

**Before the
Department of Commerce National Telecommunications And Information Administration
and the
Department of Agriculture Rural Utility Service
Washington, D.C. 20230**

In the Matter of)	
)	
Implementation of Section 6001 of the American Recovery and Reinvestment Act of 2009)	
)	
Implementation of Title I of the American Recovery and Reinvestment Act of 2009)	Docket No. 090309298-9299-01

COMMENTS OF FREE PRESS

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EXECUTIVE SUMMARY

- The American Recovery and Re-Investment Act (“ARRA” or “Stimulus Act”) does not mandate specific speed requirements, but directs the NTIA to promote projects that will “provide the greatest broadband speed possible.” To ensure this outcome, the NTIA should:
 - Establish speed guidelines for broadband deployment grants -- modeled after those contained in the original House stimulus legislation -- to provide benchmarks to help the agency prioritize grant applications. No applications with real-world achieved downstream or upstream speeds below 200kbps should qualify for BTOP or RUS funds.
 - Require grant applicants to state the minimum and average speeds their networks will be able to deliver to end-users under a variety of real-world situations.
 - Require grant applicants to describe the contention ratios of their proposed networks, any network management techniques they intend to use, and how these techniques may impact the end-user experience.
- The central purpose of the BTOP grants is to fund deployment of broadband to “unserved” and “underserved” areas. To enable the NTIA and states to better prioritize grant applications and ensure fair allocation amongst states, the NTIA should:
 - Work with the FCC to adopt definitions of “unserved” and “underserved” areas that are based on U.S. Census Bureau geographic boundaries and are informed by new Commission Form 477 data.
 - Establish a three-tier definition for “unserved area” that includes “completely unserved areas,” “severely unserved areas,” and “moderately unserved areas.”
 - Define “underserved area” as one where service is widely available, but no provider offers service capable of delivering downstream data at transmission speeds exceeding 3Mbps; or those low-income areas as defined under several existing federal programs.
- The Stimulus Act requires grant applicants to show the NTIA that their proposed project would not have been implemented during the grant period without federal assistance – a crucial provision for ensuring efficient use of broadband stimulus funds. We urge the NTIA require that applicants provide a signed affidavit with supporting evidence that this requirement is met, and (if appropriate) certify that the area covered by the project is indeed an underserved or unserved area.
- The NTIA should require all grant applicants to disclose how they expect the grant funds and the resulting taxpayer -funded network will impact their future need for support from the Universal Service Fund. NTIA should prioritize applications for projects that will reduce the future burden on the USF.
- NTIA instead focus Broadband Data Improvement Act grants on projects that work to stimulate broadband demand, with requirements for achievement benchmarks and focused program evaluation studies. Mapping should only be a secondary concern.
- In these comments we suggest a mathematical system for scoring infrastructure deployment grant applications. This system is based on the following five unique criteria categories (with each corresponding importance weight): Affordability and Adoption (25%); Speed (25%); Civics (20%); Efficiency (15%); and Job Creation (15%)

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INTRODUCTION

The Stimulus Act appropriates a total of \$7.2 billion for various programs related to broadband deployment and adoption.¹ Specifically, the Act appropriates \$2.5 billion to the U.S. Department of Agriculture's Rural Utilities Services broadband loan and grant programs, and directs \$4.7 billion to the National Telecommunications and Information Administration for the establishment of the Broadband Technology Opportunities Program (BTOP). From the \$4.7 billion allocated to the NTIA, \$350 million is to be used to implement Public Law 110-385, the Broadband Data Improvement Act.² The NTIA is also directed to allocate at least \$200 million of the remaining \$4.35 billion to expand computer center capacity in various institutions of higher learning and other community centers, and make a minimum of \$250 million in grants aimed at encouraging sustainable adoption of broadband services.

The overarching goal of the American Recovery and Reinvestment Act is to stimulate the economy and create jobs primarily through the temporary Federal funding of various projects and programs, including infrastructure deployment. The President and Congress believe strongly that funding broadband deployment and adoption will create substantial short and long-term economic stimulus, by creating the new jobs needed to implement new construction and training programs, and through the multiplier and network effects that will result from the availability of the new IT-based economic infrastructure.

The Broadband Technology Opportunities Program

The core purpose of the NTIA's BTOP program is to provide grants for the deployment of broadband services and infrastructure in currently unserved and underserved areas (it should be noted that the Act explicitly avoids defining the terms "broadband", "unserved" and "underserved"). However, deployment is not the only focus of BTOP. The Act also envisions grants being made to organizations "to facilitate greater use of broadband service by low-income, unemployed, aged, and otherwise vulnerable populations." This is a very broad category that could include programs that provide computer training at community centers in low-income neighborhoods, or projects that provide low-cost wireless Internet service in Section 8 housing developments.

The Stimulus Act also appropriates \$350 million for NTIA to implement the Broadband Data Improvement Act, legislation enacted by Congress in 2008. The bulk of this funding will be awarded by NTIA to states or state-designated entities (including non-profits) for the purpose of inventorying and mapping broadband deployment, and administering programs that will aggregate and stimulate demand for broadband service. Funds will also be available to the Small Business Administration to conduct a survey of business use of broadband. The Broadband Data Improvement Act grew out of frustration with the FCC's data collection efforts, and the perceived (yet unproven) success of state-based programs like that of ConnectKentucky.³

¹ American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5 (2009).

