went into effect on January 1, 1998, and a funding ceiling, or cap, was established, in this case at $400 million annually. The primary use of the funding is to provide reduced rates for telecommunications and information services (e.g., transmission of data, images, or interactive video) necessary for the provision of health care to either qualified individual health care providers or consortia. Health care providers can use funding to save on service they already have, to upgrade current services, or to install new services. Equipment

(...continued)

lunches under the National School Lunch Program. However, calculation of the proper discount is also dependent on location. Every school or library in the United States is located in a rural or an urban area based on Metropolitan Statistical Area (MSA) data. Applicants in rural areas are given an advantage when calculating the percentage discount.

[47] In a September 23, 2010, order modifying the E-Rate Program, the FCC included among its modifications the indexing of the $2.25 billion cap of the program to account for inflation starting with funding year 2010 of the program; during periods of deflation the funding cap will remain at the level from the previous funding year. *In the Matter of Schools and Libraries Universal Service Support Mechanism; A National Broadband Plan for Our Future*, CC Docket No. 02-6; GN Docket No. 09-51 (paras. 34-40). Available at http://hraunfoss.fcc.gov/edocs-public/attachmatch/FCC-10-175A1.pdf.

[48] *In the Matter of Schools and Libraries Universal Service Support Mechanism; A National Broadband Plan for Our Future.* Available at http://hraunfoss.fcc.gov/edocs-public/attachmatch/FCC-10-175A1.pdf.

[49] Any health care provider that does not have toll-free access to the Internet can receive support. Support is available for limited long distance charges for accessing the Internet. This has become an increasingly rare occurrence, however, and the last time such support was given was in 2001.

charges are not eligible for support. The telecommunications program was established in 1997 to ensure that rural health care providers pay no more than their urban counterparts for their telecommunications needs when providing health care services. The Internet access program, which was established in 2003, provides a 50% discount on the cost of monthly Internet access in states that are entirely rural[50] and a 25% discount for all other rural health care providers. Only the monthly charge for access is eligible for support. These two programs are collectively known as the "Primary Program."[51]

The FCC, in 2007, established a "Rural Health Care Pilot Program" to help public and non-profit health care providers build state- and region-wide broadband networks dedicated to the provision of health care services. The Pilot Program funds up to 85% of the eligible costs of broadband infrastructure deployment of telehealth networks that connect rural and urban health care providers within a state or region. The Pilot is closed to new projects and participants will transition to the newly created Healthcare Connect Fund.

The Healthcare Connect Fund, which was created by the FCC in a December 12, 2012, order, was established to expand access to broadband, particularly in rural areas, for eligible public or not-for-profit health care providers.[52] The Healthcare Connect Fund, will absorb the Internet Access Program (which is currently part of the Primary Program), and replace the Rural Health Care Pilot Program with a permanent program. The Healthcare Connect Fund will encourage consortia between smaller rural health care providers and urban medical centers, but consortia must remain majority rural. The Fund will provide a 65% discount on broadband services, equipment, and connections with health care providers required to contribute the balance (35%). Upfront payments for the Healthcare Connect Fund is $150 million annually. It is anticipated that the FCC will begin accepting applications in late summer 2013.

The FCC also established, as part of the Healthcare Connect Fund, a Skilled Nursing Facilities Pilot Program to assess how to support broadband connections for skilled nursing facilities. The pilot, which is scheduled for a 2014 implementation, will give preference to facilities in rural areas and will receive funding of up to $50 million total over a three-year period.[53]

Policy Issues

Table 2, below, provides a summary of the restructured USF program. The decision by the FCC to incorporate broadband and mobility mandates into the universal service concept, and the subsequent restructuring of the USF to accommodate this decision, will have a major impact on consumers and providers of telecommunications and broadband services. As the United States moves towards this transition, numerous policy issues and concerns have surfaced. Included among the issues confronting policy makers are how to define success; who should pay to support this mandate; how the nation should address the rural/rural divide; and how the nation should

[50] An "entirely rural" state is a state in which every county meets the FCC's definition of rural. In reality no state meets the "entirely rural" definition, but the U.S. Virgin Islands, Guam, American Samoa, and Commonwealth of Northern Mariana Islands do.

