

**Statement of  
Julie A. Hedlund  
Senior Analyst**

**Information Technology and Innovation Foundation**

**The Importance of National Policies to Connect  
Rural America to Broadband**

**before the  
Committee on Appropriations Agriculture Subcommittee  
U.S. House of Representatives  
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Madame Chairman, Mr. Kingston and members of the Subcommittee, I appreciate the opportunity to appear before you today to discuss the importance of national policies to promote broadband access for rural America. I commend you for addressing this important issue.

I am a Senior Analyst with the Information Technology and Innovation Foundation, a non-partisan research and educational institute whose mission is to formulate and promote public policies to advance technological innovation and productivity internationally, in Washington, and in the states. Recognizing the vital role of technology in ensuring American prosperity, ITIF focuses on innovation, productivity, and digital economy issues.

**The Benefits of Broadband for Rural America:**

At the national level studies show that universal broadband access would yield substantial economic benefits. A 2001 study estimated that universal broadband adoption could yield annual consumer benefits of \$300 billion.<sup>1</sup> But expanded access to broadband by rural America in particular, will bring substantial benefits, not just for rural communities, businesses and residents, but for the nation as a whole.<sup>2</sup>

Broadband benefits rural areas in two key ways. First, in the new digital economy, broadband telecommunications has become a key location factor for businesses, almost as important as sewer, water, telephone, and electricity service. While the presence of high-speed and affordable broadband may not be a determining factor in business location decisions – just as the presence of telephone service, for example, stopping being one long ago – the lack of it is. This is why research finds that new businesses in rural areas are more likely to locate where broadband access already exists.<sup>3</sup> It is also why from 1998 and 2002, employment in communities with broadband grew one percentage point faster annually than communities without.<sup>4</sup> This means that a rural region with 10,000 jobs and broadband would have added 100 more jobs than a similar region without broadband. Firms with broadband access are more able to communicate with suppliers and customers, enabling them to be more productive, innovative and have higher sales. This is why a 2005 study of businesses with broadband access in Appalachia found that for each firm located in a broadband accessible zip code productivity increases between 14 and 17 percent over a similar firm located outside a region with broadband access.<sup>5</sup>

Second, broadband doesn't just make it easier for rural businesses to grow, it improves the quality of life in rural communities, making it easier for smaller locales to attract and retain residents.<sup>6</sup> One reason is because broadband fosters social interactions that increase attachments to rural communications and increases economic opportunities.<sup>7</sup> Another is that broadband is technology that is beginning to level urban and rural access to host a services. One of the advantages of living in a large metropolitan area is that there is a host of diverse services available – from specialty stores, to high quality health care, to museums – all because the providers can serve a large enough customer base to thrive. For the over 60 Americans who live outside metro areas, getting access to these services used to require a long trip by car, train or plane to the city. However, broadband can bring these and other services to rural residents by allowing rural residents to “travel” virtually to the city. Consumers in rural areas, who were previously constricted in their choices of products and services, now have access to the same variety of goods as consumers living in major metropolitan cities. A rancher in the middle of Wyoming has the same selection of music and books through iTunes and Amazon as anyone in New York City. A resident of a small town in Georgia can gain access to high quality health

care through a telemedicine link to the best hospitals in urban areas throughout the nation. Indeed, one study of a tele-medicine program for rural children with special health needs found that it afforded them similar high quality care without the cost or inconvenience of driving several hours to see specialists face to face.<sup>8</sup> A laid-off coal miner in West Virginia can take courses online and get a degree to help them find a new job in a different career. Distance education also expands the course catalogue for traditional students, making it easier for rural high school students, for example, to access AP courses that may not be offered at their local school.

It is important to note that helping expand rural broadband is not just something that will help rural communities; it will also help the nation as a whole. By expanding the number of businesses and individuals who are connected to broadband, the overall digital economy will grow, driving innovation, competitiveness, and productivity.<sup>9</sup> Moreover, expanded rural broadband will enabled more balanced national growth, whereby less crowded and less expensive places grow faster while crowded and expensive high-cost metropolitan areas will not grow quite as fast. That helps everyone, including commuters and home buyers in metropolitan areas and the companies who employ workers there.