² Broadband Data Improvement Act, Pub. L. No. 110-385 (2008).

³ Reply Comments of Free Press, et al., *Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscriberhip Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscriberhip*, WC Docket No. 07-38, Aug. 1, 2008, pp. 16-26.

However, the FCC has since made substantial improvements to their broadband data collection program, and further changes are expected this year.⁴ These changes call into question the need for such a large sum of funds for mapping efforts. We suggest that NTIA should instead focus these grants on projects that work to stimulate broadband demand, with requirements for achievement benchmarks and proper program evaluation studies. The latter will help inform how to best allocate future grants to programs that produce tangible positive results.

The Rural Utilities Service Broadband Loan and Grant Programs

The Stimulus Act also appropriates \$2.5 billion to the USDA's RUS broadband loan and grant programs. The RUS was established to fund the deployment of utility services to rural farms, but has since been expanded to include support for construction of broadband services in rural areas.⁵ The program has an annual appropriation of nearly \$20 million, with approximately \$13 million dedicated to the Community Connect Grant program, and \$7 million directed to subsidizing low-interest loan and loan guarantees for broadband buildout. Both the RUS grant and loan programs are intended to target deployment projects to rural areas that lack broadband service. However, to date, nearly 45 percent of the RUS funds have been used to support projects deploying broadband service to areas that are already served by two or more providers.⁶ Accusations of waste, fraud and abuse have plagued the program, and the RUS itself has been criticized for moving too slowly.⁷ This critique is rooted in the fact that the program has never allocated the entirety of its annual appropriation.

Given these problems and the current need to expedite the allocation of the stimulus funds in a responsible manner, it is somewhat perplexing that the USDA was chosen to administer any of the broadband funds. However, while the Senate's version of the legislation⁸ appropriated no broadband money to the USDA, the House gave the agency control over half of the funds.⁹ In the end the conference committee split the difference, with the RUS getting control of about one-third of the total dollars for broadband stimulus. Defenders of the RUS state that the Farm Act of 2008 addressed the program's problems, and that they are prepared to responsibly oversee the distribution of stimulus funds.¹⁰

⁴ See *Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership*, WC Docket No. 07-38, Report and Order and Further Notice of Proposed Rulemaking, 23 FCC Rcd 9691, 2708; Order on Reconsideration, 23 FCC Rcd 9800 (2008).

⁵ 7 C.F.R. §§ 1735-1739

⁶ "USDA Rural Development: Bringing Broadband to Rural America", USDA, June 2007, available at <http://www.rurdev.usda.gov/rd/pubs/RDBroadbandRpt.pdf>.

⁷ Cecilia Kang, "Broadband Program Oversight Questioned," Washington Post, Feb. 12, 2009, available at <http://www.washingtonpost.com/wp-dyn/content/article/2009/02/11/AR2009021103832.html>.

⁸ S.AMDT.98 (amends H.R.1), 111th Congress, 1st Sess. (2009).

⁹ American Recovery and Reinvestment Act of 2009, H.R. 1, 111th Congress, 1st Sess. (2009).

¹⁰ *Supra* note 7.

RECOMMENDATIONS ON DEFINING AND IDENTIFYING TARGET POPULATIONS

The Broadband Technology Opportunities Program

The NTIA's BTOP program has no specific geographic requirements, though a central purpose of the BTOP grants is to fund deployment of broadband to "unserved" and "underserved" areas. While these terms are not defined in the Stimulus Act, provisions in the original Senate legislation did. In Section 48 of S.AMDT.98, "unserved area" was defined as census tracts "in which no current generation broadband services are provided", with current generation services defined as 5Mbps downstream/1Mbps upstream on wireline infrastructure, and 3Mbps downstream /0.768Mbps upstream on wireless infrastructure.

This section of the Senate legislation defined "underserved area" based not on the level of broadband service in a given area, but on the income status of a given Census Tract, such as empowerment zones, enterprise communities, renewal communities, or section 45D low-income communities. Using the income of an area as the basis for an "underserved" definition is common in markets such as health care, but is perhaps less fitting for infrastructure-based services like broadband. In telecommunications policy circles, "underserved" usually refers to the quality of service deployed. For example, a single broadband provider, who only offers 512kbps service, may serve an area. This level of service is far below that of what is commonly available in most areas of the country, and thus such an area would be considered "underserved."