[51] The Internet Access Program, which is currently part of the "Primary Program," will end June 30, 2014 and all participants will transition to the newly created Healthcare Connect Fund.

[52] *In the Matter of Rural Health Care Support Mechanism*, WC Docket No. 02-60, Adopted December 12, 2012. Available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-12-150A1.pdf.

[53] *In the Matter of Rural Health Care Support Mechanism*, paragraphs 345-350.

ensure that these changes do not negatively impact the financial health of, in particular, small, rural carriers that are significantly dependent on USF subsidies.

Table 2. USF Programs and Funding

Program/Fund	Eligible Entity	Funding
Low Income Program (Lifeline)[a]	low income subscribers	N/A[b]
Broadband Adoption Pilot	eligible telecommunications carriers	up to $25 million
Schools and Libraries Program (E-Rate)	schools and libraries	$2.25 billion (annually)[c]
Pilot Program (Learning-On-The-Go)	students/library patrons	$9 million
Rural Health Care Program (Primary)[d]	rural public/nonprofit health care providers	$400 million (annually)[e]
Pilot Program[f]	rural public/nonprofit health care providers	$418 million[g]
Healthcare Connect Fund	rural public/nonprofit health care providers[h]	$150 million (annually)
Skilled Nursing Facilities Pilot Program	skilled nursing facilities[i]	up to $50 million over three years
CAF[j] Mobility Fund	eligible wireless providers	
Phase I		$300 million
Phase I Tribal Mobility Fund		$50 million
Phase II		$500 million (annually)[k]
CAF – Price Cap		
Phase I (Price-Cap) Incremental	price cap carriers	$300 million
Phase II (Price-Cap)	price cap carriers/competitors	$1.8 billion (annually)[l]
CAF – Rate of Return	rate-of-return carriers	$2.0 billion (annually)[m]
CAF Remote Areas Fund	eligible service providers	$100 million (annually)
CAF Legacy High Cost Fund	incumbent and competitive eligible telecommunications carriers	$3.6 billion (approximate for 2012 only)

Source: Data compiled by CRS based on FCC/USAC documents.

Notes:

a. The Link Up Program is eliminated on non-tribal lands. Support for the Low Income Program is not given directly to the subscriber but to their designated telecommunications service provider.

b. Funding level to be determined by the FCC.

c. Funding year is July 1-June 30 of the following year. E-Rate funding level is adjusted for inflation.

d. The Internet Access Program, which is part of the Primary Program, will end June 30, 2014, and participants will transition to the Healthcare Connect Fund.

e. Funding year is July 1-June 30 of the following year. This amount represents the ceiling for total USF support for all health care programs.

f. This program will be phased out and participants will transition to the Healthcare Connect Fund.

g. Funding derived from equal installments from the Rural Health Care Program FY2007-FY2009 annual funding budgets. The pilot is closed to new projects.

h. Non-rural healthcare providers may participate as part of consortia, but consortia must remain majority rural.

i. Preference will be given to facilities located in rural areas.

j. The Connect America Fund (CAF) will ultimately replace all existing high cost support mechanisms.

k. Of this amount, $100 million per year will go to tribal areas.

l. This money is high cost support frozen at December 31, 2011, levels and is available for a five-year period ending year-end 2017.

m. This money is high cost support frozen at December 31, 2011, levels and is available for a five-year period ending year-end 2017.

How Is Success Defined?

The commitment made under USF reform to ensure universal availability of advanced broadband, at rates that are reasonably comparable in all regions of the nation, is a major undertaking. How policy makers determine if that goal has been successfully met, however, will depend, to a large part, on how success is defined. Most consider the universal service mandate to provide voice service to have been met, but the United States has never reached a 100% penetration rate. According to the FCC, as of July 2011 (the most recent published data available), the telephone subscribership penetration rate in the United States was 95.6%, and rates vary based on characteristics such as location, age, and income. For example, penetration rates among states ranged from a low of 91.4% to a high of 98.5%; households headed by a person under 25 years of age had a penetration rate of 93.8% compared with at least 95.9% for those headed by a person over 55; penetration rates for households in income categories below $20,000 were at, or below, 94.7%, while the rate in households in income categories over $75,000 was at least 98.9%.[54] When it comes to broadband deployment, is anything under 100% an acceptable goal and, if so, what would the appropriate rate be?

