**Comments of the**
**RURAL POLICY RESEARCH INSTITUTE**

**To**

**US Department of Commerce**
National Telecommunications and Information Administration

**US Department of Agriculture**
Rural Utilities Service

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# American Recovery and Reinvestment Act of 2009
# Broadband Initiatives

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## Rural Policy Research Institute (RUPRI)

RUPRI conducts research and facilitates dialogue designed to assist policy makers in understanding the rural impacts of public policies. RUPRI, established almost 20 years ago, is an independent and non-partisan organization based at the University of Missouri with a National Advisory Board comprising leaders from public, nonprofit, and educational organizations from across rural America. RUPRI operates through a group of centers and panels with expertise in rural health care, rural entrepreneurship, regional competitiveness, and spatial and economic analysis, underpinned by a core of experienced national policy strategists and analysts. RUPRI's Telecommunications Panel has previously provided testimony and commentary to the U.S. Congress on the implications of Internet policy on rural America.

## The Case for Investment in Rural Broadband

The phrase "cyber-bridge to nowhere,"[1] which has assumed some prominence in discussions about stimulus investments in rural broadband, has cast doubts as to whether any investments outside metropolitan centers and their suburbs would yield an acceptable return. It is unfortunate that this has fed into a broader rhetoric that divides urban from rural rather than recognizing the extraordinarily important contributions that rural America will be called upon to play in the 21st century. Rural America will be at the very heart of innovation and development in food production and processing, alternative energy, natural resources stewardship, and re-creative activities. Its people will need to be well-educated and trained and have access to information and networks across the globe. High-speed Internet access is a critical component of this future.

Over 70 percent of Americans access and use the Internet at work, home, or by mobile hand-held devices, and consumers are increasingly replacing dial-up services with broadband wherever it is available because of its advantages in speed and capacity[2]. Broadband is nearly ubiquitous in American cities and consumers have many choices among technologies and providers in suburban and urban communities[3].

Unfortunately, while telecommunications providers expanded the national broadband market five-fold between 2001 and 2006[4], they have been less eager to tackle broadband deployment in rural communities and inner cities. One estimate is that roughly one-third of households in rural America cannot subscribe to broadband Internet services at any price[5]. A recent study in North Carolina showed that per capita income had no statistically significant influence on availability of broadband but that the key determinants were size and concentration of population along with terrain, distance and population density[6].

Access to affordable broadband service is particularly important for the social and economic well-being of rural areas because it represents the very means for counteracting these challenges of low population density, long distance, and difficult terrain. It is critical for the economic development of rural areas as it allows entrepreneurs and businesses to participate in the global economy wherever they happen to be located. In health care, broadband technologies enable the use of telemedicine networks to supplement rural and long-distance health services and to achieve significant cost savings in health care costs. In rural school systems, broadband access has proven to be essential to expanding educational opportunity. In the areas of government services and public safety, there is the potential to increase transparency, improve customer service, update and streamline bureaucracy, and cut costs—all essential objectives for hard-pressed local governments across rural America.

**Principles for Rural Broadband Policy**

In a Policy Brief prepared by RUPRI in December 2008[7], the following principles were recommended as the foundation for U.S. rural broadband policy:

1. **Broadband connectivity should be central to universal telecommunications service**. The intent of the 1996 Telecommunications Act was to ensure that all Americans had access to advanced telecommunications. FCC data appear to indicate that this goal has already been achieved[8] but it is clear from recent studies that these data are misleading, and that even in states such as California, there are areas where over 40 percent of the population does not have the option to purchase any broadband service[9]. The Broadband Data Improvement Act of 2008[10] (and now specific funds for broadband mapping in the Recovery Act) should provide the necessary impetus to collect more detailed information on the availability and adoption of broadband across the country and help focus attention on areas where the goal of universal service is not being met.

2. **Broadband is a critical part of rural development infrastructure.** Investments made through the Universal Service Fund, by the U.S. Department of Agriculture, and by certain states to stimulate broadband infrastructure in rural America have undoubtedly had substantial and positive impact. But this investment has to continue as demand increases and new technologies evolve. For rural America, this investment is not an optional luxury after other infrastructure investments such as roads, electricity, or water. The ability to promote distance learning, to transfer medical records and provide remote medical treatment, and to participate in civic affairs online all enable small communities to remain viable and sustainable for the long term.