Because the final Stimulus Act did not define the terms "unserved" and "underserved" the NTIA and FCC have wide latitude in interpreting the language of the Act. We suggest that for the purposes of the BTOP program, these terms be defined as followed: "Unserved area" should be defined in three stages. "Completely unserved areas" are those Census Blocks (CBs), Census Block Groups (CBGs) or Census Tracts (CTs) where terrestrial non-dial-up Internet access service is only available to less than 10 percent of the occupied residential premises.¹¹ "Severely unserved areas" are those CBs, CBGs or CTs where terrestrial non-dial-up Internet access service is available to more than 10 percent of homes, but less than 50 percent of homes. "Moderately unserved areas" are those CBs, CBGs or CTs where non-dial-up terrestrial Internet service is available to more than 50 percent of homes, but less than 90 percent of homes. "Underserved" areas are those CBs, CBGs or CTs where terrestrial non-dial-up Internet access service is considered available, but where the level of service is below 3Mbps in the downstream direction. "Underserved persons" are those who live in an underserved areas as defined above, or reside in a low-income community designated under Section 45D, an empowerment zone or enterprise community designated under Section 1391, the DC enterprise zone, or a renewal community designated under section 1400E.

These definitions will enable NTIA to effectively target grants to both areas that lack adequate broadband deployment, and low-income areas where broadband deployment may exceed the standard definition of "underserved", but whose population is likely to adopt broadband at a rate far lower than the general population.

To facilitate applicants and the States in determining which areas are likely to qualify under the above unserved and underserved definitions, the FCC should use the new Form 477 broadband

¹¹ U.S. Census Bureau, "Census 2000 Geographic Definitions," July 27, 2001, available at http://www.census.gov/geo/www/geo_defn.html.

data (reported as of March 16th 2009) to produce and publish lists of Census Tracts that are likely to be unserved or underserved areas. Because this information is only a proxy for actual availability information, a grant applicant, in an affidavit accompanying the grant application, should attest to an area's status.

The Rural Utilities Service Broadband Loan and Grant Programs

The \$2.5 billion allocated to the RUS broadband grant and loan programs must be used to fund projects where at least 75 percent of the area to be served is a rural area "without sufficient access to high speed broadband service to facilitate rural economic development." The Stimulus Act directs the Secretary of Agriculture to determine where these areas are, but provides no detail on how that process would take place. It is possible that the RUS could rely on FCC data, along with state and applicant self-certification that a project meets this geographic requirement. The FCC's new broadband data will allow for the identification of Census Tracts that likely are unserved, however in rural areas the geographic scope of Census Tracts is often quite large. This means that the FCC data will at most serve as a first-step guide for identifying the rural areas to target. In these instances, the RUS should require applicants to sign affidavits that affirm the proposed project area comports with the requirements of the Stimulus Act.

RECOMMENDATIONS ON APPLICANT AND PROJECT ELIGIBILITY

The Broadband Technology Opportunities Program

The BTOP program is open to any State or political subdivision thereof (including DC, territories and possessions, and Indian tribes), non-profits, and current broadband service or infrastructure providers.

The Stimulus Act directs the NTIA when establishing eligibility rules to "promote the purposes of [the BTOP program] in a technologically neutral manner." While some may view this as language that implies *any* non-dial up Internet technology as being eligible to receive grant funds, it does not mean that the NTIA is to award grants based on a lowest-common-denominator standard. A central purpose of the BTOP program is to fund deployment of broadband technologies that offer the "greatest speed possible." If the NTIA establishes speed guidelines that some specific technologies are not able to meet, this would not be a violation of "technological neutrality." Instead, the establishment and use of such speed guidelines will carry out the law's directive to promote the deployment of a certain level of service in a technologically neutral manner. It is important that the NTIA recognize this distinction and not become trapped by certain provider's semantic games.

Grant applicants must make a "showing that the project would not have been implemented during the grant period without Federal grant assistance." This provision is key to ensuring the maximum level of economic stimulus is achieved, and that scarce resources are well targeted. To implement this provision, we suggest that NTIA require an exhaustive list of documentation from applicants in order to make this showing, including public statements, private correspondence and detailed capital expenditure plans that may have not been previously publicly disclosed. The NTIA should protect the confidentiality of such information where appropriate.

Also, under the BTOP program, the Federal share of project may not exceed 80 percent without a waiver from the NTIA. The Assistant Secretary of Commerce may grant a waiver if he/she determines that “the petition demonstrates financial need.” It is unclear what such a demonstration would entail. While matches are important because they require a grantee to incur some of a project’s risk, in some instances it is possible that the financial cost of capital that will be required to make the 20 percent match may make some rural deployment projects that would have otherwise been profitable, unprofitable. The NTIA should take such situations into account when determining the practical effects of a match requirement.

It is important to note that the NTIA has wide latitude in deciding the types of programs that can receive BTOP funds. While deployment projects are a core focus of the program, so too are programs that facilitate adoption of broadband in low-income communities. Subsidizing communications services in low-income households is not a new concept. The FCC’s Lifeline/Linkup program currently provides \$800 million per year in support for low-income households to lower the cost of basic local telephone service. Last fall the Commission published a proposal that would test the expansion of this program support broadband adoption in low-income households. While this specific proposal contained some flaws, the underlying idea certainly has merit, and fits well within the overall goals of the BTOP program.

