

**University of Alaska Comments
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to

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

and

**Rural Utilities Service
US Department of Agriculture**

Docket No. 090309298-9229-01

**American Recovery and Reinvestment Act of 2009
Broadband Initiatives**

Joint request for information and notice of public meetings

Introduction

Section 6001 of the American Recovery and Reinvestment Act of 2009 (Recovery Act) requires the National Telecommunications and Information Administration (NTIA) to establish the Broadband Technology Opportunities Program (BTOP). The Recovery Act further establishes authority for the Rural Utilities Service (RUS) to make grants and loans for the development and construction of broadband systems.

On March 12, 2009, the NTIA and RUS requested from interested parties written guidance on a number of issues related to implementation of the Recovery Act. The comments contained herein are the University of Alaska's response to this request for guidance.

The University of Alaska, the state's only public system of higher education, has reviewed the draft comments from the State of Alaska and the Regulatory Commission of Alaska in response to this RFI and shares in the spirit of those comments. The University looks forward to working collectively with all public and private entities in Alaska in actively pursuing the purposes and goals of the broadband sections of the Recovery Act.

Background

Providing broadband service within the state of Alaska poses a unique set of challenges. Like other United States citizens, Alaskans need broadband to participate in the economic and civic life of the nation. But Alaska's size and scattered population present significant challenges.

Because of Alaska's great size, the state is highly dependent on telecommunications and network services for commerce, public safety, government services, education, and health. Alaska is far larger than any other state and has hundreds of small communities spread across its 656,425 square miles. Alaska is even larger than a block of 11 central US states: Michigan, Minnesota, Indiana, Illinois, Ohio, Kentucky, Wisconsin, Iowa, Missouri, Tennessee and Arkansas.

The more than 300 small and remote communities spread across Alaska's vast area suffer from high poverty rates and low levels of educational attainment. Reliable broadband service is an essential tool to help overcome these problems by expanding economic opportunity, improving health care delivery, extending modern government services, and improving the quality and quantity of educational opportunities.

In general, Alaska's villages have no road connections, no railroads, no pipelines of any kind, and no electrical interties. These communities do have basic telecommunication services (telephone, radio and television) due to a major effort to establish such services in the 1970s. But the villages are underserved by Internet services, and, only in rare cases, is service available that can reasonably be called broadband. Generally speaking, Internet service is not able to reliably support even audio streaming, and the network is inadequate to support a service to many rural communities as basic as video teleconferencing for the general public. Use of the State of Alaska's online services for renewing driver's licenses and hunting licenses is difficult because of the quality of the Internet service available in the villages.

Section 254(b)(3) of the 1996 Telecommunications Act says that telecommunications infrastructure should include all parts of the nation and that telecommunications services should be reasonably comparable for all Americans. Thus, it seems unfair to fund advanced broadband services in some parts of the United States when no broadband service exists in others.

Most of Alaska's small communities are connected to metropolitan areas solely through satellite links. Although, in the 1970s, satellite technology was found to be a cost-effective way to provide telephone service, satellite links are not well-suited to broadband service and do not constitute a high-speed backbone.

Throughout most of Alaska, the satellite "backbone" is a choke point for Internet traffic. Even if high-speed links are available within a small community, they do not really provide true broadband service because of the absence of a high-speed backbone. Even

though high-speed links may be available in the "last mile" within the community, the service provided to a consumer is limited by the choke point that is the satellite system.

Two obvious technologies to provide a high-speed backbone serving Alaska's villages are fiber-optic cable and terrestrial microwave. The expense of implementing such technologies is the reason that broadband service is generally not available in the rural areas of Alaska. The kind of telecommunications backbone that is taken for granted in the contiguous 48 states has not yet been constructed in Alaska.

While realization of broadband service for rural communities is not feasible using the current satellite backbone, building a terrestrial microwave or fiber-optic cable system requires a large one-time capital investment. Only such a modern backbone system can offer the promise of broadband service which is now commonplace in many parts of the United States.