### **Rural America Lags Behind Urban Areas in Broadband Deployment and Adoption:**

Unfortunately, deployment and adoption of broadband is lower in rural areas than in metropolitan areas. In 2006 only 25 percent of rural adults compared to 44 percent of urban and suburban areas had broadband Internet access.<sup>10</sup> While some of this may be related to lower levels of Internet access in rural areas, some relates to lower levels of broadband availability. For example, in 2004, urban Internet users were about twice as likely to subscribe to broadband than rural users.<sup>11</sup>

However, while rural areas lag behind, they have gained against metro areas in recent years. In 2001, the rate of rural broadband subscribership was about one third of urban and subscribership, but by 2006 had narrowed to about one half (see Figure 1). Between 2001 and 2006, the number of the most densely populated zip codes with at least one broadband provider increased from about 23 percent to almost 90 percent (see Figure 2). However, rural areas still have fewer

broadband providers available to them than do suburban and urban residents. A larger share of residents and businesses in large urban markets have access to competing broadband services and most other metropolitan populations can access one or more broadband service, but rural areas with low population densities often have little or no broadband access.<sup>12</sup>

Figure 1: Home Broadband Penetration by Community Type<sup>13</sup>

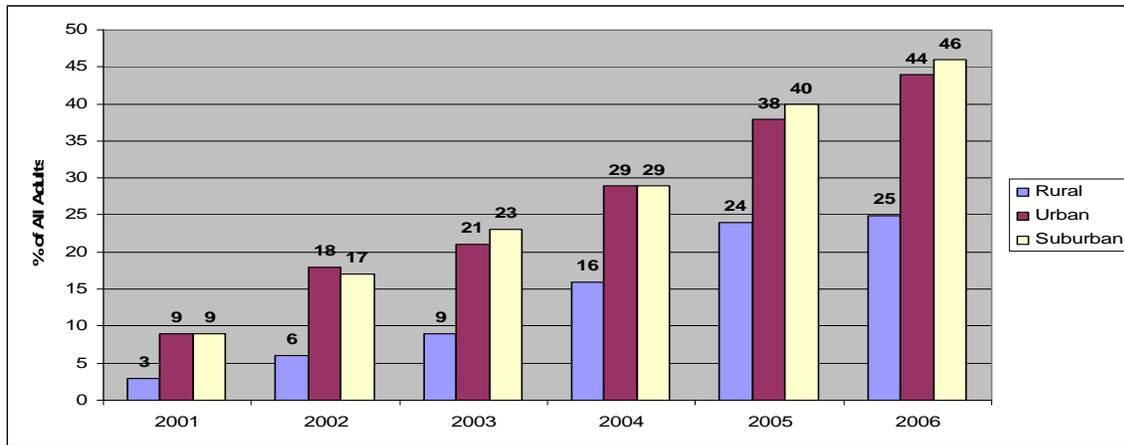
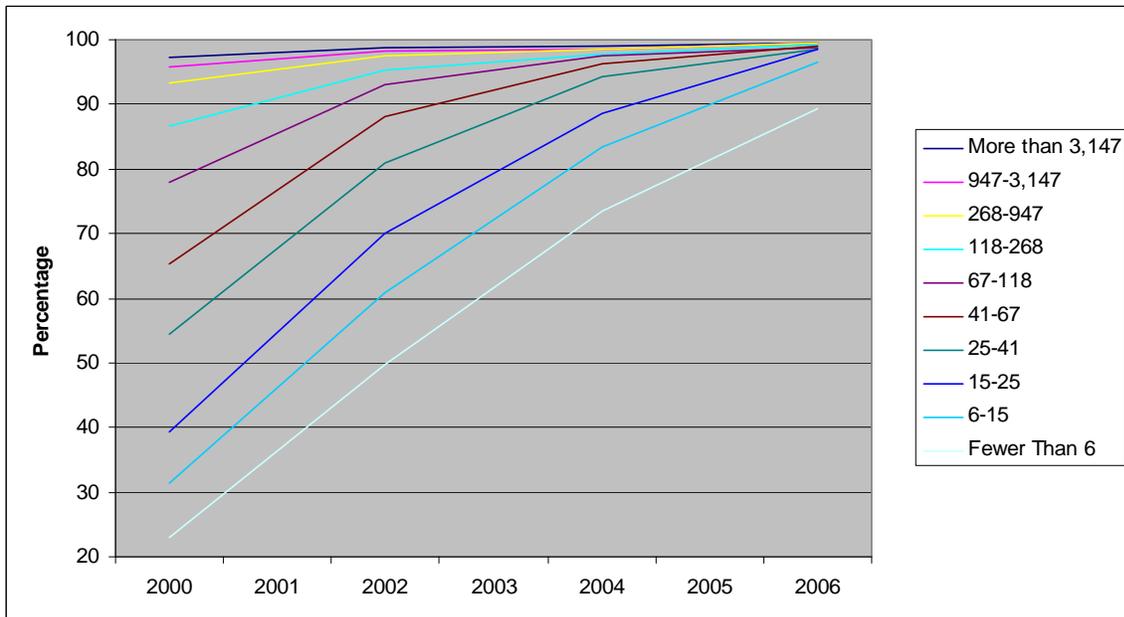