We therefore suggest that the Commission, along with the Universal Service Administration Corporation (USAC) request a grant of \$300 million from BTOP that would be used to implement a “Broadband Lifeline/Linkup Pilot Program.” This one-year pilot program would provide participating households earning less than \$25,000 annually a \$15 per month subsidy for broadband access and a one time \$150 subsidy for the purchase of an Internet access device. We estimate that a \$300 million pilot fund would increase the low-income broadband household penetration rate from 24 percent, to 27 percent. This corresponds to support for nearly 1.4 million low-income homes, adding over 800,000 net new low-income broadband homes, at a cost of approximately \$370 per new home added.

The Rural Utilities Service Broadband Loan and Grant Programs

Eligibility for participation in the RUS broadband grant and loan programs is much more constrained than it is for BTOP. The Stimulus Act specifically directs the RUS to give priority to project applications that are “from borrowers or former borrowers under title II of the Rural Electrification Act of 1936.” This provision heavily weights the RUS award process in the favor of small rural telephone companies. Further, while the 2008 Farm Bill made changes that disfavored larger companies, it is unclear under existing regulations if larger companies will be able to qualify for awards valued larger than \$3.75 million.¹² Given that the larger companies have the poorest track record on broadband deployment, clarification of their eligibility to receive stimulus funds is critical.

Prior to the enactment of the 2008 Farm Bill, RUS rules restricted the eligibility of state and local governments to participate in the loan program. State or local government were only

¹² Prior to the enactment of the 2008 Farm Bill, RUS funds were only available to companies that serve less than 2 percent of the nation’s telephone lines. Under the new law, any entity that provides telecommunications or broadband to at least 20 percent of U.S. households is prohibited from receiving more than \$3.75 million per year in funds (15% of the total annual appropriation for the RUS broadband program, set by the Farm Bill at \$25 million for each fiscal year 2008 through 2012).

eligible for a broadband loan if no other eligible entity was already offering or had committed to offer broadband services to the community.¹³ There was no similar prohibition against overbuilding placed on non-municipal borrowers. Given this change in policy, we suggest that the RUS affirm that no such restrictions will be placed on State and local government eligibility for new stimulus funds.

The RUS broadband grant program specifically forbids grantees from offering telephone services over their grant funded broadband facilities if a customer is already receiving such service from a local telephone company.¹⁴ In practice this means those areas where a new entrant is willing to offer grant-funded broadband service, the new entrant will not be able to offer services as a part of a “triple play” bundle (phone, Internet, TV). In many cases, this will cripple the new entrant’s business case for deployment, and will leave an area without any broadband services.

RUS grantees are also prohibited from using grant monies for deploying their own broadband transport facilities.¹⁵ This restriction means that a non-teleco incumbent grantee will be forced to purchase unregulated monopoly broadband transport services (i.e. service that carries their customer’s Internet traffic back and forth from the Internet backbone) from an teleco provider, which again completely undermines the business case for broadband deployment. Small cable operators for example will in theory be able to offer fast broadband services over their cable plant, but forced to rely on the potentially outdated and slow transport service offered by the local teleco incumbent.

Such restrictions greatly hinder the RUS’s ability to meet the goals of the Stimulus Act. We strongly suggest that the USDA revisit and revise these regulatory roadblocks.

RECOMMENDATIONS ON PRIORITIZING APPLICATIONS

The Broadband Technology Opportunities Program

Under the BTOP program, the NTIA must award a minimum of one grant per state. When awarding deployment grants, the NTIA must, “to the extent practical”, give consideration to applications that can demonstrate a variety of factors. Such factors include if a deployment project will increase the affordability of, and subscribership to broadband. NTIA is also to give consideration to project applications submitted by “socially and economically disadvantaged businesses”

Consideration is also given to projects that will provide "greatest broadband speed possible to the greatest population of users." Of all the considerations, we believe Congress intended NTIA to pay special attention to this particular goal. Though specific speed requirements were in the House legislation, the Senate opted not to do the same. This was likely due to the Senate’s belief that speed requirements might result in some areas remaining unserved. However, this should not be construed to mean that the Senate has no desire to see robust speeds deployed with BTOP grants. In the statement accompanying the final compromise bill, the conferees stated:

¹³ 7 C.F.R. § 1738.16(b). The 2008 Farm Bill did explicitly state that States and local governments are eligible to participate in the loan program, and removed the clause about other entities offering service (Pub. L. 110-246; 7 U.S.C. § 950bb (d)(4)).

¹⁴ 7 C.F.R. § 1739.13(b).

¹⁵ 7 C.F.R. § 1739.13(a).

“While the House bill had included specific speed thresholds that an applicant must have met to be eligible for a grant, the substitute requires only that the NTIA consider the speeds that would be delivered to consumers in awarding grants. The Conferees are mindful that a specific speed threshold could have the unintended result of thwarting broadband deployment in certain areas. The Conferees are also mindful that the construction of broadband facilities capable of delivering next-generation broadband speeds is likely to result in greater job creation and job preservation than projects centered on current-generation broadband speeds. Therefore, the Conferees instruct the NTIA to seek to fund, to the extent practicable, projects that provide the highest possible, *next-generation* broadband speeds to consumers” (emphasis added).¹⁶

Through this statement, the language in the House bill and in the tax credit provision of the Senate bill, and the final act itself, we see a clear Congressional intent to fund deployment of next-generation broadband services. Thus we think it is perfectly consistent with the law for NTIA to establish speed *guidelines* for BTOP applications, and that these guidelines should track closely with those proposed in the House legislation. Applicants would be encouraged to meet or exceed the speed guidelines, but would not be foreclosed from receiving grant funds if they are unable to meet these thresholds, and no other applicant could for a particular area.