One of the questions concerning implementation of the Recovery Act is the definition of the terms "broadband," "unserved" and "underserved." As explained above, under almost any modern definition of "broadband," many of Alaska's rural communities are unserved. Even if the broadband bar is set very low, most of these communities are either unserved or underserved.

Another question under discussion is whether Recovery Act funds should be used for last mile, middle mile or first mile systems. Since adequate systems of all three types are needed to provide broadband service, funds should be available for all three, as needed. In Alaska, for example, the "middle mile" backbone is one -- but not the only -- problem. It is appropriate to use at least some Recovery Act funds to address this problem.

Comments

The following comments respond directly to some of the questions posed in the joint request for information and notice of public meetings published on March 12, 2009. Each response begins with all or part of the question posed (*in italics*), followed by UA's response.

NTIA Questions

1. The Purposes of the Grant Program: Section 6001 of the Recovery Act establishes five purposes for the BTOP grant program.

- a. Should a certain percentage of grant funds be apportioned to each category?*
- b. Should applicants be encouraged to address more than one purpose?*
- c. How should the BTOP leverage or respond to the other broadband-related portions of the Recovery Act, including the United States Department of Agriculture (USDA) grants and loans program as well as the portions of the Recovery Act that address smart grids, health information technology, education, and transportation infrastructure?*

In response to this question:

Sec. 6001(b) of the Recovery Act states that the purposes of the program are to—

- (1) provide access to broadband service to consumers residing in unserved areas of the United States;
- (2) provide improved access to broadband service to consumers residing in underserved areas of the United States;
- (3) provide broadband education, awareness, training, access, equipment, and support to—
 - (A) schools, libraries, medical and healthcare providers, community colleges, and other institutions of higher education, and other community support organizations and entities to facilitate greater use of broadband service by or through these organizations;
 - (B) organizations and agencies that provide outreach, access, equipment, and support services to facilitate greater use of broadband service by low-income, unemployed, aged, and otherwise vulnerable populations; and
 - (C) job-creating strategic facilities located within a State-designated economic zone, Economic Development District designated by the Department of Commerce, Renewal Community or Empowerment Zone designated by the Department of Housing and Urban Development, or Enterprise Community designated by the Department of Agriculture;
- (4) improve access to, and use, of broadband service by public safety agencies; and
- (5) stimulate the demand for broadband, economic growth, and job creation.

Some of these five purposes are addressed in the Recovery Act by specific minimum dollar appropriations and accompanying language. For example, purpose 3 the Recovery Act is addressed through an appropriation of not less than \$250,000,000 to be made available "...for competitive grants for innovative programs to encourage sustainable adoption of broadband service." Further, the Recovery Act calls for an additional appropriation of not less than \$200,000,000 to be made available "...for competitive grants for expanding public computer center capacity, including at community colleges and public libraries." Leaving these specific purpose 3 dollar appropriations aside, UA's response to the remaining purposes of the NTIA program are discussed below.

With respect to purposes 4 and 5, the best way to further these purposes in Alaska and in the other 49 states is through the deployment and availability of broadband services. Thus, achieving purposes 4 and 5 will be accomplished through attainment of purposes 1 and 2, which are discussed below.

Purposes 1 and 2, providing broadband service to consumers residing in unserved areas and providing improved access to broadband service to consumers residing in underserved areas of the United States, are at the core of the broadband portion of the Recovery Act. Addressing these two purposes inherently also addresses other purposes.

There are many communities in Alaska that are, at worst, unserved and, at best, underserved. But most of these communities are, by any reasonable definition of “broadband,” unserved. The same is true in other parts of the United States.

The essential purposes of the broadband portion of the Recovery Act are best served by addressing the deployment of broadband services in, first, unserved areas of the United States and, second, underserved areas of the nation. Except for the specific appropriations described above, priority be given, first, to provision of broadband access to unserved areas, and, second, to provision of broadband access to underserved areas.