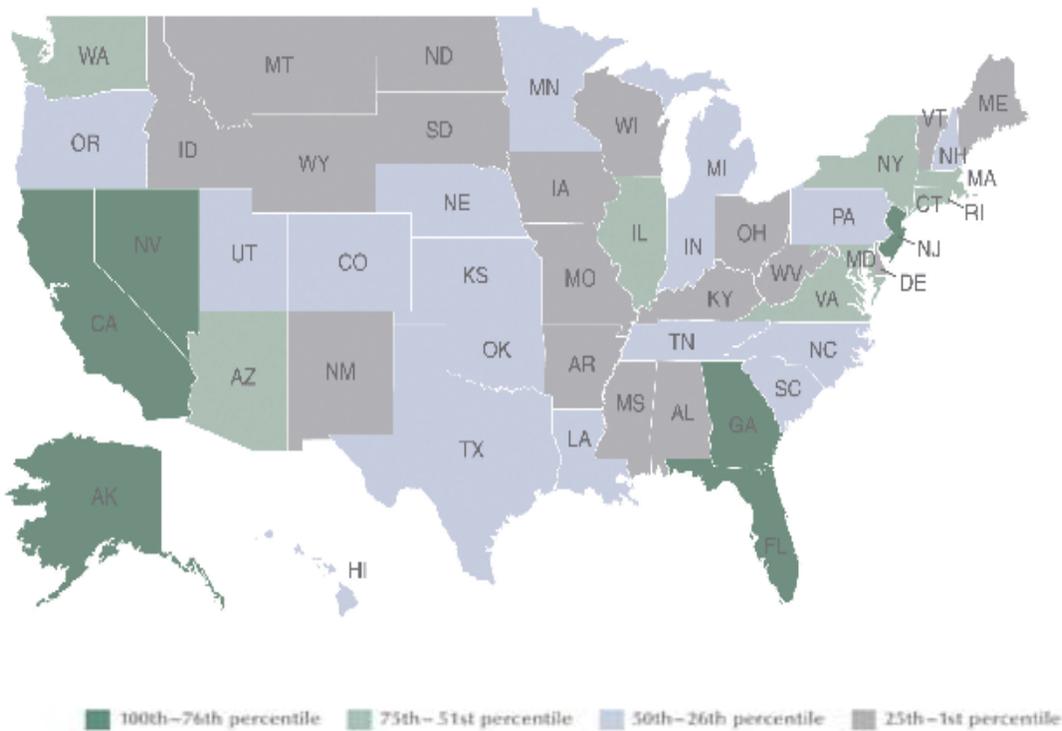
Figure 2: Percentage of Zip Codes with >1 Broadband Subscriber by Pop. Density<sup>14</sup>



At the state level, rural states generally lag behind more densely populated, urbanized states. For example, states such as Wyoming, Montana, and North Dakota in the Northwest to Arkansas, Mississippi, and Alabama to the Southeast, are in the 25<sup>th</sup> or lower percentile in

broadband access (see Figure 3). But even in more urbanized states, many communities have no broadband access. For example, Massachusetts, a state many think of as relatively urban, has, 32 towns with no broadband access (other than satellite), according to the Massachusetts Technology Collaborative.<sup>15</sup>

Figure 3: Broadband Telecommunications in the United States<sup>16</sup>



### Barriers to Connecting Rural America to Broadband:

Rural areas are behind in broadband deployment and use for a number of reasons. Lower incomes in rural areas make broadband relatively less affordable. More importantly, low rural population densities create disincentives to deployment and create higher costs. The larger and more affluent market size in metropolitan areas rightly leads broadband providers to focus their investment in urban areas with high-income consumers and residential densities, where they are likely to get the fastest adoption of their services.

However, increased costs and technical difficulties to providing broadband in rural areas are the more significant barrier. Because telecommunications facilities in rural locations typically serve

larger geographic regions than in urban areas it is more expensive to serve the average rural customer. Small, usually rural local exchange carriers (LECs) have five times fewer lines per switching office and almost five times less transmission facilities per line than large, more urban LECs.<sup>17</sup> Specifically, the average loop length (distance from a telecommunications facility to a household or business) for rural telephone companies is 20,330 feet, significantly longer than the 18,000 feet beyond which the service provider will have to upgrade in order to provide broadband access, and significantly longer than the 7,500 foot length of largely urban and suburban Regional Bell Operating Companies.<sup>18</sup> Cost also is a factor for providers of cable or fiber broadband. In this case, while the distance between a household and a telecommunications facility may not pose technical difficulties, the cost to lay cable or fiber is significantly higher since for a given length of wired network, the number of customers served in a rural area is smaller. While the cost for serving customers in a rural town center where the distances from the central office to the home is relatively short and the densities relatively high (at least compared to farther out in the countryside) may be comparable to the costs of deploying broadband in urban and suburban areas, the costs of serving areas outside the town centers can be much higher. This is why the average cost of providing telephone service in a rural area (a proxy for the cost of providing wired broadband service) is approximately 7 times more than in an urban area.<sup>19</sup>