Even if at some point in time broadband is made available in all areas of the country, the question of access versus adoption needs to be considered. According to the FCC's NBP, broadband is available in 95% of the nation but adoption rates are about 65%. This significant gap is explained by three factors: cost, digital literacy barriers, and a perceived lack of relevance.[55] The USF Order has attempted to address this issue through reforms including those to the Low Income Program, but the details of how this will be addressed are yet to be fully resolved.

Additional issues that policymakers may wish to monitor include those related to performance metrics such as speed, capacity, and latency. Although the USF Order provides requirements for such metrics, these needs will continue to evolve. Just as voice access standards evolved from, for example, party line to single line service, society's expectations with regard to broadband will also evolve. Policymakers will face the task of assessing what the standard for access will be in terms of performance metrics. What may be considered an acceptable level of service today may be considered inadequate for future needs.

[54] *Telephone Subscribership in the United States (Data through July 2011*). Released 2011. Federal Communications Commission. Available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-311523A1.pdf.

[55] *Connecting America: The National Broadband Plan,* Chapter 9, *Adoption and Utilization*, p. 168.

Who Should Pay?

The 1996 act requires that every telecommunications carrier that provides interstate telecommunications services be responsible for universal service support (§254[d]) and that such charges be made explicit (§254[e]).[56] Therefore, the USF receives no federal monies but is funded by mandatory contributions from telecommunications carriers providing interstate service.[57] These contributions are based on a percentage of the interstate and international telecommunications end-user revenues of telecommunications carriers and are called the contribution factor. This contribution factor has grown significantly since its inception from approximately 5.5% in 1998 to an all-time high of 17.9% in the first quarter of 2012; the factor for the first quarter of 2013 is 16.1 %.[58] Increases in demand for, and expansion of services covered by, the USF, as well as technological change and decreases in the interstate and international revenue base, have all contributed to this upward trend.

The FCC's decision to include broadband and mobility in the universal service definition has further highlighted the need to address how the funding mechanism should be modified to support such a mandate. At issue is the uncertainty and costs associated with mandating nationwide deployment of broadband as a universal service policy goal, and the impact that such a mandate will have on an already strained funding mechanism. Some have expressed concern that given the pressures currently facing the USF, and their impact on the contribution factor, a restructuring of the funding mechanism should have been addressed prior to, or at least simultaneously with, the expansion of the USF definition. Questions regarding who should contribute, how the mechanism to assess such contributions should be designed, and whether the contribution base should be expanded, are among the issues to be considered. The FCC, on April 27, 2012, adopted a further notice of proposed rulemaking seeking comment on comprehensive reforms to address the USF funding issue.[59]

Rural-Rural Divide

Rural America is subject to a "rural-rural divide" when it comes to the presence of broadband infrastructure. Some parts of rural America have sophisticated high-level broadband access while other parts have little to no broadband access. Disparity in access to broadband among rural areas is known as the "rural-rural divide." Price-cap companies, which are largely classified as non-rural carriers, serve both urban and rural areas and in their rural service areas face issues, such as remoteness and lack of density resulting in high costs, more commonly associated with rural carriers. According to the FCC, more than 83% of the approximately 18 million Americans that lack access to residential fixed broadband at or above the FCC's broadband speed benchmark live in areas served by price-cap carriers.[60] In other rural areas, often served by rate-of-return carriers, broadband is being deployed, often with the support of a combination of RUS loans and USF

[56] Section 254 (d) also states that other providers of interstate telecommunications may be required to contribute to the preservation and advancement of universal service if it is in the public interest.

[57] These companies include wireline telephone companies, wireless telephone companies, paging service providers, and interconnected Voice over Internet Protocol (VoIP) providers.