4. Establishing Selection Criteria for Grant Awards: The Recovery Act establishes several considerations for awarding grants under the BTOP. In addition to these considerations, NTIA may consider other priorities in selecting competitive grants.

- a. What factors should NTIA consider in establishing selection criteria for grant awards? How can NTIA determine that a Federal funding need exists and that private investment is not displaced? How should the long-term feasibility of the investment be judged?*
- b. What should the weighting of these criteria be in determining consideration for grant and loan awards?*
- c. How should the BTOP prioritize proposals that serve underserved or unserved areas? Should the BTOP consider USDA broadband grant awards and loans in establishing these priorities?*
- d. Should priority be given to proposals that leverage other Recovery Act projects?*
- e. Should priority be given to proposals that address several purposes, serve several of the populations identified in the Recovery Act, or provide service to different types of areas?*
- f. What factors should be given priority in determining whether proposals will encourage sustainable adoption of broadband service?*
- g. Should the fact that different technologies can provide different service characteristics, such as speed and use of dedicated or shared links, be considered given the statute’s direction that, to the extent practicable, the purposes of the statute should be promoted in a technologically neutral fashion?*
- h. What role, if any, should retail price play in the grant program?*

In public comments made at the recent series of six public meetings arranged by NTIA and RUS, there was a great deal of discussion about the use of selection criteria in the following seven areas:

- Job creation (anywhere from 20-50% of total): both for construction and ongoing economic development
- Timeliness of construction
- Sustainability (e.g. sound business case, proven ability to build and operate networks, upgrade and maintenance plans, ability to leverage current resources, etc.)

- Public interest including state government endorsement or partnership (e.g. service to anchor tenants i.e. hospitals, schools, libraries, community and senior centers, service to the disabled, public safety)
- Affordability: commitment to offering affordable rates
- Speed
- Commitment to provide ongoing network data for government mapping and research purposes

With respect to question 4a and its applicability to Alaska, many years have gone by with the private sector unable to provide a high-speed broadband backbone in Alaska due to its extreme geographical scale and the unusual dispersion of its rural population in hundreds of remote and isolated villages. The problem has been the high initial cost of constructing such a system. Thus, it is clear that the use of federal funding for this purpose would not displace private investment. Rather, it would create a system which the private sector would be willing and able to operate and maintain, at its own expense, after its construction with the use of federal funds.

The selection criteria mentioned in the question and in the public comments are important. However, because some parts of the nation are unserved, providing broadband service first to unserved areas and second to underserved areas is paramount. (See question 4c.) However, the issues of retail price (question 4h) and affordability (fifth on the list of the selection criteria discussed in public meetings) are closely related to service to unserved and underserved areas. Broadband availability is clearly not helpful if the service is not affordable.

6. Grants for Expanding Public Computer Center Capacity: The Recovery Act directs that not less than \$200,000,000 of the BTOP shall be awarded for grants that expand public computer center capacity, including at community colleges and public libraries.

- a. What selection criteria should be applied to ensure the success of this aspect of the program?*
- b. What additional institutions other than community colleges and public libraries should be considered as eligible recipients under this program?*

Alaska's postsecondary education system is structured differently than in some other states. After the oil crisis in 1986, its community colleges were reorganized and largely absorbed into the University of Alaska as rural campuses. Today, Alaska has only one community college, but a dozen rural UA campuses are located in communities with populations of less than 20,000.. Alaska also has other stand-alone institutions, for example, vocational training centers around the state.

In consideration of Alaska's situation and similar situations that may exist in other states, the grant requirements and guidelines should be worded in a way that allows grants for expanding public computer center capacity to be made to any public, postsecondary institution or branch campus located in an unserved or underserved area. Section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001) contains a definition of community college that may be useful.