Furthermore, the conferee’s made it clear that they were also concerned about actual and not just advertised broadband speeds. In their statement, the conferees told the NTIA “to consider the actual speeds that broadband networks are able to deliver to consumers under a variety of circumstances.” We therefore urge the NTIA to require grant applicants to state the minimum and average speeds their networks will be able to deliver to end users under a variety of real-world situations. Grant applicants should also describe the contention ratios of their proposed networks, and any network management techniques they intend to use, and how these techniques may impact the end-user experience.

The NTIA is also to consider whether a awarding a grant to a project will "result in unjust enrichment as a result of support for non-recurring costs through another Federal program for service in the area." This provision is likely a counterpart to the language in the RUS section of the legislation that prevents a project from receiving both an award from RUS and BTOP. However, we suggest that this provision is also particularly important given that grants will be awarded to fund infrastructure that will in many cases be in so-called “High Cost” areas, where providers are eligible for ongoing support from the Universal Service Fund (USF). Currently most rural Eligible Telecommunications Carriers are supported based on their historical costs -- that is they earn a mandated 11.25 percent rate of return on their historical cost of their network investment. But what if a rural carrier uses grant funds to deploy fiber optics to the customer premise, then use that infrastructure to offer both Internet and local exchange telephone service? It is possible that the provider will, under current USF accounting rules, be able to earn an 11.25 percent rate of return on the “historical cost” of that network, even though that cost was paid for with grant funds, and not by the carrier. The prospect of double-dipping into subsidies from tax payers *and* rate payers is troubling.

We believe this situation, as well as the “unjust enriching” clause, get to the heart of the need for comprehensive USF reform. Under the current model, carriers receive ongoing USF support for

¹⁶ H.Rept. 111-16, 111th Congress, 1st Sess. (2009).

local telephone service -- a service that is heavily price regulated and one that only brings in small per-customer revenues. This along with so-called “carrier of last resort obligations” necessitates ongoing universal service support for carriers operating in high-cost areas. But that is now an outdated regulatory model. Today’s technology enables a provider to offer phone, cable TV and broadband Internet over the same infrastructure. This means that carriers can earn far more revenues per customer, lowering or completely eliminating the need for ongoing USF support. This is especially the case if the high upfront costs of broadband network deployment are paid for out of USF or stimulus funds.

We therefore strongly urge the NTIA to direct applicants to address how the grants will impact their future need for universal service support. If there are competing applications, priority should be given to those that place no or little future burden on the USF. We also urge the FCC to immediately open a proceeding that examines these issues in the context of broader USF modernization reform.

The Rural Utilities Service Broadband Loan and Grant Programs

Under current RUS rules, grant applications are prioritized on three general dimensions: the “rurality” of the project, the economic need of the project’s service area, and the “community-oriented connectivity” benefits derived from the proposed service.¹⁷

The Stimulus Act further requires that the RUS give priority to applications for “broadband systems that will deliver end users a choice of more than one service provider.” Priority is also to be given to “projects that provide service to the highest proportion of rural residents that do not have access to broadband service.” At first glance, these two priorities appear to be in direct conflict. If a project will result in an end user having service from more than a single provider, then that service by definition will be provided to residents that already have access to broadband service. If we assume that Congress did not intend to saddle RUS with such conflicting priorities, we must assume that the first provision directs the agency to prioritize applications that will deploy broadband services that are sold on a wholesale basis to multiple retail providers.

We urge the RUS to clarify its interpretation of this clause. We suggest that they agency prioritize applications that will either be run as wholesale-only, or that will provide reasonable and non-discriminatory wholesale access, UNE, and line-sharing.

Specific Recommendations on Grant-Award Criteria

To translate these various purposes, concerns and considerations into a mathematical system for scoring infrastructure deployment grant applications, we grouped the above items into five unique categories, and assigned importance weights to each (for a total sum of 100 percent):

1. Affordability and Adoption - 25%
2. Speed - 25%
3. Civics - 20%
4. Efficiency - 15%
5. Job Creation - 15%

¹⁷ 7 C.F.R. § 1739.17.

In these comments we do not propose a system for applications for projects that are non-deployment based, but do suggest that those applications be considered separately from infrastructure deployment projects.