3. **Speed really does matter.** Differences in data transfer speeds and capabilities have the potential to mask another disparity in broadband service across the country. While the market in metropolitan areas continues to ramp up speeds and quality, less densely populated areas are struggling to obtain basic services, and the divide between urban and rural services continues to widen on this second front. Rural investment programs need to focus not on current minimum requirements, but on building for the next generation of technologies and capacities.

4. **Outcomes, not specific technologies, should drive broadband deployment**. Outcomes based on measures of availability, speed, and quality should be the drivers of broadband infrastructure investment. Recognizing that rural America comprises a diverse array of geographic, demographic, and economic structures, no single technology or business model will serve all rural needs. In addition, the relative merits of different technologies change over time with innovation. Public policy should not inadvertently give an advantage to one approach over the others, but remain "technology neutral."

5. **Enhanced supply must be accompanied by strategies to increase demand.** Studies have shown that there is little difference in the range and depth of online activities of rural Internet users and their urban counterparts once they take the step to be subscribers[11]. The challenge is to overcome the barriers of inadequate supply, cost, and unfamiliarity with the technologies to encourage more rural residents to subscribe. Training and support programs offered by community colleges and community-based organizations provide many examples of how local communities are aggregating demand for broadband and its benefits among their citizens. Getting more computers into homes and businesses is a necessary prerequisite to increasing comfort levels for potential users.

6. **States, regions, and communities should integrate broadband connectivity and use into their strategic planning.**
   Programs to encourage investments and demands will vary from community to community. Many states have already been very active in promoting broadband deployment strategies, but others have not made this a priority[12]. Some local communities, tired of waiting for telecommunications companies or states to make broadband available, have gone ahead with projects to aggregate demand and to forge partnerships with companies, utilities, colleges, hospitals, and other institutions. Federal policies should encourage both statewide and local innovation and remove regulatory and other barriers to such projects.

**Comments on the American Recovery and Reinvestment Act of 2009 Broadband Initiatives**

**1. Purposes of the NTIA Grant Program**

The five purposes of the Broadband Technology Opportunities Program (BTOP) as stated in Section 6001 of the Recovery Act are both appropriate and desirable. From a rural policy perspective, the program should be used to address market failures in the provision of broadband investment, specifically in rural areas with no or very limited access, and in rural areas with low and/or unreliable speeds. Of particular importance is the provision of broadband education, awareness, training, access, equipment, and support through the variety of organizations and institutions listed in the legislation to ensure that demand for and usage of broadband continues to expand and services remain financially sustainable in the long-term. Initiatives to increase the availability of computers and broadband access in the home and workplace should be considered as part of the program, given that increased familiarity leads to increased usage.

Application, monitoring and compliance procedures for BTOP should ideally be streamlined and integrated with those of other programs aimed at broadband deployment both in the Recovery Act and elsewhere. Procedures that by the burdens they place on applicants favor large telecommunications providers and impede innovation, flexibility and local ownership among less traditional providers should be avoided.

**2. The Role of States**

The principle of engagement with States is clearly desirable as they should be much more aware of the current status of broadband deployment and usage, and of the priorities for achieving universality across their jurisdiction. That said, the Internet represents the ultimate in boundary-free communications and it will be important for the Federal government to ensure that the interests of areas and populations of disadvantage are safeguarded. This will require a clear set of principles to be established at the outset to which States and applicants will need to adhere, similar to those outlined earlier in this paper. One of these principles that encourages States to integrate broadband considerations into ongoing regional strategic planning activities may prove to be particularly important in resolving differences among competing claims.

**3. Broadband Mapping**

The lack of credible data on the availability, access, speed, cost, and adoption of broadband across the country is a major impediment to formulating appropriate public investment policy. It is generally accepted that data collected by the Federal Communications Commission based on zip codes conveys a misleading picture of current status particularly in the rural America. The

provisions within the Broadband Data Improvement Act and the Recovery Act are therefore to be welcomed as important steps to rectify the problem.