### **Policies to Expand Rural Broadband Access:**

Absent more robust policies to help spur more rural broadband deployment and adoption, rural America will continue to lag behind urban and suburban America. Government can and should take a number of important steps to narrow the gap. First, it should expand access to spectrum for wireless broadband. As WiMAX is deployed and the prime 700 MHz spectrum is auctioned more rural places will be able to gain access to wireless broadband. But ensuring that even more spectrum is available will be important. One way to do this is to open up more unlicensed spectrum in the white spaces between digital TV bands.<sup>20</sup>

While opening up more spectrum for wireless broadband can help provide a potentially more affordable national infrastructure for enabling rural broadband access, explicit rural broadband policies are also needed. A key first step is to support state level efforts to spur broadband

deployment in underserved rural communities. One model is ConnectKentucky, a public-private partnership that focuses not just on assessing where broadband is and is not present, but also helps spur demand for broadband in communities where it is economically feasible.<sup>21</sup> I encourage Congress to carefully consider proposals to create a national Connect program along the lines already proposed.<sup>22</sup>

While these kinds of mapping and demand aggregation strategies can work to help bring broadband to many areas, more explicit policies to help subsidize the costs of broadband, especially higher speed broadband build out to higher costs areas are needed. There are currently a number of proposals that seek to accomplish this goal. One approach that can be effective is providing tax incentives to companies for building-out broadband to higher cost areas.<sup>23</sup>

Congress should also consider expanding support for the Rural Utilities Service loans and grants and targeting these more narrowly to areas that do not have access to broadband. In particular, any reform of the Rural Utilities Service should include the requirement that these loans or grants are targeted more to those eligible communities that do not already have competitive broadband service. Because it is harder to make the business case for investing in broadband in less densely populated areas, a significant share of RUS loans and grants subsidize competitive broadband providers in communities where there are already one or more broadband providers. The RUS should instead provide larger subsidies to a smaller number of providers who invest in places where a significant part of the territory has no broadband. This may mean providing more generous loan terms (e.g., lower equity requirements) and/or lower interest rates. To be sure, doing so will mean a higher risk of default, but it makes no sense for federal policy to subsidize activities that the private sector already does a relatively good job of providing. The federal role should be to fill the gaps where the private sector finds it more risky to do so.

Finally, Congress should consider reforming the Universal Service Fund (USF) program to extend USF support for rural broadband. Perhaps the most effective approach would be to conduct reverse auctions, whereby broadband providers bid for the right to serve currently unserved households in return for a one-time government subsidy. Winning bids would be those

requesting the lowest subsidy, while providing minimum speeds and quality of service. The one-time auctions would cover the higher capital costs and higher capitalized operating costs.

In the 1930s, nearly 90 percent of urban Americans had electricity, but only ten percent of rural dwellers did and private electric utilities were wary of making the investments. But the Rural Electric Administration was established to not only establish rural electric cooperatives but also to help private utilities extend service. Just like wiring the nation for electricity 70 years ago underpinned a host of other positive developments (e.g., boosting farm productivity); accelerating rural adoption of high-speed broadband will do the same today.

Thank you for letting me share my views with you and I would be happy to answer any questions you might have.

#### **Endnotes:**

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  20. See the ITIF Forum, "There is a Free Lunch – How Opening Up Unused ‘White Spaces’ on the Airwaves Will Drive Broadband Innovation" at <[www.itif.org/index.php?id=81](http://www.itif.org/index.php?id=81)>.
  21. See ConnectKentucky.org, Message From Our President, <http://connectkentucky.org/about/message.htm>. Through mapping potential customers and demand aggregation, ConnectKentucky aims to spur greater broadband deployment.
  22. For example, Senator Richard Durban (IL) and Representative Zachary Space (OH) introduced the "Connect the Nation Act" to promote the deployment and adoption of telecommunications services and information technologies. S. 1190 and H.R. 3627, 110<sup>th</sup> Cong. (2007).
  23. For example, Senators Jay Rockefeller (D-VA) and Olympia Snowe (R-ME) introduced the "Rural Telecommunications Modernization Act of 2000" with provisions offering tax credits for expenditures on rural broadband infrastructure. S. 2321, 106<sup>th</sup> Cong. (2000). More recently, Congressman John McHugh (R-NY) introduced the "Rural America Digital Accessibility Act." This bill would provide grants and loans to broadband providers who deploy broadband to underserved rural areas. H.R. 3428. 110th Cong. (2007).