We suggest the following outcome measures for each of these five criteria categories:

- Affordability & Adoption (25 total possible points)
 - Monthly Cost (15 possible points): To encourage grantees to operate networks that are generally affordable, we suggest a mechanism that measures the monthly retail service cost as a percentage of an area’s median household income. If this is above the national average of 0.7 percent of an area’s median household’s annual income (calculated assuming an average broadband subscription cost of \$30 per month per household, and an average median household income of \$51,000), then no points are awarded. If this is below 0.7 percent, points are awarded as follows (note that the values in the third column are for reference purposes only, as the actual price figures will be entirely dependent on the area in question’s median household income):

Figure 1: Point Allocation based on Service Cost

Service Price to Area's Median Household Income Ratio	Points Awarded (Out of a Possible 15)	Comparative Monthly Price (for national average)
Less than 0.35%	15	Less than \$15/mo.
Greater than or equal to 0.35% but Less than 0.6%	10	Between \$15 and \$25
Greater than or equal to 0.6% but Less than 0.7%	5	Between \$25 and \$30
Greater than or equal to 0.7%	0	Greater than \$30

- Competition (10 possible points): To promote and ensure that end-users are able to reap the benefits of efficient competition; and to quantify the priority given to projects that result in end-users having access to more than one provider (outlined by Congress for RUS awards), we establish a point award for networks that will be operated on a wholesale (non-open access) or wholesale (open-access) basis. If the project is completely wholesale, with more than one retail provider identified in the application, 5 points will be awarded. If such a project is also operated on a non-discriminatory open access basis (i.e. all wholesale terms and conditions are made publicly available), 5 additional points will be awarded. If the project is partially wholesale (i.e. the operator is both a retail and wholesale provider) and more than one retail provider is identified in the application, 3 points will be awarded. If such a project is also operated on a non-discriminatory open access basis (i.e. all wholesale terms and conditions are made publicly available), 5 additional points will be awarded.

- Speed (25 total possible points)
 - Downstream and Upstream Speed (20 possible points): To encourage the construction of networks that are reasonable comparable to those available in urban areas, we construct a point award system that awards higher levels of points for faster services. For example, if a service has a total speed (upstream plus downstream) of less than 1Mbps, no points are awarded, while a service with a total speed greater than 100Mbps receives the full 20 points (as an aside, we recommend that all services must have upstream speeds greater than 200kbps in order to be considered for BTOP awards).
 - Symmetry of Speeds (possible deduction of points): To encourage the deployment of two-way broadband *communications* networks, we propose a deduction of points for networks that are highly asymmetric. For example, a network that is 50Mbps in both the downstream and upstream direction will receive 20 points, and no asymmetry deduction. But a network that is 7Mbps in the downstream and 0.896Mbps in the upstream will receive 8 points, then a 1.44-point deduction (an 18% deduction from the 8 points; see Figure 2 below).
 - Contention Ratios (5 possible points): To encourage the deployment of networks that can reasonably deliver advertised speeds, we propose a point award for networks that are not oversubscribed, as measured by last-mile contention ratios (from the first point of aggregation to the end user). So for example, a network that offers 16Mbps service to 125 users over a single 38.8Mbps DOCSIS channel will have a contention ratio of 51.5 ($16 \times 125 = 2000 / 38.8 = 51.5$). This network would receive zero out of a total of 5 contention ratio points. In contrast, a network that offers 50Mbps service over a 2.5Gbps GPON fiber network to 32 homes would have a contention ratio less than 1, and thus receive the full 5 contention points.

Figure 2: Point Allocation based on Speed

Speed (sum of downstream and upstream)	Points	Downstream: Upstream Ratio	Deduction (from gross)	Contention Ratio	Contention Points
Less than 1Mbps	0	1:1	0%	1:1	5
Greater than or equal to 1Mbps but Less than 3Mbps	2	2:1	3%	20:1	4
Greater than or equal to 3Mbps but Less than 6Mbps	5	3:1	6%	30:1	3
Greater than or equal to 6Mbps but Less than 10Mbps	8	4:1	9%	40:1	2
Greater than or equal to 10Mbps but Less than 15Mbps	10	5:1	12%	50:1	1
Greater than or equal to 15Mbps but Less than 20Mbps	12	6:1	15%	>50:1	0
Greater than or equal to 20Mbps but Less than 30Mbps	14	7:1	18%		
Greater than or equal to 30Mbps but Less than 50Mbps	16	8:1	21%		
Greater than or equal to 50Mbps but Less than 100Mbps	18	9:1	24%		
Greater than or equal to 100Mbps	20	10:1	27%		
		>10:1	30%		

To illustrate how this would work in practice, we provide 11 hypothetical networks below with varying speeds and contention ratios. Figure 3 below shows these, sorted in descending order by networks receiving higher total speed points. Here we see that a 50/50Mbps symmetrical GPON network would receive the total 25 points, while a standard residential DSL network providing 3Mbps downstream / 256kbps upstream with a 50:1 contention ratio would receive 5.2 out of the total 25 points.