The purpose of the mapping effort should be to provide a consistent and verifiable database of availability, access, speed, cost, and adoption of broadband across the country in a form that permits analysis across any geography from census tract to counties to Congressional districts to states. It should be possible to integrate these data into other data on social, economic, and environmental characteristics, and to use for econometric modeling to assist both "what if?" analyses and assessments of impact of public investments. Data collection from telecommunications providers and regulators should be complemented by series of local surveys and analyses both to verify these data and to identify specific challenges to adoption such as affordability, technical training, and language barriers.

**4. Coordination with USDA RUS Broadband Program**

To maximize the impact and effectiveness of the NTIA and USDA programs, it is imperative that in respect of their application across rural America there is a high degree of coordination in terms of program outcomes, criteria for target areas and populations, and procedures for application, monitoring and compliance. A common adherence to key principles for serving rural America as previously outlined will be essential.

**5. Definitions**

The introduction of the terms "unserved" and "underserved" areas in the Recovery Act to guide BTOP investment priorities raises a number of issues.

a. **Unserved:** The general assumption is that "unserved areas" refers to geographical areas that in whole or part currently lack terrestrial non-dial-up Internet access. "Unserved populations", by extension, are people who live in these "unserved areas", or are people who are currently denied access to broadband services by virtue of their socio-economic status or demographic characteristics.

   Two divergent arguments stem from this definition. The first argument says that some people and places are unserved because the market did not reach them, which provides the primary justification for public investment to correct such market failures. This justification is given extra force if, as some argue, communication is a fundamental human right, and if in this era of advanced digital communications, access to broadband is essential to communication.

   The other argument says that "unserved areas and populations" will be prepared to accept a lesser level of broadband access than would be tolerated elsewhere because any access represents an improvement on current services. This argument advocates a form of triage that will reinforce a two-tier approach to communications access in our nation. The market will continue to drive faster speeds and higher levels of functionality in high value urban markets, while leaving rural America further behind.

b. **Underserved:** The definition of "underserved" areas and populations is mainly a function of two related factors. The first factor is speed, or the need to specify a level of speed at which current terrestrial non-dial-up service is adequate for everyday applications. The obvious challenge here is that a minimum speed specification represents a rapidly moving target when increasing consumer demand, product availability, and technological advances push

required downstream and upstream broadband speeds ever higher. This phenomenon is particularly true for applications such as telemedicine, telecommuting, and educational services that are increasingly important for rural America.

The second factor that defines "underserved" areas is a lack of competition among broadband service providers. Competition is an indicator of investment attractiveness in terms of population density, socio-economic composition, and growing economic activity. The more competition, the greater the likelihood of faster speeds, better service, and newer technologies. In areas with little or no competition, there is less incentive to lift areas out of "unserved" or "underserved" status.

These issues suggest that the interests of rural America would be best served by pushing for technologies and approaches that effectively minimize the differences in availability, quality, and speed across the whole country. This would necessitate:

- Discouraging investment in low performance technologies by telecommunications companies simply to demonstrate some level of coverage in currently unserved areas;
- Using incentives to create and adopt technologies that can bring high speeds (both for uploading and downloading content) and quality across large low-population geographies, both unserved and underserved; and
- Removing barriers to local and community-based models of demand aggregation and ownership.

## 6. Considerations for the Rural Utility Service Broadband Program

An important focus of the RUS broadband programs to date has been to use Federal loan guarantees to leverage private sector investment, both to make public dollars go further and to increase the probability of commercial sustainability of the funded projects. The implication of this approach is that there is an inherent bias towards large-scale investments for which markets have been clearly established. This creates challenges for unserved and underserved areas where the market is weak and commercial returns are less certain. To meet the principles referred to above, it would be desirable for a proportion of RUS dollars to be applied in the form of grants and low-interest loans using similar criteria to those to be adopted by NTIA.

The RUS can be particularly helpful to BTOP if the USDA's networks of state rural development offices can be utilized as liaison on priorities with States and other agencies involved in rural development investments.

## 7. Definition of Rural

Determining an appropriate definition of "rural" is a difficult and politically contentious issue. The 2008 Farm Bill requires the Secretary of Agriculture to make recommendations on definitions that can be used for determining the allocation of rural development investments. Until these new definitions have been considered and approved by Congress, the Rural Utilities Service proposes to apply the 2002 Farm Bill definition based upon the U.S. Census definition of places smaller than 20,000 people. This approach, although purporting to make a clear distinction between urban and rural places, allows many suburban and small urban centers within metropolitan areas to be eligible for support.

