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Coordinating Future Investments in Broadband

**House Agriculture Subcommittee on Livestock, Rural Development and Credit
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Chairman Crawford, Ranking Member Costa, and members of this Subcommittee, thank you for the opportunity to testify this morning regarding Future Investments in Broadband.

The mission of the Rural Utilities Service (RUS) is to fund basic infrastructure services, including electric, telecommunications, and water and waste facilities in order to benefit rural America. RUS infrastructure investments deliver reliable, affordable electricity to power our homes and industries, broadband to expand access to education, healthcare, business and social services in rural areas, and clean, safe water to support healthy rural communities and meet the growing needs of rural America.

As Administrator of RUS, I am proud to lead an amazing group of people who are honoring their predecessors in the Rural Electrification Administration by continuing to encourage growth and development in rural areas through investments in infrastructure.

The history of rural electrification and rural broadband has many parallels. In the 1930's it took a series of acts and appropriations to establish a public system for financing, designing, and planning rural electrification. Likewise, in the 21st Century, it will take a sustained focus from Congress and the Executive branch to ensure that rural residents have the same access to broadband as their urban and suburban counterparts. The 1930 Census showed that ninety percent of urban dwellers had access to electricity while only ten percent of rural residents had

similar access. Claiming lack of profitability, private utilities declined to extend lines that would provide electricity to rural areas.

The predecessor to RUS, the Rural Electrification Administration (REA), was established by executive order signed by President Roosevelt on May 11, 1935. The agency was created under authority from the Emergency Relief Appropriation Act of 1935 a work relief bill that authorized \$100 million for rural electrification. A year later, Congress passed the Rural Electrification Act fully establishing a long term program to make loans available for the generation, transmission, and distribution of electric energy in rural areas.

As the nation headed into World War II, it was estimated that thirty-eight percent of rural Americans had no telephone service. Commercial credit was not available because loans to rural systems were not financially feasible. Referring to providing modern communications in rural America, the REA Administrator stated in 1939 that “Government assistance will be required if the job is ever to be completed. REA’s programs were successful in extending utility service – electric and telephone – to persons in rural areas. By 1953 more than 90 percent of all farms in the United States had electricity. In 1976, 90 percent of all farms had telephone service. At that time, our investments in electric infrastructure and reliable telephone service for those who live and work in rural areas improved the quality of life for those Americans and strengthened the local economies.

The building of the rural electric infrastructure has facilitated the use of diverse energy sources, including renewable energy sources such as wind and solar power, and more. The modern business model for energy services is likely to be a consumer-driven platform where existing and rapidly advancing communications and electric technologies are shifting the electric utility delivery marketplace from a commodity-centric model to a consumer-centric model. Similarly, the telecommunications industry made a paradigm shift from the central switch of the telephone company to today’s demand for ubiquitous broadband delivered through the network and ordered up on smart devices. Not surprisingly, the challenges faced during the electrification of rural America resurfaced as private broadband entities citing lack of end-users and profitability have not fully-expanded broadband infrastructure into rural areas.

As a result, RUS is as relevant in the 21st Century as REA was in the last century. RUS is actively positioning rural America – through broadband investments – to compete in the global economy, benefit from internet-based educational opportunities, and take advantage of telemedicine resources.

For example, in Arkansas RUS funded a telemedicine network through the Distance Learning and Telemedicine program that has permitted numerous patients, who previously would have been transported to Little Rock, to receive local treatment at the direction of a remote specialist.

Recently a patient who underwent surgery returned to the local hospital two weeks later with a life-threatening blood clot in their lungs. Utilizing the telemedicine network, a specialist in Little Rock was connected to the patient and family, virtually at the patient's bedside. The patient was able to be continuously monitored and receive the best possible care without having to be transported to Little Rock. The patient remained at the local hospital and made a full recovery.

Rural Utilities Service and Broadband

The broadband loan and grant programs at RUS are intended to accelerate the deployment of broadband services in rural America. “Broadband” refers to high-speed Internet access and advanced telecommunications services for private homes, commercial establishments, schools, and public institutions. Currently in the United States, residential broadband is primarily provided via mobile wireless (e.g., “smartphones”), cable modem (from the local provider of cable television service), or over the telephone line (digital subscriber line or “DSL”). Other broadband technologies include fiber optic cable, fixed wireless, satellite, and broadband over power lines (BPL).