Figure 3: Hypothetical Examples of Point Allocation based on Speed

Downstream Speed	Upstream Speed	Down:Up Ratio	Contention Ratio	gross points	Assymetry Deduction	net points	Contention Points	Final Points
50	50	1.0	1:1	20	0.00	20	5	25
50	20	2.5	1:1	18	0.54	17.46	5	22.46
10	10	1.0	20:1	14	0.00	14	4	18
20	5	4.0	1:1	14	1.26	12.74	5	17.74
10	2	5.0	100:1	12	1.44	10.56	0	10.56
16	2	8.0	80:1	12	2.52	9.48	0	9.48
18	0.896	20.1	50:1	12	3.60	8.4	1	9.4
7	0.896	7.8	50:1	8	1.44	6.56	1	7.56
8	1	8.0	80:1	8	1.68	6.32	0	6.32
3	0.256	11.7	50:1	6	1.80	4.2	1	5.2
1	0.256	3.9	100:1	4	0.24	3.76	0	3.76

- Civics (20 possible points)
 - Public Safety Improvements (5 possible points): To encourage network providers to also incorporate public safety concerns, we suggest a subjective award of up to 5 points for projects that increase the use of interoperable broadband by public safety agencies.
 - Socially and Economically Disadvantaged Small Business Concern (5 possible points): To take into consideration the goal articulated in the ARRA, we propose that businesses that meet the definition of a Socially and Economically Disadvantaged Small Business receive 5 points.
 - Broadband education, awareness, training, access, equipment and support (10 possible points): To encourage applicants to go beyond mere infrastructure deployment, we suggest a subjective award of up to 10 points for projects that provide broadband education, awareness, training, access, equipment and support to educational institutions, community support organizations, organizations targeting vulnerable populations, and job creating strategic facilities. Points could also be awarded for projects that coordinate with other aspects and goals of ARRA, such as smart-grid or tele-health projects. So for example, a project that in addition to deploying residential retail broadband also provides free broadband access to a local community college or public library could receive up to 10 additional points under this criterion. Also, a project that identified business end-users of the new network who agreed to construct free public WiFi access points could also receive up to 10 additional points.
- Efficiency (15 possible points)
 - Protection against unjust enrichment: USF (5 possible points): To recognize the fact that broadband brings increased “triple-play” revenue opportunities that result in less need for ongoing cost support in high-cost areas, we propose an award of 5 points for projects that affirm the end-user locations served by the ARRA-funded network will not have any need for, and will not request any ongoing Universal Service Fund High Cost program support.
 - Long-term feasibility of business (5 possible points): To encourage the construction of networks that are self-sustaining, we suggest that all applicants provide a detailed business plan that discusses the long-term prospects of the network, including expected

take-rates, expected ongoing costs, and “shovel ready” nature of the projects (such as public rights-of-way agreements or tower site permits already obtained). NTIA can subjectively award up to 5 points depending on their assessment of the soundness and feasibility of each business plan.

- Long-term feasibility of network infrastructure: scalability (5 possible points): To encourage the construction of networks that will be able to meet the future needs of Internet consumers, we propose a point award system that rewards network designs that are efficiently scaleable. So for example, a grant application that includes the construction of middle mile network infrastructure of sufficiently high capacity (e.g. OC-12) would be considered (in part) more scaleable than a network whose only middle mile access was on a legacy DS-3 circuit.
- Jobs (15 possible points)

This criterion is to quantify the overarching goal of the ARRA -- job creation. We suggest a point award system that awards greater levels of points relative to the expected BEA RIMS-II multiplier for telecommunications projects (approximately 15 jobs created per million in increased demand, or approximately \$67,000 per job). So for example, a project that has a total projected cost of \$1 million (and receives \$800,000 in BTOP funds, matched with \$200,000 of the grantee’s own funds) and creates or maintains 23 jobs will receive the full 15 points. In contrast, a project that has a projected total cost of \$1 million that creates or maintains just 9 jobs will receive only 4 of the possible 15 points. It is important to note that an applicant needs to show the direct benefit on jobs, not any future indirect benefit resulting from so-called “network effects.” Thus, the applicant should show jobs created industry wide from the project, and not just jobs created in the applicants own company. In other words, a fiber-to-the-home project will increase employment at both the network operators business, and at businesses that manufacture the fiber optic cables.

Figure 4: Point Allocation based on Job Creation

Multiplier (Jobs created per million expended in total project cost including 20% match)	Points Awarded (Out of a Possible 15)
Less than 5	0
Greater than 5 but Less than 10	4
Greater than 10 but Less than 15	8
Greater than 15 but Less than 20	12
Greater than 20	15

- Required Criteria

We should note that the ARRA contains a number of criteria that are simply requirements, and thus do not need to fit into a weighting selection criteria. So for example, an applicant must demonstrate that the project would not have taken place absent the grant, and the applicant must agree to adhere to the non-discrimination contractual conditions. These are not flexible.

- Possible Criteria Not Included in Our System

We have consciously chosen to omit certain criteria that may appear in other models.

For example we do not have a criteria based on a cost-per-customer-served figure. We chose to avoid this metric because it could run counter to the goal to fund projects that would not have occurred without governmental investment. If the per customer cost is too low, that is a strong indication that the grant is an inframarginal investment that would have, or could have occurred efficiently without the grant.

We also chose to not give weight for projects that serve greater numbers of customers. We feel that there are a wide variety of projects both big and small that deserves funding. To ensure a wide range of projects are funded, and to reduce the administrative burden for NTIA and RUS, we suggest that a strata of project sizes, based on award amounts, are funded. So for example, there should be X dollars devoted to projects that have a total cost of less than \$100,000, and Y dollars devoted to projects that have total costs of more than \$100 million dollars. In this manner, a project that under our point system that receives 80 points and serves 1,000 customers need not directly compete with another project receiving 80 points but serves 100,000 customers.