There are many options available but one set of considerations relates directly back to the real intent of the Recovery Act in respect of broadband. If on the one hand, Recovery Act

investments are intended to maximize the number of rural beneficiaries, then the approach would be to target rural populations within metropolitan areas—1,100 counties and over 30.3 million rural people—and together with a further 14.2 million people living in 686 counties that comprise designated micropolitan areas. Here the definition would be based on a combination of the Office of Management & Budget's metropolitan/micropolitan/non-core distinctions as well as the Census urban-rural definitions. If on the other hand, the Recovery Act is to be used in an attempt to "level the playing field" for broadband access across the rural landscape, the appropriate approach would be to target investments on noncore areas, including the 1,355 noncore counties with almost 20 million people in the more remote and lightly populated parts of the country and possibly micropolitan counties with populations of less than 20,000[13].

If the data become available on unserved and underserved areas and populations, then they can be overlaid on the rural definitions map to guide both NTIA and RUS investments.

### 8. Definition of Speed

The requirement for RUS broadband investments to facilitate rural economic development implies giving the opportunity for rural-based enterprises of all kinds to be able to gain and rely upon high speed access to fully participate in global trade. There are three important factors to be taken into account. The first is the need for symmetry between upload and download speeds – increasingly data-intensive communications in business, health care, and education require an easy two-way flow of content. Second, investments should be in broadband provision that is capable of regular expansion in functionality – the pace of change in the uses and complexity of Internet communications requires that businesses are not locked into obsolete technology. Third, high speeds are critical and rural businesses should not be penalized by standards of service that would not be acceptable even in developing countries. Some advocates argue that ambitious goals should be established of the order of 5 megabytes in each direction even if this is currently unachievable in more remote locations.

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[1] Used, for example, in: Herszenhorn, David M. "Internet Money in Fiscal Plan: Wise or Waste?" New York Times: February 2, 2009.

[2] Horrigan, James. *Home Broadband Adoption 2008*. Pew Internet & American Life Project, Washington, DC: July 2008, p.2.

[3] Federal Communications Commission (FCC). *High-Speed Services for Internet Access: Status as of June 30, 2007*. Industry Analysis and Technology Division, Wireline Competition Bureau. Washington, DC: March 2008.

[4] Stoel, Leslie and Stan Ernst. *Comparing Rural Retailer Internet Users and Non-users: Access Speed, Demographics, Attitudes, and Beliefs.* Workshop on Broadband in the Rural Economy, USDA-ERS, Washington DC: September 2008.

[5] Peha, Jon M. *Bringing Broadband to Unserved Communities*. Discussion Paper 2008-10, The Brookings Institution, The Hamilton Project. July 2008, p. 2.

[6] Renkow, Mitch. *Residential Broadband Availability and Adoption: Recent Evidence from Kentucky and North Carolina.* Workshop on Broadband in the Rural Economy, USDA-ERS, Washington DC: September 2008.

[7] Dabson, Brian and Jennifer Keller. *Rural Broadband: A RUPRI Policy Brief*. <http://www.rupri.org/Forms/RuralBroadbandFinal.pdf>: December 2009.

[8] Federal Communications Commission (FCC) GN Docket No. 07-45. Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996. Fifth Report 08-88 Washington, DC: June 12, 2008.

[9] California's Broadband Task Force. *The State of Connectivity: Building Innovation Through Broadband*. Final Report: January 2008.

[10] "Public Law S. 1492--110th Congress: Broadband Data Improvement Act," 2007. GovTrack.us. <http://www.govtrack.us/congress/bill.xpd?bill=s110-1492> (accessed April 1, 2009).

[11] Horrigan, James and Katherine Murray. R*ural Broadband Internet Use*. Data Memo. Pew Internet & American Life Project, Washington, DC: February 2006.

[12] National Governors Association (NGA) Center for Best Practices, Issue Brief. *State Efforts to Expand Broadband Access.* Washington DC: May 20, 2008.

Alliance for Public Technology, and Communications Workers of America. *State Broadband Initiatives*: July 2008.

[13] Kathleen K. Miller, Rural Policy Research Institute. The population numbers cited here combine the most recent county classifications (CBSA November 2008) with the Census 2000 population distribution for urban and rural.