Broadband access enables a number of beneficial applications to individual users and to communities. These include e-commerce, telecommuting, voice service (voice over the Internet protocol or “VOIP”), distance learning, telemedicine, public safety, and others. It is becoming

generally accepted that broadband access in a community can play an important role in economic development.

Telecommunications Programs

Since 1995, RUS has been in the forefront of meeting rural consumers' demand by requiring broadband capable technology in all telephone loans in order to play a major role in closing the urban rural digital divide. Today, RUS is focused on funding and providing broadband to rural America through the traditional telecommunications program, the broadband program and the Broadband Initiatives Program (BIP) funded through the American Recovery and Reinvestment Act of 2009 (Recovery Act). Through Recovery Act investments alone, RUS awarded over \$3.4 billion in funding for broadband projects and has helped extend broadband access in rural areas. As a result of the Recovery Act BIP program, over 59,566 miles of fiber and 1,281 wireless access points have been deployed to serve over 168,703 households, 12,539 businesses, and 1,786 critical community facilities across rural America.

Broadband and Rural America

Access to affordable broadband is viewed as particularly important for the economic development of rural areas because it enables individuals and businesses to participate fully in the online economy regardless of geographical location. For example, aside from enabling existing businesses to remain in their rural locations, broadband access could attract new business enterprises drawn by lower costs and a more desirable lifestyle. Essentially, broadband potentially allows businesses and individuals in rural America to live locally while competing globally in an online environment.

Bobcat Company in Gwinner, North Dakota is a perfect example of the need for rural broadband infrastructure to compete in the global economy. RUS provided several infrastructure loans to Dakota Central Telephone Company (Daktel), and most recently a BIP loan and grant to assist with addressing the challenge of rapidly expanding the access and quality of broadband services. Bobcat is a large manufacturing employer in rural North Dakota. The company has one of the

most extensive compact equipment distribution networks in the world and uses Daktel's fiber network to link to other company locations around the world.

Given the large potential impact broadband may have on the economic development of rural America, concerns have been raised over a "digital divide" between rural and urban or suburban areas, with respect to broadband deployment. While there are many examples of rural communities with state-of-the-art telecommunications facilities, recent surveys and studies have indicated that, in general, rural areas tend to lag behind urban and suburban areas in broadband deployment. For example, according to the Federal Communications Commission's Eighth Broadband Progress Report, released in August 2012, of the 19 million Americans who live where fixed broadband is unavailable, 14.5 million live in rural areas.

The 2013 Department of Commerce report, *Exploring the Digital Nation: America's Emerging Online Experience*, found that while the digital divide between urban and rural areas has lessened since 2007, it still persists with 72% of urban households adopting broadband service in 2011, compared to 58% of rural households.

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, fiber, and DSL—the greater the geographical distances among customers, the larger the cost to serve those customers. Thus, there is 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.

The terrain of rural areas can also be a hindrance, in that it is more expensive to deploy broadband technologies in mountainous or heavily forested areas. An additional cost factor for remote areas can be the expense of "backhaul" (e.g., the "middle mile"), which refers to the installation of a dedicated line that transmits a signal to and from an Internet backbone, which is typically located in or near an urban area.

As a result, the economic impact on rural America of not having broadband is significant. For example, an economic study from Oregon State University in 2014 provided data showing the impact on rural Oregon communities with increased broadband adoption between 2008 and 2011. There was positive impact on changes in median household income and total employment (analysis limited to non-metro counties) over a short period of time.

Conclusion

Broadband deployment is increasingly seen as providing a path towards greater regional economic development. From our long history of working with companies in rural America and providing capital for broadband infrastructure, we know that many rural areas, due to factors such as low population density and high costs associated with difficult terrain, have difficulty attracting the investment required for a sustainable broadband operation.

To meet the goal of increasing economic opportunity in rural America, RUS programs finance rural telecommunications infrastructure. RUS telecommunications programs, with a combined loan portfolio of \$4.6 billion, help deliver affordable and reliable advanced telecommunications services to rural communities—services comparable to those in urban and suburban areas of the America. Infrastructure investments offer returns for rural America - building, deploying, and using broadband increases access to health care and education, expands markets for businesses, and increases the quality of life for rural Americans. None of this can happen without expanding broadband connectivity and capacity in rural America.

I thank the Committee and its members for their continued interest in broadband programs.