Finally, we do not distinguish between un- and under-served areas for the purpose of awarding infrastructure deployment grants. We feel that once the criteria for these are set, and once an area is certified as meeting either definition, then they should have equal status to compete for grants under the point award system we've described above.

RECOMMENDATIONS ON OVERSIGHT AND ACCOUNTABILITY

The Broadband Technology Opportunities Program

In the Stimulus Act Congress struck an appropriate balance between the need to get funds out the door quickly, and the need to ensure basic consumer protections and proper accountability. In the BTOP program, Congress rightly recognized the need to proactively ensure that taxpayer funds would not be used to construct a closed Internet. The legislation directs the NTIA and FCC to “publish the non-discrimination and network interconnection obligations that shall be contractual conditions of grants awarded.” These conditions “include at a minimum adherence to the principles contained in the Commission’s broadband policy statement.”

Thus, any BTOP funded network must be operated in a manner that allow consumers to access the lawful content, applications and services of their choice, and consumers must be allowed to attach any device of their choosing to the network.¹⁸ It is important to note that the FCC’s

¹⁸ Federal Communications Commission, CC Docket Nos. 95-20, 98-10, 01-337, 02-33; GN Docket No. 00-185, CS Docket No. 02-52, Policy Statement (rel. Sept. 23, 2005).

broadband policy statement applies to all networks, not just networks built with stimulus funds. Therefore this language of the bill merely affirms the obligation to abide by these principles, even in the event that they are modified or changed either by the Commission or by Court action. These provisions in essence ensure “no blocking” and device freedom, but they do not by themselves prevent non-blocking discriminatory behavior, such as favoring one provider’s content over another. Thus Congress directed the FCC and NTIA to also incorporate non-discrimination conditions.

The FCC should model the BTOP contractual conditions for interconnection after the “just, reasonable and non-discriminatory” language in Sections 251, 252 and 256 of the Communications Act. We suggest the following language:

The duty to provide, for the facilities and equipment of any requesting telecommunications carrier, interconnection with the grant recipient’s network: A) for the transmission and routing of telephone exchange service and exchange access and for broadband service and access; B) at any technically feasible point within the carrier’s network; C) that is at least equal in quality to that provided by the grant recipient to itself or to any subsidiary, affiliate, or any other party to which the carrier provides interconnection; and D) on rates, terms and conditions that are just, reasonable and nondiscriminatory.

This language should be buttressed with interconnection negotiating conditions that are similar to Section 252(b) of the Communications Act, which calls for mandatory arbitration by the relevant state commission between the 135th and 160th days after a request for interconnection.

In addition to adherence to the four principles contained in the Commission’s *Broadband Policy Statement*, we suggest that the FCC define the non-discrimination contractual conditions for BTOP grants as follows:

Grant recipients A) must not provide or sell to Internet content, application or service providers, any service that privileges, degrades, prioritizes or discriminates against any lawful content transmitted over the grant recipient’s network; and B) must offer bandwidth for Internet access upon reasonable request, on rates, terms and conditions that are just, reasonable and nondiscriminatory. Nondiscrimination shall not be construed to prohibit a grant recipient from engaging in reasonable network management consistent with the principle of nondiscrimination.

In addition to the openness conditions, BTOP grantees are required to submit quarterly reports to the NITA detailing how they are using the funds and their progress on fulfilling the “objectives for which such funds were granted.” The legislation requires the NTIA to create a publicly searchable Web site that hosts these reports, as well as other detailed information about BTOP program activities.

Entities receiving grants through the Broadband Data Improvement Act have only the obligation to submit a single report to the Commerce Department on the use of grant funds. The legislation also requires the Commerce Department to host this and other relevant information on a publicly accessible Web site. We suggest that this information be hosted on the main BTOP Web site.

The Rural Utilities Service Broadband Loan and Grant Programs

While the Stimulus legislation did not attach specific interconnection and non-discrimination conditions to RUS funds, the FCC's broadband policy statement, as mentioned above, applies to all broadband networks in the U.S., not just those built with stimulus funds. Any RUS-funded network operator that engages in blocking activities would be subject to the complaint process at the FCC, just as any other network provider would.

The Secretary of Agriculture is required by Mid May to submit to Congress a report on the planned spending of the \$2.5 billion allocated to the RUS broadband grant and loan programs. Further quarterly reports must be submitted thereafter, until all funds are disbursed. These quarterly reports are in contrast to the current requirement of RUS grantees, which mandates annual status reports.¹⁹ Current RUS rules also require grantees to submit annual audits.²⁰

Though there is no specific requirement in the Stimulus Act, we suggest that the RUS provide all quarterly reports and other oversight documents to the NTIA for hosting on the NTIA's publicly searchable Web site, in order to facilitate better accountability and transparency.

¹⁹ 7 C.F.R. § 1739.19.

²⁰ 7 C.F.R. § 1739.20.