[58] Many assessed providers have chosen, but are not required, to recover USF contributions directly from their subscribers and place a universal service charge on subscriber's bills. This is legal and a common industry practice.

[59] *In the Matter of Universal Service Contribution Methodology, A National Broadband Plan For Our Future.* Available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2012/db0430/Fcc-12-46A1.pdf.

[60] USF Order para. 21.

support. To address this disparity the FCC, in its USF Order, established a $300 million incremental support component in the Phase I CAF Fund for areas lacking broadband infrastructure, solely for the use of price-cap carriers.

Concern has been expressed that providing for a CAF Phase I Fund for broadband deployment, solely for the use of price-cap carriers, disadvantages rural areas lacking broadband infrastructure that are served by the smaller, rural rate-of-return carriers. Some question why access to such funding should be limited to price-cap carriers when other areas of the nation are facing the same, or even more challenging, conditions to bring broadband to areas lacking access. If the ultimate goal is to bring broadband to all unserved areas, they ask, why should this funding be based on carrier classification rather than need? They also point to the fact that $185 million of the $300 million total for 2012 went unclaimed to further support their position that this support should be opened to all providers.

Financial Health of Rate-of-Return Carriers

Smaller, rural, rate-of-return carriers are particularly dependent on USF subsidies,[61] and have expressed concern that the reforms that the USF Order will implement could place them under financial hardship. Many RUS telecommunications and broadband borrowers (loan recipients) receive high cost USF subsidies. In many cases, the subsidy received from USF helps provide the revenue necessary to keep the loan viable. The Telecommunications Infrastructure Loan program is highly dependent on high-cost USF revenues, with 99% (476 out of 480 borrowers) receiving interstate high-cost USF support. This is not surprising, given that the RUS Telecommunications Loans are available only to the most rural and high-cost areas (towns with populations less than 5,000). Regarding broadband loans, 60% of BIP (stimulus) borrowers draw from state or interstate USF support mechanisms, while 10% of farm bill (Rural Broadband Access Loan and Loan Guarantee Program) broadband borrowers receive interstate high-cost USF support.[62] Thus, to the extent that USF may be reformed, this could have an impact on the viability of RUS telecommunications and broadband loans, and ultimately the overall financial health of the carrier.

Although the FCC included a waiver process in its USF Order for those carriers that felt they would be subject to significant economic stress, due to the reforms, many smaller carriers assert that the waiver process is too burdensome and difficult and that the requirements for qualifying for relief are too restrictive.

RUS and USF: Different Approaches, Shared Goals

The RUS broadband programs and the FCC's Universal Service Fund (USF) share a common goal: increasing broadband infrastructure deployment and applications in rural areas.[63] However, the way that each program addresses these goals is markedly different.

[61] According to the USF Order universal service revenues account for approximately 30% of the typical rate-of-return carrier's total revenues. USF Order para. 291.

[62] Jessica Zufolo, Deputy Administrator, RUS, *Overview of the RUS Telecommunications Loan and Grant Programs*, July 2011, Slide 7, available at http://www.narucmeetings.org/Presentations/Zufolo_7-2011.pdf.

[63] In addition to broadband deployment the USF has a broader mandate. For example, both voice and most recently (continued...)