13. *Definitions: The Conference Report on the Recovery Act states that NTIA should consult with the FCC on defining the terms “unserved area,” “underserved area,” and “broadband.” The Recovery Act also requires that NTIA shall, in coordination with the FCC, publish nondiscrimination and network interconnection obligations that shall be contractual conditions of grant awards, including, at a minimum, adherence to the principles contained in the FCC’s broadband policy statement (FCC 05-15, adopted August 5, 2005).*

- a. *For purposes of the BTOP, how should NTIA, in consultation with the FCC, define the terms “unserved area” and “underserved area?”*
- b. *How should the BTOP define “broadband service?”*
 - (1) *Should the BTOP establish threshold transmission speeds for purposes of analyzing whether an area is “unserved” or “underserved” and prioritizing grant awards? Should thresholds be rigid or flexible?*
 - (2) *Should the BTOP establish different threshold speeds for different technology platforms?*
 - (3) *What should any such threshold speed(s) be, and how should they be measured and evaluated (e.g., advertised speed, average speed, typical speed, maximum speed)?*
 - (4) *Should the threshold speeds be symmetrical or asymmetrical?*
 - (5) *How should the BTOP consider the impacts of the use of shared facilities by service providers and of network congestion?*
- c. *How should the BTOP define the nondiscrimination and network interconnection obligations that will be contractual conditions of grants awarded under Section 6001?*
 - (1) *In defining nondiscrimination obligations, what elements of network management techniques to be used by grantees, if any, should be described and permitted as a condition of any grant?*
 - (2) *Should the network interconnection obligation be based on existing statutory schemes? If not, what should the interconnection obligation be?*
 - (3) *Should there be different nondiscrimination and network interconnection standards for different technology platforms?*
 - (4) *Should failure to abide by whatever obligations are established result in deobligation of fund awards?*
 - (5) *In the case of infrastructure paid for in whole or part by grant funds, should the obligations extend beyond the life of the grant and attach for the useable life of the infrastructure?*
- d. *Are there other terms in this section of the Recovery Act, such as “community anchor institutions,” that NTIA should define to ensure the success of the grant program? If so, what are those terms and how should those terms be defined, given the stated purposes of the Recovery Act?*
- e. *What role, if any, should retail price play in these definitions?*

The definitions of "unserved area" and "underserved area" should depend on the definition of "broadband." For example, if an area has no access to broadband service, as it is defined, then this area will be considered unserved. If an area has only limited

access to broadband service, as it is defined, then this area may be considered underserved.

If broadband service is defined as service exceeding a speed of only a few hundred kilobits per second, then most of the communities in Alaska, as well as many other areas of the United States, will be considered unserved. Such areas deserve the highest priority in selecting projects that will receive funding. It seems hard to justify using Recovery Act funds to enhance broadband services in some parts of the nation if it means that other parts of the nation will continue to be completely unserved by such service.

RUS Questions

2. In what ways can RUS and NTIA best align their Recovery Act broadband activities to make the most efficient and effective use of the Recovery Act broadband funds?

In the Recovery Act, Congress provided funding and authorities to both RUS and the NTIA to expand the development of broadband throughout the country. Taking into account the authorities and limitations provided in the Recovery Act, RUS is looking for suggestions as to how both agencies can conduct their Recovery Act broadband activities so as to foster effective broadband development. For instance:

a) RUS is charged with ensuring that 75 percent of the area is rural and without sufficient access needed for economic development. How should this definition be reconciled with the NTIA definitions of “unserved” and “underserved?”

b) How should the agencies structure their eligibility requirements and other programmatic elements to ensure that applicants that desire to seek funding from both agencies (i) do not receive duplicate resources and (ii) are not hampered in their ability to apply for funds from both agencies?

Whichever definition of "rural" is chosen by the RUS, the definition should not exclude regions like those in which Alaska's small communities are located. A definition that depends on measures like population density or homes per route mile may not be reflective of areas that are truly rural. For example, rural Alaska has many communities that are widely scattered, but the density within each community is higher. These small communities, with populations ranging from 25 to a few thousand, are widely scattered and should certainly be considered rural. Communities like these are in need of broadband service and are an important target for broadband funds. The same situation may exist in other parts of the United States.