- RUS grants and loans are used as up-front capital to invest in broadband infrastructure, whereas the USF provides ongoing subsidies to keep the operation of telecommunications—and most recently broadband networks in high-cost areas—economically viable for providers. These subsidies, in turn, enable providers to invest in upgrading their telephone networks to make them broadband-capable.
- Aside from the Distance Learning and Telemedicine (DLT) program, RUS telecommunications programs address broadband infrastructure deployment, which is intended to increase the availability of broadband in rural America. The USF, while also addressing broadband availability (through the High Cost Program and the Connect America Fund), also addresses end-user broadband adoption through the Low Income Program.
- Regarding the health and education applications, the principal difference between RUS programs (Distance Learning and Telemedicine) and the USF programs (Schools and Libraries Program, Rural Health Care Program) is that RUS funds end-user equipment, while USF funds connectivity. DLT grants serve as initial capital assets for equipment, instructional programming, technical assistance, or instruction for using eligible equipment (e.g., video conferencing equipment, computers) that operate via telecommunications to rural end-users of telemedicine and distance learning. DLT does not fund the telecommunications that connects that equipment. By contrast, the USF Schools and Libraries Program supports the conduit or pipeline for communications using telecommunications services and/or the Internet, and includes four categories of service: telecommunications services, Internet access, internal connections, and basic maintenance of internal connections. Similarly, the Rural Health Care Program provides discounts for rural non-profit health care providers by providing connectivity.
- Finally, the RUS programs are funded through annual appropriations and are subject to the annual congressional budget process. By contrast, USF is *not* funded through annual appropriations, but is funded by mandatory contributions from telecommunications carriers that provide interstate service.

Role of Congress

Congress is seeking ways to best leverage federal programs to ensure that the goals of the National Broadband Plan—including universal broadband service by 2020—are met to the greatest extent possible. With the September 30, 2010, conclusion of the American Recovery and Reinvestment Act (P.L. 111-5) broadband grant and loan awards, the RUS broadband programs and the USF programs remain the only ongoing federal vehicles to provide financial assistance for rural broadband deployment.

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broadband adoption for needs-based individuals (both urban and rural) is provided through the Low Income Program, and the Schools and Libraries Program offers support to both urban and rural areas.

With both programs currently at a pivotal point, an issue for the 113th Congress is how best to shape those programs as they go forward. The statute authorizing the Rural Broadband Loan and Loan Guarantee—Section 601 of the Rural Electrification Act of 1936—was significantly modified in the 2008 farm bill, and is being addressed once more in the 2013 farm bill.[64] Typically a new farm bill is developed every five years, principally by the House Committee on Agriculture and the Senate Committee on Agriculture, Nutrition, and Forestry. The Appropriations Committees in the House and Senate both have a major role to play as well, as each considers annual appropriations for the RUS broadband programs through the Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act.

Meanwhile, the USF is undergoing a major and unprecedented transition through a series of reforms being implemented by the FCC. Congress has largely adopted an oversight role and a "wait and see" posture with respect to the FCC's USF reforms.[65] While numerous Members have written letters to the FCC urging various modifications in the reform package, there was no comprehensive legislation introduced into the 112th Congress that addressed the FCC's USF reforms. The House Energy and Commerce Committee, the Senate Commerce, Science, and Transportation Committee, and the House Committee on Natural Resources continue to assess the impact of the reforms, and the FCC's progress in their implementation. To the extent that various constituencies and interest groups (whether it be small rate-of-return carriers, large price-cap carriers, competitive providers, state utility regulators, or broadband providers and consumers) feel they are disadvantaged by the reforms, and to the extent that programmatic inefficiencies or waste, fraud, and abuse come to light (as they have in the past through GAO reports, for example), Congress always has the prerogative in the future of formulating and considering legislation that could modify those reforms by amending the 1934 Communications Act.[66]

Given that the RUS and USF broadband programs share the goal of deploying broadband to rural America, Congress may also wish to assess how these two programs can best fit together. Are they effectively targeted towards providing broadband to the most unserved areas of the nation, while at the same time minimizing adverse impacts on private incumbent providers? Are they the most cost-effective way for Congress to fund rural broadband development? To what extent are the two programs complementary and to what extent do the two programs overlap? And finally, how will changes made to the USF program affect the viability of broadband loans made under the RUS programs?

[64] For information on the latest farm bill broadband proposals, see CRS Report RL33816, *Broadband Loan and Grant Programs in the USDA's Rural Utilities Service*, by Lennard G. Kruger.

[65] For example, see "Rep. Terry Considers Overhaul Bill To 'Clean Up' FCC's 2011 USF Order." *Daily Report for Executives*, April 27, 2012.

[66] The USF Lifeline program has been the subject of legislation (H.R. 176, H.R. 989, H.R. 1685, S. 774, S. 874) in the 113th Congress.

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